METHOD FOR PREDICTING EFFICACY OF DRUGS IN A PATIENT

FIELD OF INVENTION

The present invention relates to the field of medicine, in particular personalized medicine in cancer therapy.

BACKGROUND OF THE INVENTION

The therapeutic care of the patients having cancer is primarily based on surgery, radiotherapy and chemotherapy which have to be used according to standard protocols. The curative surgery consists in removal of all the tumoral mass. However, this is not always possible to guarantee the absence of any residual disease after the ablation of the observable part of the tumour, even by experienced surgeons. This is why the surgery is generally used in combination is with radiotherapy and/or chemotherapy. Chemotherapy and/or radiotherapy can be used as neoadjuvant therapy or auxiliary or adjuvant therapy, or alone when the surgery is impossible. Neoadjuvant therapy is usually used when the tumoral mass is too important and requires a reduction before surgery. Auxiliary or adjuvant chemotherapy is used to treat the residual tumoral diseases and to limit the local recurrences or the metastatic relapses. When a tumour is detected at an inoperable stage, then the therapeutic care is only based on chemotherapy and/or radiotherapy. Surgery is marginally used in this context and has palliative objectives.

In any case, the choice of chemotherapy always raises the following questions: Which drug or combination of drugs is adapted to this type of cancer? What is the most adapted therapeutic strategy for this patient? What are the chances for observing a therapeutic benefit with the selected drugs?

The current medical practice consists in treating the patients according to the existing therapeutic protocols. In the majority of the cases, the choice of the therapeutic protocol is based on the anatomo-pathological and clinical data. These protocols apply in first, second, even third therapeutic line. When there is therapeutic failure, or for the metastatic stages, certain patient are included in clinical trials generally using broad selection criteria defining primarily, the location of the primitive tumour, the extension of the disease, the situation of the vital functions of the patient and certain specific contraindications of the drug under trial.

Whatever the therapeutic approach (standard or clinical trial), only part of the treated population profits from the treatment whereas the remainder of the patients do not respond and show a progressing disease even under treatment.

To improve this situation, since many years, physicians and researchers are trying to identify markers for predicting the efficacy of the treatments for a given patient and to be able to adapt the treatment of each patient. Thus the concept of personalized medicine consists in adapting the therapeutic decision according to the anatomo-pathological, clinical characteristics but especially of the biological characteristics of the tumour.

Several examples are known without representing a solution useful for any patient having a cancer.

A first approach was the so-called "test-companion" assay, used for the first time for the trastuzumab (Herceptin®), a monoclonal antibody targeting the Her2/Neu receptor. In breast cancers, this drug is administered only when an amplification/overexpression of this receptor is observed. However, this overexpression does not guarantee a therapeutic response. Some resistances to Herceptin® can be explained by an activation of the Akt pathway, for instance. The association of an mTOR inhibitor (targeting the Akt pathway) can restore the sensitivity to Herceptin. Nevertheless, for some patients, the therapeutic benefit was observed in the absence of an amplification of the receptor.

The measurement of the expression level of the Her2 receptor is the first example of test companion and the majority of pharmaceutical companies or researchers are trying to reproduce this model considered as the first example of personalized medicine. The following examples are relevant to illustrate the concept of selection of the patients who could profit from a given drug:

- Mutation or amplification of EGFR receptor and erlotinib / gefitinib;
- Mutations c-Kit/PDGFRa and imatinib ;
- Translocation of Bcr-Abl and imatinib ;
- Amplification of HER2 and HER2 inhibitors;
- Amplification of TOP2A and anthracyclines;
- Deletion of PTEN and mTOR inhibitors;
- Amplification of FGFR1 and FGFR1 inhibitors;
- ERCC1 negative-treatment and platinium salts ;
- RAS mutations and treatment of colon cancer
- *etc.....*

In the case of breast cancer, prognostic molecular signatures, such as the tests Mamaprint® (developed by the Agendia company) or OncotypeDX® (company Genomic Health) are available. These signatures are used to determine if an auxiliary chemotherapy is necessary or not. But, although these tests make it possible to conclude on the need from an auxiliary chemotherapy, they do not make it possible to select the optimal therapy.

In short, the concept of personalized medicine corresponds to a selection of patients on biological criteria to increase the chances of response to a given therapy. Currently, these tests companion are rather used for the treatments by targeted therapies and make it possible to select the patients likely to profit from a given therapy but not to select the best therapy for a given patient. This is a major conceptual difference which constitutes the main interest of the present invention compared to the other markers proposed to date.

The anomalies of strong amplitude of the gene copy number (amplifications or deletions) modify the levels of gene expression. This mechanism of genomic deregulation is involved in the ontogenesis of many cancers. Amplifications of the EGFR gene are found in approximately 30% of lung cancers. The inhibition of EGFR in case of amplification is associated with a significant benefit in this same pathology. Similarly, MYCN is amplified in approximately 25% of the neuroblastoma and several studies showed the prognostic value of this anomaly in this pathology. Other oncogenes / anti-oncogenes (tumour suppressor genes) are frequently amplified/deleted in other types of tumours such HER, PTEN, PUTS, and the like.

Breast cancer presents an important frequency of chromosomal aberrations. Gene HER2 (ErbB2) is amplified in 10 to 20% of the cases. This amplification is associated with a hyper-expression of the Her2 protein and is involved in the tumoral transformation. A therapeutic strategy based on the targeting of this anomaly showed a benefit in the patients having HER2-positive breast cancer. In addition, the gene coding for the topoisomerase II is amplified in approximately 7% of breast cancers. This amplification is correlated with a good sensitivity to the anthracyclines, a class of drugs targeting the topoisomerase II. Other anomalies have often been observed in breast cancer. A1B1 gene is amplified in 10% of the cases, and leads to ontogenesis via the activation of AKT by the IGFR. FGF1R gene is amplified in 10% of case. The targeting of this protein by a tyrosine kinase inhibitor leads in vitro to a reduction of the cell multiplication. Similarly, amplifications of the genes EGFR, IGF1R or the deletions of PTEN can be treated by molecules targeting EGFR, IGF1R or mTOR, respectively.

In the scientific literature, certain works, among which those of A. Potti et al, propose a prediction of the drugs efficacy, primarily cytotoxicity, based on the analysis of the expression of genes selected from experiments on well-established cell lines (panel NCI60). These data allow the identification of expression profiles associated with the response for each tested molecule and this prediction is transposed to the human tumours. However, if this approach allows a molecule by molecule prediction, it does not allow the comparison of the efficacy of each molecule for a given patient in order to select the best drug. In addition, the one skilled in the art knows the limitations of *in vitro* model to perform *in vivo* predictions. These approaches tend to enrich the patient cohort for a given chemotherapy rather than to select a targeted individual therapy for a given patient on the basis of the intrinsic tumoral characteristics.

However, the choice of the appropriate chemotherapy in cancer treatment is a crucial issue. Indeed, most of the chemotherapies have very significant adverse effects and an erroneous choice (i.e., treatment without any therapeutic benefit) could lead to a cancer progression.

Up today, there is no marker efficient to select the most optimal therapeutic strategy for a given individual having a cancer. Accordingly, there is a strong need to methods of personalized medicine in the field of cancer treatment allowing the selection for a given individual of the most appropriate chemotherapy strategy.

SUMMARY OF THE INVENTION

The present invention concerns a method for predicting the relative efficacy of a plurality of drugs for treating a cancer in a patient comprising:

- characterizing molecular anomalies of a tumour or metastase sample from the patient in comparison to a normal sample from the same patient, thereby determining the deregulated genes in the tumour;

- providing a database comprising the target genes for each drug of the plurality of drugs;

- determining a score for each drug of the plurality of drugs essentially based on the percentage of deregulated genes among the target genes for each drug in the tumour sample from the patient, thereby a higher score is predictive of a higher relative efficacy of the drug for treating the tumour in the patient. Preferably, the normal sample is the normal histologic counterpart to the primary tumor.

In particular, the step of characterizing molecular anomalies of a tumour sample comprises determining the genes differentially expressed in the tumour in comparison to the normal sample, and/or determining the gain or loss of gene copy number and/or detecting the presence of a mutation in a gene. Preferably, the step of characterizing molecular anomalies of a tumour sample comprises determining a fold change (F) for the differentially expressed genes and/or for the gain or loss of gene copy number and, optionally, further determining the intensity of the gene transcription (Int) for the differentially expressed genes.

Preferably, the target genes for each drug are classified in the database into the major target genes (MC), the minor target genes (Mc) and the resistance genes (CR).

In a first embodiment, the score (W) for a given drug is determined by the following algorithm:

$$W = P\, z\, \frac{(\Sigma_C F_{c>2})}{n_C F_{c>2}}$$

wherein

W is the score for the given drug ;

P is the percentage of target genes for the given drug which are deregulated in the tumour of the patient;

z is an optional multiplication coefficient associated to the presence of a mutation in a target gene of the given drug ;

Σ is sum ;

Fc>2 is the fold change of each deregulated target gene for the given drug with a Fold Change higher than 2;

$nC_{Fc>2}$ refers to the number of target genes for the given drug with a Fold Change higher than 2.

Preferably, Fc>2 is the Fold Change of each over-expressed target gene for the given drug with a Fold Change higher than 2 and $nC_{Fc>2}$ is either the number of target genes for the given drug with a Fold Change higher than 2, or the number of over-expressed target genes for the given drug with a Fold Change higher than 2.

In a second embodiment, the score (W) for a given drug is determined by the following algorithm:

$$W = P\left[\frac{(\Sigma_{CM} F_{CM})}{n_1 CM} q_1 z_1 + \frac{(\Sigma_{Cm} F_{Cm})}{n_2 Cm} q_2 z_2 - \frac{(\Sigma_{CR} F_{CR})}{n_3 CR} q_3 z_3\right]$$

wherein

W is the score for the given drug;

P is the percentage of target genes for the given drug which are deregulated in the tumour of the patient;

Σ is sum ;

CM refers to major target genes for the given drug;

Cm refers to minor target genes for the given drug;

CR refers to resistance genes for the given drug;

n_1CM, n_2Cm and n_3CR are respectively the number of deregulated target genes with a defined threshold for major target genes, minor target genes and resistance genes;

F_{CM}, F_{Cm} and F_{CR} are the Fold change of each gene higher than the defined threshold for major target genes, minor target genes and resistance genes, respectively;

q_1, q_2 and q_3 are optional multiplication coefficients for major target genes, minor target genes and resistance genes, respectively;

z_1, z_2 and z_3 are optional multiplication coefficients associated to the presence of a mutation in a major target gene, a minor target gene and a resistance gene, respectively.

In a third embodiment, the score (W) for a given drug is determined by the following algorithm:

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM})}{n_1 CM} q_1 z_1 + \frac{P_{Cm}(\Sigma_{Cm} F_{Cm})}{n_2 Cm} q_2 z_2 - \frac{P_{CR}(\Sigma_{CR} F_{CR})}{n_3 CR} q_3 z_3$$

wherein the meaning of W, Σ, CM, Cm, CR, F_{CM}, F_{Cm}, F_{CR}, q_1, q_2, q_3, z_1, z_2 and z_3 are the same than the previous algorithm and P_{CM}, P_{Cm} and P_{CR} are the percentage of genes for the given drug which are deregulated in the tumour of the individual for major target genes, minor target genes and resistance genes, respectively

In a fourth embodiment, the score (W) for a given drug is determined by one of the following algorithms:

$$W = P\left[\frac{(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1 CM} q_1 z_1 + \frac{(\Sigma_{Cm} F_{Cm} \times Int_{Cm})}{n_2 Cm} q_2 z_2 - \frac{(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3 CR} q_3 z_3\right]$$

or

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1 CM} q_1 z_1 + \frac{P_{Cm}(\Sigma_{Cm} F_{Cm} \times Int_{Cm})}{n_2 Cm} q_2 z_2 - \frac{P_{CR}(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3 CR} q_3 z_3$$

wherein the meaning of W, Σ, CM, Cm, CR, F_{CM}, F_{Cm}, F_{CR}, q_1, q_2, q_3, z_1, z_2 and z_3, and if present P_{CM}, P_{Cm} and P_{CR}, are the same than the previous algorithm and Int_{CM}, Int_{Cm} and Int_{CR} are the intensity for major target genes, minor target genes and resistance genes, respectively.

In a fifth embodiment, the score (W) for a given drug is determined by one of the following algorithms:

$$W = P\left[\frac{(\Sigma_{CM} F_{CM})}{n_1 CM} q_1 z_1 - \frac{(\Sigma_{CR} F_{CR})}{n_3 CR} q_3 z_3\right]$$

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM})}{n_1 CM} q_1 z_1 - \frac{P_{CR}(\Sigma_{CR} F_{CR})}{n_3 CR} q_3 z_3$$

or

$$W = P\left[\frac{(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1 CM} q_1 z_1 - \frac{(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3 CR} q_3 z_3\right]$$

or

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1 CM} q_1 z_1 - \frac{P_{CR}(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3 CR} q_3 z_3$$

wherein the meaning of W, Σ, CM, CR, F_{CM}, F_{CR}, q_1, q_3, z_1 and z_3, and if present P_{CM}, P_{CR}, Int_{CM}, and Int_{CR} are the same than the previous algorithms.

Preferably, in the second to fifth embodiment, F_{CM}, F_{Cm} and F_{CR} are the Fold Change of each over-expressed target gene for the given drug with the defined threshold and n_1CM, n_2Cm and n_3CR are either the number of target genes for the given drug with the defined threshold, or the number of over-expressed target genes for the given drug with the defined threshold. More preferably, the defined threshold is a Fold change of at least 2 or higher than 2.

In addition, in the second to fifth embodiment, multiplication coefficients for the target genes can be comprised between 10 and 1,000 for major target genes (q_1), 0.1 and 10 for minor target genes (q_2) and 10 to 1,000 for resistance genes (q_3).

Furthermore, in the second to fifth embodiment, multiplication coefficients associated to a mutation Z_1, z_2 and Z_3 are 1 when no mutation exists and, depending on the functional impact of the mutation, can be comprised between 10 and 1,000.

One aspect of the invention relates to a method for predicting the relative efficacy of a plurality of drugs for treating a cancer in a patient comprising: - characterizing molecular anomalies of a tumour sample from the patient in comparison to a normal sample from the same patient, thereby determining the deregulated genes in the tumour; - providing a database comprising the target genes for each drug of the plurality of drugs; - determining a score for each drug of the plurality of drugs essentially based on the percentage of deregulated genes among the target genes for each drug in the tumour sample from the patient, thereby a higher score is predictive of a higher relative efficacy of the drug for treating the tumour in the patient.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 : Thoracic scanner in October 2005 of the patient of Example 1.

Figure 2 : Thoracic scanner in November 2008 of the patient of Example 1.

Figure 3 : Thoracic scanner in April 2009 of the patient of Example 1.

Figure 4 : Thoracic scanner in July 2009 of the patient of Example 1.

Figure 5 : Thoracic scanners in January and March 2010 of the patient of Example 3.

DETAILED DESCRIPTION OF THE INVENTION

The present invention provides a new concept for selecting the most appropriate therapy at the individual level. The drug selection is based on the biologic characteristics of the tumor of the individual to be treated in comparison to a normal sample from the same individual. Based on a score essentially based on the percentage of deregulated target genes or microRNAs for each drug, the relative efficacy of the drugs can be predicted for the individual in order to treat the specific tumour.

General Concept

It is at the level of the optimal therapeutic strategy choice that applies the object of the present invention. For selecting the most appropriate therapeutic strategy, the method of the present invention is taking into account of, on one hand, the biological data of the tumor to be treated as a whole and, on the other hand, a plurality of drugs, preferably all existing drugs (either registered or in development). A score is determined for each drug based on the biological characteristics of the specific tumour to be treated for a given subject. This score makes it

possible to order the various drugs in decreasing order for their potential efficacy. The physician can use these scores to select the optimal drug or combination of drugs for the given subject. This approach, allowing the association of each drug with a score depending on the biological characteristics of the tumour, constitutes the basis of this invention. Therefore, this invention is likely to meet the present needs for personalized medicine.

The method can be used both for registered drugs and for developed drugs (e.g., temporary authorization of use or clinical trials).

This concept thus consists in considering the choice of the therapy for the patient at the level of the individual depending on the intrinsic characteristics of his tumour and not on global results obtained from large groups of individuals.

The present invention is based on the combination of three fundamental points, detailed below, and which are combined together to optimize the choice of the strategy for each individual having a cancer:

- The first point corresponds to the analysis, as exhaustive as possible, of the biological or gene anomalies (amplification, deletions, mutations, gene expression, microRNAs expression and the like) which characterize a given tumour for an individual.

- The second point consists in the identification of genes known to be in relation with a drug.

- The third point corresponds to the establishment of the connection between each drug and the anomalies detected in the tumour to be treated in an individual. An algorithm has been indentified for calculating a score for each drug in consideration of the tumour characteristics and the genes known to be in relation with a drug.

The method of the invention will allow guiding the therapeutic choice because the available drugs will be ordered on their score basis, reflecting their potential therapeutic efficacy for the given tumour in an individual.

One advantage of the present method is that the relative efficacy of a plurality of drugs can be predicted for an individual without exposing the individual to drugs. By a plurality of drugs is intended at least or about 10, 20, 30, 40, 50 or 100 different drugs. Indeed, when a panel of drugs is available for treatment, one cannot be envisaged to try the treatment by each drug on the patient. The present method allows the consideration of all potential therapeutic strategy and the selection of the most appropriate for the patient.

Indeed, the scores for the plurality of drugs allow the determination of the relative efficacy of the plurality of drugs for treating the tumour of the considered individual. Indeed, a drug having a higher score than another drug is predicted to have a higher efficacy for treating the tumour. By treating is intended that the drug allows to stop or slow down the growth of the tumour, and/or to decrease the size of tumour even up to its disappearance. By treating is also intended to avoid the metastasis, the recurrence or the relapse.

Another advantage is that the method does not depend on a cancer type. The method of the invention can be used for any type of cancer including haematological tumour (e.g. leukemia, lymphoma) and bladder, breast, stomach, thyroid, prostate, testis, liver, pancreatic,

bone, pancreatic, kidney, endometrial, melanoma, lung, gastric, colorectal, prostate, head or neck tumours, brain, neuroblastoma, and ovarian cancer.

In a preferred embodiment, the patient or individual is a human being.

Tumour characterization

Tumour characterization corresponds to the analysis, as exhaustive as possible, of the biological or gene anomalies (amplification, deletions, mutations, gene expression and the like) which characterize a given tumour for an individual. In particular, the anomalies are determined in a tumour from the patient in comparison with a normal tissue of the same patient. Preferably, the tumour sample and the normal sample provides from the same type of tissue. For the tumour characterization, several technologies are available and can be combined.

The first technology is the gene analysis. This analysis can be carried out by CGH (Comparative Genomic Hybridization) which makes it possible to compare the tumoral DNA with the normal DNA of the same individual to detect chromosomal aberrations, i.e. the chromosomal losses or gains. This technology is well-known by the man skilled in the art. As an illustration of this knowledge, the following reviews or reference books can be cited: Davies et al. (2005, *Chromosome Research*, 13, 237-248). This technology can also help to identify translocations. It can be easily carried out with frozen biopsies or tumoral paraffin-included material. CGH results are expressed as the ratios of copy numbers in the tumoral material and in normal tissue. A threshold of 0.5 is been acknowledged to describe a gain or a loss. More this ratio is high, more the amplitude of the anomaly is important. Thus, an important anomaly is likely to have a real impact at the biological level. However, the chromosomal aberrations only represent a weak part of the origins of gene expression deregulation. This is why other technologies are necessary. CGH have another advantage, to certify presence of tumoral samples in the tumoral biopsy or biospecimen, and this whenever an aberration can be detected.

The second technology allowing a functional genomic analysis corresponds to the measurement of mRNA and microRNA. The determination of the expression level variation for these RNA is carried out by comparing the expression levels in a tumoral tissue and in the corresponding normal tissue. For instance, in case of colon adenocarcinoma, the corresponding normal tissue is the normal colic mucosal tissue. The gene expression analysis allows the study of the independent deregulations or deregulations due to chromosomal aberrations. Indeed, the regulation of the transformational activity of genes is complex and

involves many levels of regulation: trans/cis transcription factors, promoters, chromatin regulation, and the like. Generally, all deregulations (over-expression or under-expression) are considered with a ratio tumour/normal of at least 2. This threshold called "fold change" can thus have a positive value > 2 or a negative value < -2. The same concept applies to the microRNAs which play an important role in the post-transcriptional regulation of genes, therefore for the proteins expression. Technologies that can be used comprise Northern analysis, mRNA or cDNA microarrays, RT-PCT (in particular quantitative RT-PCR) and the like. The level of transcription can be determined at the mRNA level or at the encoded protein level. Protein expression can be assessed by Western blotting, immunoassay, proteomics tools or mass spectrometry.

These two types of analyses, CGH and RNA expression determination can be supplemented by an analysis of the mutational status of genes. Indeed, the presence of mutation leading to a functional gain or loss has an important effect on biology of the tumour without being always connected to variations of gene expression or of gene copy number. Many mutations are known to have a direct effect on the activity of a treatment by inducing increased sensitivities or resistances. For example, the mutations in the tyrosine kinase domain of EGFR are often associated with sensitivity to the small molecules inhibiting EGFR, the mutations in KRAS gene are associated with resistance to the treatment by monoclonal antibodies targeting EGFR. In addition to mutational status, some SNP can also be detected. Indeed, SNP can be also associated to a functional gain or loss, a resistance or a toxicity for a drug. The mutational status can be determined by any method known in the art, for instance by sequencing, microsequencing or hybridization.

In short, high throughput genomic technologies can be used to characterize in the most exhaustive possible way the biological anomalies of a given tumour from an individual to be treated. The experimental data for each tumour are compiled in basic files being used for the application of the algorithms allowing calculation of a score for each drug. These files comprise the copy number of genes, the mutations, the fold-changes or the intensities of signals (proportional to the number of transcripts or to the number of gène copy) for normal tissue (Intensity 1 or I1) and for tumoral tissue (intensity 2 or I2). The functional genomic analysis allows the simultaneous measurement of 44,000 or more (for example 244,000) RNA sequences covering all the genome. Preferably, a filtration can be applied to retain only the probes having a ratio or fold-changes higher or lower than 2 and whose average of the intensities I1 and I2 is higher than 100 units of fluorescence (arbitrary units).

The term "molecular anomalies" refers herein to the gene expression differences (either mRNA, microRNA or protein expression), to a gain or loss of gene copy number, or to a mutation presence.

In a particular embodiment of the invention, the exhaustive characterization of the tumour is replaced by the characterization of the target genes of the drug database. In this embodiment, specific array can be prepared to determine the gene expression level of all the target genes of the database.

Drug Database

For the method of the invention, it is necessary to provide a database with a list of target genes for each drug of the database. As explained before, a target gene for a drug can be, without to be limited thereto, any gene documented to be involved in the drug mechanism of action, to be involved in the drug metabolism, to have a modified gene expression in presence of the drug, to be associated with a drug resistance, to be associated with a drug toxicity. The database can be prepared based on the search in the public databases (such as CTD, DrugBank, PubMed, and the like) in order to identify the genes associated with each drug. For instance, the database can be built based on the CTD (The Comparative Toxicogenomics Database, http://ctd.mdibl.org/) data for a selection of drugs and their molecular targets (genes), restricted to the human species (ID 9606). These data can be crossed with genes' information from LocusLink (gene symbol, RefSeq NM, gene description). Finally, each drug / gene interaction in the database can be qualified from the available publications, to determine the type of interactions: some positive interactions (target, sensitivity, drug activator, drug carrier, toxicity reverser, ...), some negative interactions (resistance, toxicity, drug metabolism, apoptosis, death, ...).

The identified genes can have different roles and significances. Therefore, in a preferred embodiment, the target genes are classified into three categories: the major target genes, the minor target genes and the resistance genes. The identification of these genes from the public data (public literatures and data banks) and their classification in the three categories form an integral part of this invention. The major target genes are those which have been demonstrated to have a clear cause and effect link with the drug mechanism of action. For example, HER2 gene is regarded as major target gene for trastuzumab, VEGFA gene is regarded as major target gene for bevacizumab, and the like. A given drug can have one or more major target genes. This category also includes the genes known to be involved in the drug metabolization when drugs are known to become active only when an active metabolite

is generated. The minor target genes are those which are found to be those whose level of regulation is modified in the presence of the drug, without a direct link with the drug mechanism of action. The resistance genes comprise genes known to induce a direct resistance to the drug but also genes associated with a major toxicity. For example, ERCC1 gene is a target gene of resistance for the use of platinum salts. For example, some cytochrome P450 isoforms are associated with a major toxicity.

In a particular embodiment of the invention, the considered target genes can only belong to the two following categories: the major target genes and the resistance genes.

A first drug database has been established by the inventors and is disclosed in Table 1. For some drugs, the target genes have been categorized.

The drug database can be incremented over the time, by categorizing target genes for a drug, and/or by adding new drug, new target genes and/or by including combination data (e.g. combination of drugs with radiotherapy or combination of drugs).

More complete is the drug database, more accurate is the prediction. However, the method for predicting the relative efficacy of drugs can be carried out as soon as a preliminary database is ready.

Algorithm

An algorithm has been indentified for calculating a score for each drug in consideration of the tumour characteristics and the genes known to be in relation with a drug. This calculation can be carried out by specific softwares by using of the scripts developed under R for instance, and allowing the determination of the frequencies and the association links between the file of target genes for the drugs and the file integrating the data of the genomic analysis resulting from the biological investigation from the tumour of the individual.

The algorithm can take into account the following parameter:

1) the whole percentage of deregulation of target genes of a drug. Therefore, the list of target genes for a given drug is compared with the list of deregulated genes in order to determine the percentage of deregulated genes for this drug. For instance, if 10 target genes have been identified for a given drug and, for a given tumour, 4 of the 10 target genes are found to be deregulated, then the percentage of deregulated genes for this drug is 40 %.

2) the deregulation extent and sense (e.g., over- or under-expression) of the target genes defined by a Fold Change (Fc) and an average intensity (AvgInt). These parameters can

be defined either as a whole for the target genes or by each category (e.g., major target genes, minor target genes and resistance target genes).

3) the presence of mutations in target genes known to have an effect on the given drug.

An algorithm is used to calculate a score for each drug of the database in consideration of the tumour characterization for the subject to be treated.

A first basic algorithm that can be used in the method is the following:

$$W = P\, z\, \frac{(\Sigma_C F_{c>2})}{n_C F_{c>2}}$$

wherein

W is the score for a given drug;

P is the percentage of target genes for the given drug which are deregulated in the tumour of the individual;

z is an optional multiplication coefficient associated to the presence of a mutation in a target gene ;

Σ is sum ;

Fc>2 is the Fold Change of each deregulated target gene for a given drug with a Fold Change higher than 2;

$nC_{Fc>2}$ refers to the number of target genes for the given drug with a Fold Change higher than 2.

In a particular embodiment of this algorithm, Fc>2 is the Fold Change of each over-expressed target gene for a given drug with a Fold Change higher than 2 and $nC_{Fc>2}$ can refer to the number of target genes for the given drug with a Fold Change higher than 2, or the number of over-expressed target genes for the given drug with a Fold Change higher than 2.

Of course, the algorithm can be more complex in order to take into account the category of the target genes (e.g., major target gene, minor target gene or resistance target gene), for instance by introducing a multiplication coefficient.

Such a more complex algorithm can be the following :

$$W = P\left[\frac{(\Sigma_{CM} F_{CM})}{n_1 CM} q_1 z_1 + \frac{(\Sigma_{Cm} F_{Cm})}{n_2 Cm} q_2 z_2 - \frac{(\Sigma_{CR} F_{CR})}{n_3 CR} q_3 z_3\right]$$

wherein

W is the score for a given drug;

P is the percentage of target genes for the given drug which are deregulated in the tumour of the individual;

Σ is sum ;

CM refers to major target gene for the given drug;

Cm refers to minor target gene for the given drug;

CR refers to resistance gene for the given drug;

n_1CM, n_2Cm and n_3CR respectively are the number of deregulated target genes with a defined threshold for major target genes, minor target genes and resistance genes;

F_{CM}, F_{Cm} and F_{CR} are the Fold change of each gene higher than the defined threshold for major target genes, minor target genes and resistance genes, respectively;

q_1, q_2 and q_3 are multiplication coefficients for major target genes, minor target genes and resistance genes, respectively;

z_1, z_2 and z_3 are optional multiplication coefficients associated to the presence of a mutation in a major target gene, a minor target gene and a resistance gene, respectively.

For instance, multiplication coefficients for the target genes can be comprised between 10 and 1,000 for major target genes, 0.1 and 10 for minor target genes and 10 to 1,000 for resistance genes. Other values for multiplication coefficients are not excluded.

The multiplication coefficients associated to a mutation are 1 when no mutation exists. Depending on the functional impact of the mutation, the coefficient z can be comprised between 10 and 1,000, for instance. Other values for multiplication coefficients associated to a mutation are not excluded.

In a preferred embodiment, the defined threshold is a Fold change of at least 2 or higher than 2. However, the consideration of a lower threshold is not excluded in the present method since a fold change of 1.5 can be significant for some genes.

In a particular embodiment, F_{CM}, F_{Cm} and F_{CR} can be the Fold Change of each over-expressed target gene for the given drug with the defined threshold and n_1CM, n_2Cm and n_3CR can refer to the number of target genes for the given drug with the defined threshold, or the number of over-expressed target genes for the given drug with the defined threshold.

In an alternative complex algorithm, the formulae can be the following:

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM})}{n_1 CM} q_1 z_1 + \frac{P_{Cm}(\Sigma_{Cm} F_{Cm})}{n_2 Cm} q_2 z_2 - \frac{P_{CR}(\Sigma_{CR} F_{CR})}{n_3 CR} q_3 z_3$$

wherein the meaning of W, Σ, CM, Cm, CR, F_{CM}, F_{Cm}, F_{CR}, q_1, q_2, q_3, z_1, z_2 and z_3 are the same than the previous algorithm and P_{CM}, P_{Cm} and P_{CR} are the percentage of genes for the

given drug which are deregulated in the tumour of the individual for major target genes, minor target genes and resistance genes, respectively.

Similarly, in a preferred embodiment, the defined threshold is a Fold change of at least 2 or higher than 2. However, the consideration of a lower threshold is not excluded in the present method since a fold change of 1.5 can be significant for some genes.

In a particular embodiment, F_{CM}, F_{Cm} and F_{CR} can be the Fold Change of each over-expressed target gene for the given drug with the defined threshold and n_1CM, n_2Cm and n_3CR can refer to the number of target genes for the given drug with the defined threshold, or the number of over-expressed target genes for the given drug with the defined threshold.

In a particular embodiment, the algorithm can take into account the average intensity or intensity variation. This parameter is indicative of the transcription level of genes. Indeed, it can be considered that for a same Fold Change of 2, a gene deregulation can have a different weight depending on the intensity of the transcription, for instance 200/100 in comparison to 200,000/100,000.

Accordingly, a still more complex algorithm can be one of the followings :

$$W = P\left[\frac{(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1CM} q_1 z_1 + \frac{(\Sigma_{Cm} F_{Cm} \times Int_{Cm})}{n_2Cm} q_2 z_2 - \frac{(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3CR} q_3 z_3\right]$$

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1CM} q_1 z_1 + \frac{P_{Cm}(\Sigma_{Cm} F_{Cm} \times Int_{Cm})}{n_2Cm} q_2 z_2 - \frac{P_{CR}(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3CR} q_3 z_3$$

wherein the meaning of W, Σ, CM, Cm, CR, F_{CM}, F_{Cm}, F_{CR}, q_1, q_2, q_3, z_1, z_2 and z_3, and if present P_{CM}, P_{Cm} and P_{CR}, are the same than the previous algorithm and Int_{CM}, Int_{Cm} and Int_{CR} are the intensity for major target genes, minor target genes and resistance genes, respectively. "Int" can be the intensity of the gene transcription in the tumour sample, the difference of the gene transcription between the tumour sample and the normal sample from the individual.

In an additional embodiment, the method can be focused on the major target genes and the resistance genes, without taking into account of the minor target genes. In this embodiment, the algorithm could be one of the followings:

$$W = P\left[\frac{(\Sigma_{CM} F_{CM})}{n_1CM} q_1 z_1 - \frac{(\Sigma_{CR} F_{CR})}{n_3CR} q_3 z_3\right]$$

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM})}{n_1 CM} q_1 z_1 - \frac{P_{CR}(\Sigma_{CR} F_{CR})}{n_3 CR} q_3 z_3$$

$$W = P\left[\frac{(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1 CM} q_1 z_1 - \frac{(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3 CR} q_3 z_3\right]$$

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1 CM} q_1 z_1 - \frac{P_{CR}(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3 CR} q_3 z_3$$

wherein the meaning of W, Σ, CM, CR, F_{CM}, F_{CR}, q_1, q_3, z_1 and z_3, and if present P_{CM}, P_{CR}, Int_{CM}, and Int_{CR} are the same than the previous algorithms.

Preferably, the selected algorithm is validated with two models: a retrospective model (e.g., tumours for which chemotherapies have been performed and for which the response to treatments is known) ; and a prospective model allowing the evaluation of the efficacy of a particular treatment in relation with the score.

During the algorithm validation tests, some variables can be refined, in particular the multiplication coefficients, the consideration of the average intensity or not, the threshold of the fold change. In addition, during this step, one can determine if it is preferable to use CGH or functional genomic analysis or both.

The method also considers other variants of the algorithm that could be proposed, the final objective staying to calculate a score for each drug based on the characteristic of the tumour of the individual to be treated, in particular on the biologic and genetic anomalies of the tumour.

Further aspects and advantages of this invention will be disclosed in the following examples, which should be regarded as illustrative and not limiting the scope of this invention.

EXAMPLES

Example 1

At diagnosis, 70% of lung cancers are in late stages. They are non operable with a poor clinical outcome.

The method of the present invention has been used in a patient case to help the practitioner to choose the most appropriate treatment.

The patient was a male Caucasian of 58 years old. He suffered of a non-small cell lung carcinoma (NSCLC), cT4, N0, M1. Nine therapeutic lines have been used, namely cisplatin-Gemzar, taxotere, navelbine, taxol-carboplatin, mediastinal radiotherapy, IRESSA, alimta, tarceva and HKI 272 (pan Her inhibitor). For HKI 272, the patient has been included in a clinical trial.

HKI 272 began in October 2005. Figure 1 show NMR of mediastinal lymph node (C1) and adrenal node (C2). HKI was efficient; the patient remained in the study almost three years. However, after 37 months of HKI 272, a disease progression was observed (Figure 2). New subclavious metastasis appeared. This is one of the biggest problems in oncology today, even if there is initial response, a secondary resistance to treatment often occurs. Accordingly, the decision to stop HKI 272 treatment was taken since new metastasis occured. It is important to mention that practicioners considered at that time that HKI 272 was the last therapeutic lines available for this patient.

Subclavious metastasis was resected and used for complete molecular profiling. The features of the profiling were:

1- comparison tumoral tissue versus normal lung tissue (T vs N);
2- Comparative genome hybridzation (CGH) (T vs N);
3- Gene expression (GE) comparison (T vs N);
4- microRNA (miRNA) profiling (T vs N);
5- Sequencing of genes including EGFR, p53, CTNNB1, AKT1, BRAF, KRAS, HRAS, NRAS, PIK3CA, FBXW7, EGFR, ERBB2, KIT, NOTCH1, PTEN, STK11, TP53, APC, MET, RB1, FGFR2, FGFR3, JAK2, TSC1, TSC2, CDKN2A, CDKN2A, TOP1, TOP2A, PDGFRA, VHL, CDK4, JAK1, TYK.
6- No relevant mutations were found in any of these genes (for example no mutation of EGFR or other genes). Therefore mutations did not impact algortitm for this patient. Only relevant results obtained with gene expression were used.

Then, the algorithm of the present invention was applied on these data in order to predict the drug efficacy. A score for each drug was calculated based on the collected data. The algorithm used was the following:

$$W = P\,z\,\frac{(\Sigma_C F_{c>2})}{n_C F_{c>2}}$$

whith

W is the score for a given drug;

P is the percentage of target genes for the given drug which are deregulated in the tumour of the individual;

z is 1 because, in this example, no mutation was detected;

Σ is sum ;

Fc>2 is the Fold Change of each deregulated target gene for a given drug with a Fold Change higher than 2;

$nC_{Fc>2}$ refers to the number of target genes for the given drug with a Fold Change higher than 2.

Table 2 shows the calculated scores. It can be observed that the drugs used in the previous therapeutic lines were associated with low scores, namely 108 for cisplatine, 70 for gemzar, 77 for taxotere, 147 for taxol, 82 for carboplatin, 66 for Iressa, and 73 for Alimta.

On December 2008, HKI 272 was stopped and a treatment with a combination of Xeloda (3 600 mg/day, from Day 1 to Day 14, every 21 days) and Lapatinib (1 250 mg/day) began. At the beginning of this treatment, the patient showed a rapid disease progression and demonstrated a degraded health. Lapatinib, an anti-HER1 and -HER2 inhibitor, was justified, even if no mutation was detected in EGFR, because EGF overexpressed 15 folds in the patient and it was needed to continue HKI 272. Indeed, overexpression of EGF in the tumor induces a constant activation of EGFR, that is why it appeared logic to assure the transition from HKI272 to another anti EGFR in order to cover the same spectra. Xeloda (score 555) was selected based on algorithm's score.

The disease was stable but recurrential paralysis was observed. Accordingly, in February 2009, it was decided to add Thiotepa which showed the highest algorithm score (score 713). After two months of treatment with the combination Xeloda (3 600 mg/day, 5 days by week, 3 weeks on 4 weeks), Lapatinib (1 250 mg/day) and Thiotepa (15-30 mg/day, Days 1 and 2, every 4 weeks), the disease was stable (Figure 3). The disease was still stable for eleven months (Figure 4), no more recurrential paralysis occurred and the patient showed a good general status.

In addition, the present method allows the determination of future therapeutic combinations. Indeed, during cancer treatment, resistance often appears. At least three others drugs showed high scores and can be used in case of resistance to the combination Xeloda, Lapatinib and Thiotepa, namely fotemustine (score 627), rituximab (score 761) and trabectidin (score 376).

By using the present method for selecting drugs, unexpected results were obtained. Indeed, without the score predicting the potential efficacy of a drug for a particular patient,

the practitioner would not select both Xeloda and Thiotepa. Indeed, there is no indication for these drugs in lung cancer, in particular NSCLC. The present method allowed reaching fourteen months of stability with a good general status for the patient, whereas the vital prognosis was only of few weeks at the initiation of the treatment with the combination of Xeloda and Thiotepa.

In conclusion, the present example proves the value of the method of the present invention to help the practitioner to select appropriate drugs based on the individual data.

Retrospectively, the use of the new predicting method clearly demonstrated that all previous therapeutic lines, totaly inefficient, were associated with a very low predictive score, as described. This is exactly the purpose of this innovative method, to be able to provide a predictive determination of the efficacy of drugs, and in this example, there is perfect validation of the concept, since all used inefficient drugs are linked with low score.

Other patients experiment the new procedure, and the high added value of the present method is to demonstrate that each patient needs a unique combination of drugs. The method appears therefore extremely relevant in the area of individualized selection of treatments.

Example 2

The patient was 64 years old. He suffered of a bronchial adenocarcinoma T4 with bones and pleural metastases. Two therapeutic lines have been used, namely cisplatin-Alimta and Tarceva. The first therapeutic line was associated with disease progression and the second was inefficient and led to a rapid progression.

A biopsy of normal bronchial mucosa and a tumoral biopsy were carried out and used for mutational analysis by sequencing, CGH, microRNAs analysis and Genome expression analysis.

CGH profile comprised numerous alteration (loss or gain), proving the tumoral status of the biopsy.

Mutational analysis including the genes as listed in Example 1 results in the identification of a mutation G464V in BRAF gene (B-Raf proto-oncogene serine/threonine-protein kinase, GeneID 673). This mutation is postulated to be activating with intrinsic mitotic signalisation. Therefore, a treatment with sorafenib could be contemplated.

Based on Genome Expression analysis, scores have been calculated as detailed in Example 1 and are shown in the following table only for some relevant drugs.

Chemical	Target Genes	Target Genes List	Found Targets	Found Targets List (with fold-changes)	Avg Abs(FC)	Avg Abs(FC) UP-REG	Score
TIPIFARNIB *(Zarnestra)*	4	ABCB1 CYP3A4 CYP3A5 UGT1A1	2 (2+0) (50.0%)	CYP3A4 (17.99) CYP3A5 (23.46)	20.73	20.73	1036
BEVACIZUMAB *(Avastin)*	1	VEGFA	1 (1+0) (100.0%)	VEGFA (2.30, 7.27, 4.15)	4.58	4.58	457
AFLIBERCEPT *(VEGF Trap)*	1	VEGFA	1 (1+0) (100.0%)	VEGFA (2.30, 7.27, 4.15)	4.58	4.58	457
IFOSFAMIDE *(Cyfos, Holoxan, 1000, IFEX, Ifex/Mesnex Kit, Ifosfamide/Mesna Kit, Isoendoxan, Mitoxana, Naxamide)*	11	BCL2, CASP9, CYP2A6, CYP2B6, CYP3A4, CYP3A5, DNMT1, GSTM1, GSTP1, GSTT1, SLC34A1	4 (2+2) (36.4%)	CYP3A4 (17.99) CYP3A5 (23.46) BCL2 (-4.42) CYP2B6 (-13.41)	14.82	20.73	376
ECTEINASCIDIN 743 *(Trabectedin, ET-743, Yondelis)*	4	CCNA2 CCNB1 CCNB2 E2F1	3 (3+0) (75.0%)	CCNA2 (4.55) CCNB1 (2.95) CCNB2 (5.21)	4.24	4.24	317
VINORELBINE *(Navelbine, Navelbine Base)*	7	CASP3 CDKN2A PTGS2 RALBP1 RBM17 SLC29A1 TUBB2A	3 (2+1) (42.9%)	PTGS2 (17.97) SLC29A1 (2.36) TUBB2A (-2.05)	7.46	10.16	290
PEMETREXED *(Alimta)*	10	DHFR FAS FPGS GART GGH RBM17 SLC19A1 TP53 TYMP TYMS	4 (4+0) (40.0%)	DHFR (2.40, 2.26) GART (3.29) SLC19A1 (4.68) TYMS (5.32)	3.91	3.91	156
GEFITINIB *(Iressa, Irressat, Tarceva)*	57	ABCG2 ADORA1 AKT1 AREG AVEN CASP3 CGRRF1 COL4A3BP CORO1C CYP1A2 CYP2C19 CYP2C9 CYP2D6 CYP2F1 CYP3A4 CYP3A5 DUSP3 DUSP9 E2F1 EGF EGFR EPOR EPS15 ERBB2 EREG ESR1 FGF6 GADD45A GADD45G GARS GCLC GNB2 GUCY2D HBEGF IFI6 IGFBP3 IL8 LEPR MAPK1 MAPK3 MLH1 NFKB1 NPTX2 NRL OSMR PARP1 PHLDA2 PLBD1 PTEN QSOX1 RBM7 RPA1 SFN SKI TGFA TNFRSF1B TYMS	18 (11+7) (31.6%)	AREG (6.94) CYP3A4 (17.99) CYP3A5 (23.46) DUSP3 (3.18) EPOR (2.02, 2.11) IFI6 (3.79) NPTX2 (2.77) PHLDA2 (5.98) PLBD1 (8.04) SKI (2.09) TYMS (5.32) CYP2C9 (-2.94) CYP2F1 (-27.19, -7.80) EGF (-2.04) EGFR (-3.99) GADD45G (-3.12) GCLC (-2.59) LEPR (-6.56)	6.69	7.42	143
CISPLATIN *(Abiplatin, Biocisplatinum,*	403	A2M ABCB1 ABCC1 ABCC2 ABCC5 ABHD11 ABHD2 ABR ACSL3 ADAM10 ADFP	137 (63+71+3) (34.0%)	ABHD2 (2.30, 2.58) ADAM10 (2.01) BACH1 (2.09) BAX (2.02) BBC3	5.94	5.17	80

Briplatin, Carboquone, Cis Pt II, Cismeplat, Cisplatine, Cisplatyl, Citoplationo, Lederplatin, Neoplatin, Plastin, Platamine, Platiblastin, Platidiam, Platinex, Platinol, Platinol-AQ, Platinoxan, Randa)	ADORA2B AHCYL1 AKAP12 AKR1B1 AKT1 AKT2 AKT3 ALB ANXA1 APEX1 ARF6 ARHGEF6 ARID5B ARMCX2 ASS1 ASTN1 ATP6V1G2 AXL B3GALT4 BACH1 BAX BBC3 BCAM BCAS4 BCL2 BCL2L1 BCL2L12 BIRC2 BIRC3 BIRC5 BMP7 BTG2 C11ORF68 C11ORF9 C19ORF2 C4ORF29 C7ORF16 CA2 CALCB CASP2 CASP3 CASP8 CASP9 CAT CAV1 CCDC85B CCNE1 CCNG2 CD151 CD55 CDC40 CDH3 CDKL5 CDKN1A CDKN2AIP CELSR2 CES2 CFHR1 CFLAR CIAPIN1 CIDEB CILP CKMT1B CLU CNTF CNTNAP2 COL11A2 COL4A5 CORO1C CREBBP CTAGE4 CTDSP1 CTH CTNNAL1 CYCS CYP2C9 CYP3A4 D6S2723E DAB2 DDIT3 DDR1 DENND4A DEPDC6 DIABLO DKK1 DMBT1 DPYD DRAP1 DST EDN2 EDNRA EGFR ELMO2 EMP3 ENPP2 EP300 ERBB2 ERCC1 ERCC2 ETV4 F8A3 FADD FADS1 FAM129A FAM13A1 FAM46A FANCC FANCG FAS FASLG FASN FEN1 FGF7 FGF9 FGFR2 FGFR3 FKBP2 FMOD FOS FOSL1 FOXC1 FTLL1 GADD45A GALNT7 GARS GAS1 GCLC GCLM GCNT1 GCNT2 GDF15 GLRX2 GMPPA GOLGA8A GOLGA8B GOLSYN GPAA1 GPX3 GSTM1 GSTM2 GSTM3 GSTO1 GSTP1 GSTT1 GUCY1B3 GUK1 HERV-FRD HHEX HIF1A HLA-A HLA-DPA3 HLA-G HNRNPA1 HPCAL1 HSD17B8 HSPB1 HSPE1 HTRA2 ICAM1 ID4 IFI30 IFITM1 IGFBP3 IGFBP5 IL13RA1 IL1B IL1R1 IL4R IL6 ITGA9 ITGAE ITGB4 ITPA JUN KCNA5 KCNK1 KLF2 KLK1 KLK10 KLK11 KLK12 KLK15 KLK2 KLK3 KLK4 KLK5 KLK6 KLK7 KLK8 KLK9 KRT17 KRT19 KRT4 LANCL1 LAPTM4B LASS4 LEPREL1 LIMCH1 LOH11CR2A LTBP1 M6PRBP1 MACF1 MAD2L2 MAGED2 MAL MAP2K6 MCM2 MED1 MED21 MEST MGMT MLL MMP10 MMP15 MMP16 MMP3 MPO MPP2 MRPS27 MT1A MT1F MT2A MT3 MVP	(2.35) BCAM (2.00) BIRC2 (2.06) BIRC3 (4.00) BIRC5 (**12.70**) CCNE1 (3.18) CDKN1A (2.33) CILP (4.39) CNTNAP2 (**20.81**) CYP3A4 (**17.99**) DAB2 (2.33) DKK1 (**51.55**) ETV4 (2.96) FADS1 (2.31, 2.17) FANCC (2.05) FEN1 (2.99, 3.13) FOS (**32.01**) GDF15 (**14.33**) GLRX2 (2.53) GSTM3 (2.04) HHEX (3.59) HPCAL1 (2.96) IFI30 (2.79) JUN (2.41) KLK3 (2.11) LANCL1 (2.60) LAPTM4B (3.54, 3.75) MAP2K6 (2.32) MED21 (2.11) MEST (**8.01**) MMP15 (3.00) MMP16 (3.26) NCOA3 (2.54) NMI (2.13) NMU (2.49) NR4A1 (3.47) NUDT1 (2.01) PDXK (3.48, 2.73, 2.41) PMAIP1 (3.68) PRKCI (2.63, 2.64) PTGS2 (**17.97**) PXDN (3.61, 4.00) RNASET2 (2.15) RNF34 (2.28) SDC2 (3.25) SLC29A1 (2.36) SP1 (2.15, 2.24) SPON1 (2.57) STEAP1 (2.90, 3.34, 2.83) STYX (2.41) TANK (2.02) TERT (2.54) TP53I3 (3.40) TPI1 (2.88) TRAM1 (2.56) TRIB3 (2.05, 2.13) TYMS (**5.32**) UPK1B (2.08) VEGFA (2.30, **7.27**, 4.15)			
		A2M (**-7.98**) ABCC5 (-2.30, -2.38) ANXA1 (-2.14) ARHGEF6 (-2.10) ARID5B (-2.58, -2.20, -2.04) BCL2 (-4.42) BTG2 (-2.33) CA2 (-3.62) CDH3 (-4.12) CELSR2 (-2.39) CES2 (-2.61) CIDEB (-2.19) CLU (-**8.31**) COL4A5 (-2.74) CTNNAL1 (-4.41) CYP2C9 (-2.94) DDR1 (-2.50, -2.46) DMBT1 (-**31.82**) DPYD (-4.02, -3.55) DST (-3.08, -**14.93**) EGFR (-3.99) FAM129A (-**11.54**, -**14.34**) FGF7 (-			

	MYC NAB1 NAIP NCOA3 NDUFS8 NEAT1 NEDD9 NMI NMU NOTCH2 NOTCH4 NR1I2 NR4A1 NTHL1 NUDT1 OPTN P4HA2 PAFAH1B3 PAPPA2 PARD6A PARP1 PAX8 PBX1 PCNA PDIA3 PDXK PFDN5 PFKFB4 PFKP PGK1 PHIP PHLDA1 PLP2 PMAIP1 PMPCA PMS2L11 POLA1 POP4 PPIE PPP1R1B PPP3CB PRKCI PRKDC PRNP PRODH PROS1 PSMB10 PTEN PTGS1 PTGS2 PTK2 PXDN QSOX1 RAB40B RAD21 RALB RALBP1 RASSF1 RB1 RBCK1 RBM9 RBP1 RELA RHOC RING1 RNASET2 RNF34 RPL21 RPL36 RPL6 RPS14 RPS18 RPS4Y2 RPS5 RRAGD RUNX3 RXRB SCRN1 SDC2 SERPINB4 SERPINE2 SFN SH2B3 SH3BGRL3 SLC15A1 SLC20A1 SLC29A1 SLC2A1 SLC31A1 SLC39A7 SLC6A12 SLC7A11 SLC7A8 SLPI SNAP29 SNAPC3 SNRPA SOCS1 SOCS2 SOD2 SOD3 SP1 SP100 SP110 SPINT2 SPON1 SPTLC2 STEAP1 STYX SULT1A1 SULT1A2 SWAP70 SYNJ2 TANK TERT TF TFAP2A TFB1M TGFA TGFB1 TLR2 TMSL6 TNF TNFAIP3 TNFSF10 TNFSF13 TP53 TP53I3 TP73 TPI1 TRADD TRAM1 TRAP1 TRIB3 TRIP13 TSPAN12 TUBA1A TUBB2A TXN TXNDC13 TXNRD1 TYMP TYMS UCP2 UGDH UGT1A1 UGT1A3 UGT1A6 UMPS UPK1B USP14 VAPA VAV3 VEGFA VPS52 WDR46 WFDC2 WWC1 XIAP XPA XRCC1 XRCC5 XRCC6 YARS ZFP36L1 ZFP36L2 ZNF192 ZNRD1		**6.10, -6.45**, -2.30) FGF9 (-2.12) FGFR2 (**-15.60, -8.81**) FGFR3 (-3.11, **-7.43**) FMOD (-2.27) FOXC1 (-3.90, -4.46) GAS1 (-2.36) GCLC (-2.59) GCLM (-3.92) GOLGA8A (-3.47, -2.17) GOLSYN (-3.18) GSTM2 (-3.53) HLA-A (-2.18) ID4 (-2.25) ITGA9 (-2.61) KLK10 (**-5.32, -12.20**) KLK11 (**-51.60**) KLK12 (**-21.92**) KRT19 (-2.14) KRT4 (**-11.12**) LASS4 (-2.24) LIMCH1 (-2.87) LTBP1 (-2.35) MACF1 (-2.02) MAL (**-12.81**) MMP10 (**-62.97**) MT3 (**-13.83**, -2.32) NAIP (-2.67) PBX1 (-3.32, -3.26) PHIP (-2.01) PHLDA1 (-3.12, -2.49) PPP1R1B (-3.30) PTGS1 (-4.87) RRAGD (-2.48) RUNX3 (-4.02) SERPINB4 (**-7.72**) SLC31A1 (-2.78, -2.75, -2.79) SLPI (**-10.90, -12.82**) SOD3 (**-5.07**) SWAP70 (-2.00) TF (-4.25, -4.55) TNFSF10 (-3.01) TUBB2A (-2.05) UCP2 (-2.53) UGT1A6 (**-16.01, -24.90**) VAV3 (**-7.76**) WFDC2 (**-14.33, -12.71**) XPA (-2.62) XRCC1 (-2.80) *BCAS4* (2.21, -2.07) *CYCS* (-2.70, 2.03) *PRNP* (-4.40, 2.43)			

Accordingly, it can be observed that the drugs used in the two therapeutic lines, which did not provide therapeutic afficacy are associated with low scores, namely 80 for cisplatine, 156 for alimta and 143 for Tarceva. Accordingly, the method of the invention should avoid the choice of such treatments.

Since January 2010, Vinorelbine, associated with a score of 290, has been selected for treating the patient. At the beginning, the patient has a very worsened general status. Three months later, the disease was stable, then progressed. In conclusion, although the drug

associated with the best score has not been selected, the selected drug showed efficacy, conferring three months survival.

Example 3

A patient was diagnosized in May 2007 for a primary bronchial adenocarcinoma with bilateral pulmonary metastases and asymptomatic cerebral metastases. A surgical treatment has been carried out in November 2008 and two therapeutic lines have been used, namely thirteen cycles of cisplatin-gemcitabin for the first line and Alimta for the second one. The first line was associated with a partial response followed by a disease progression and the second line was only associated with a disease progression.

A normal bronchial biopsy and a pulmonary metastasis biopsy were carried out and used for mutational analysis by sequencing, CGH, microRNAs analysis and Genome expression analysis.

CGH profile comprised numerous aberrations (loss and gain throughout the genome) demonstrating the tumoral status of the biopsy.

Mutational analysis including the genes as listed in Example 1 did not lead to the identification of any mutation.

Based on Genome Expression analysis, scores have been calculated as detailed in Example 1 and are shown in the following table only for some relevant drugs.

Chemical	Target Genes	Target Genes List	Found Targets	Found Targets List (with fold-changes)	Avg Abs(FC)	Avg Abs(FC) UP-REG	Score
CARBOPLATIN *(Paraplatin, Paraplatin-AQ)*	16	ALB BAX BCL2 BCL2L12 BIRC2 CASP3 CASP9 DCT DPYD ERBB2 FAS PARP1 PCNA PTGS2 RBM17 TYMS	6 (3+3) (37.5%)	ALB (84.71) BAX (2.03) PTGS2 (2.81) CASP3 (-2.56) DPYD (-2.07) FAS (-2.69)	16.14	29.85	559
BEVACIZUMAB *(Avastin)*	1	VEGFA	1 (1+0) (100.0%)	VEGFA (3.18, 3.55, 4.81, 3.82)	3.84	3.84	384
AFLIBERCEPT *(VEGF Trap)*	1	VEGFA	1 (1+0) (100.0%)	VEGFA (3.18, 3.55, 4.81, 3.82)	3.84	3.84	384
CEDIRANIB *(Recentin)*	2	FLT1 FLT4	1 (1+0) (50.0%)	FLT1 (4.36, 5.59)	4.98	4.98	248
AXITINIB	6	FLT1 FLT4 KDR KIT PDGFRA PDGFRB	3 (3+0) (50.0%)	FLT1 (4.36, 5.59) PDGFRA (4.21, 3.56) PDGFRB (5.18)	4.68	4.68	234
CAMPTOTHECIN	57	ABCB1 AGRN ALB ANXA4 BAX BCL2	16	AGRN (2.26, 2.29, 2.11)	8.40	14.18	199

		BID BIRC5 BRCA1 BRCA2 CAB39 CASP2 CASP3 CCNB1 CDK2 CDKN1A CEACAM1 CEBPZ CTSB CYCS DPYD EI24 EP300 EPM2AIP1 FDXR GSTP1 HNRNPC IL1B IL8 JUN LGALS1 MAP2K3 MAP3K5 MAPK9 MAPT MDM2 NCK2 PARP1 PLK3 PPP1R1B PRC1 RAD51 RB1 RBL1 RBL2 SDC1 TAP1 TAX1BP3 THBS1 TNFSF9 TOP1 TP53 TP53I3 TP53TG1 TYMS VEGFA XIAP	(8+8) (28.1%)	ALB (84.71) BAX (2.03) LGALS1 (3.09) PLK3 (2.10) PPP1R1B (5.31) THBS1 (10.46, 9.60) VEGFA (3.18, 3.55, 4.81, 3.82) ABCB1 (-2.74) CASP3 (-2.56) DPYD (-2.07) FDXR (-4.08) GSTP1 (-2.04) MDM2 (-2.46) TAP1 (-2.71) TP53TG1 (-2.28)			
VINORELBINE *(Navelbine, Navelbine Base)*	7	CASP3 CDKN2A PTGS2 RALBP1 RBM17 SLC29A1 TUBB2A	4 (3+1) (57.1%)	CDKN2A (9.83, 6.61) PTGS2 (2.81) TUBB2A (2.88) CASP3 (-2.56)	4.12	4.64	198
GEMCITABINE (DDFC, DFDC, GEO, Gemcin, Gemcitabina, Gemcitabine, HCl, Gemcitabine hydrochloride, Gemcitabinum, Gemtro, Gemzar)	158	AGPAT2 ALDH1A3 ALDH6A1 ANAPC1 ANK3 ANKRD1 ANTXR1 ARF1 ATF3 BAIAP1 BAX BCL2 BCL2L1 BCL2L11 BCL6 BIRC2 BIRC3 BIRC5 BNIP3L C15ORF15 C1ORF144 C4ORF18 CASP3 CCL20 CCND1 CCNG2 CD40 CDA CDH1 CDKN1A CEBPB CKB CLIC4 CMPK COX3 CSRP2 CTHRC1 CXCL1 CXCL2 CXCL3 CYP24A1 DDIT4 DHX9 DLG2 DNCH1 DPYD EDN2 EGFR EGR1 ETV1 EVI2B FBXO25 FGG FOSL2 FXYD3 GAL3ST1 GAS1 GLRX GPC3 GTF2A1 HDAC9 HIF1A HIST1H4B HIST1H4C HOXB2 HSPA1L HSPA5 IFIT1 IL6 INSIG1 IQGAP1 IRAK2 IRF3 ITSN2 JAM3 KCTD12 KLF8 KRT8 LARP5 LIFR LRRC28 LYZ MAF MAGEA10 MAGEC1 MAP17 MARCKS MARS MDM2 MGMT MXI1 MYB NCBP1 NEDD9 NEU1 NFKB2 NFKBIE NNMT NPEPPS NR4A3 NRG1 NRP1 P2RY5 PAQR8 PARP1 PCSK9 PDPK1 PJA2 PLAU PPFIA4 PPP1R15A PSAT1 PTEN PTGS1 PTPN11 RAB8A RBM17 RELA RGS2 RNF149 RPL37 RRAGD RRM1 SAT SCD SLC25A29 SLC29A1 SLC2A14 SLC2A3 SLC43A3 SLITRK2 SPP1 SYNCRIP TCOF1 TERT TGFB2 TNF TNFAIP3 TNFRSF11B TP53 TP53BP1 TP53INP1 TRAF1 TUBE1 TYMP TYMS TYRP1 UBE2C UGGT2 VEGFA VGF VLDLR WBP5 WNT5A XIAP ZNF274 ZNF449 ZNF521	48 (31+17) (30.4%)	ANTXR1 (2.23, 2.64, 3.53) BAX (2.03) CLIC4 (2.63, 2.54, 2.54) CTHRC1 (19.05) DLG2 (3.80) ETV1 (3.09, 3.19) GAL3ST1 (5.88) GAS1 (2.17) GPC3 (3.00) HOXB2 (2.95, 2.38) IFIT1 (2.11) IL6 (2.67) JAM3 (2.13, 2.01) KLF8 (3.81) KRT8 (2.56, 2.55) MAF (2.66, 2.91) NEDD9 (3.66) NEU1 (2.80) NNMT (3.15) NRP1 (2.03, 3.00, 2.60) PLAU (9.25) RGS2 (3.75) SCD (3.76, 3.04, 3.90) SLC2A3 (4.22, 7.94) SPP1 (70.93) TNFRSF11B (12.11, 8.17) TYRP1 (13.30) VEGFA (3.18, 3.55, 4.81, 3.82) WBP5 (2.13) ZNF274 (3.73) ZNF521 (2.79) ANK3 (-3.59, -3.38, -3.62) BIRC3 (-2.27) CASP3 (-2.56) CCL20 (-10.90) CD40 (-2.36) CXCL1 (-47.43) CXCL2 (-2.14, -5.83) CXCL3 (-4.04) CYP24A1 (-2.10) DPYD (-2.07) FXYD3 (-2.79) HDAC9 (-4.09) LYZ (-7.83) MDM2 (-2.46) MGMT (-2.34) MYB (-8.21) NRG1 (-2.47, -3.36)	6.60	6.60	129
CISPLATIN (Abiplatin, Biocisplatinum, Briplatin, Carboquone, Cis Pt II, Cismaplat,	403	A2M ABCB1 ABCC1 ABCC2 ABCC5 ABHD11 ABHD2 ABR ACSL3 ADAM10 ADFP ADORA2B AHCYL1 AKAP12 AKR1B1 AKT1 AKT2 AKT3 ALB ANXA1 APEX1 ARF6 ARHGEF6 ARID5B ARMCX2 ASS1 ASTN1 ATP6V1G2 AXL	112 (68+43+1) (27.8%)	A2M (2.45) ABCC2 (4.03, 3.37) AKAP12 (2.40) AKT3 (3.10) ALB (84.71) BAX (2.03) CA2 (2.50) CCNE1 (3.72) CILP (3.81) COL11A2 (21.07) DAB2	5.94	4.75	80

Cisplatine, Cisplatyl, Citoplationo, Lederplatin, Neoplatin, Plastin, Platamine, Platiblastin, Platidiam, Platinex, Platinol, Platinol-AQ, Platinoxan, Randa)	B3GALT4 BACH1 BAX BBC3 BCAM BCAS4 BCL2 BCL2L1 BCL2L12 BIRC2 BIRC3 BIRC5 BMP7 BTG2 C11ORF68 C11ORF9 C19ORF2 C4ORF29 C7ORF16 CA2 CALCB CASP2 CASP3 CASP8 CASP9 CAT CAV1 CCDC85B CCNE1 CCNG2 CD151 CD55 CDC40 CDH3 CDKL5 CDKN1A CDKN2AIP CELSR2 CES2 CFHR1 CFLAR CIAPIN1 CIDEB CILP CKMT1B CLU CNTF CNTNAP2 COL11A2 COL4A5 CORO1C CREBBP CTAGE4 CTDSP1 CTH CTNNAL1 CYCS CYP2C9 CYP3A4 D6S2723E DAB2 DDIT3 DDR1 DENND4A DEPDC6 DIABLO DKK1 DMBT1 DPYD DRAP1 DST EDN2 EDNRA EGFR ELMO2 EMP3 ENPP2 EP300 ERBB2 ERCC1 ERCC2 ETV4 F8A3 FADD FADS1 FAM129A FAM13A1 FAM46A FANCC FANCG FAS FASLG FASN FEN1 FGF7 FGF9 FGFR2 FGFR3 FKBP2 FMOD FOS FOSL1 FOXC1 FTLL1 GADD45A GALNT7 GARS GAS1 GCLC GCLM GCNT1 GCNT2 GDF15 GLRX2 GMPPA GOLGA8A GOLGA8B GOLSYN GPAA1 GPX3 GSTM1 GSTM2 GSTM3 GSTO1 GSTP1 GSTT1 GUCY1B3 GUK1 HERV-FRD HHEX HIF1A HLA-A HLA-DPA3 HLA-G HNRNPA1 HPCAL1 HSD17B8 HSPB1 HSPE1 HTRA2 ICAM1 ID4 IFI30 IFITM1 IGFBP3 IGFBP5 IL13RA1 IL1B IL1R1 IL4R IL6 ITGA9 ITGAE ITGB4 ITPA JUN KCNA5 KCNK1 KLF2 KLK1 KLK10 KLK11 KLK12 KLK15 KLK2 KLK3 KLK4 KLK5 KLK6 KLK7 KLK8 KLK9 KRT17 KRT19 KRT4 LANCL1 LAPTM4B LASS4 LEPREL1 LIMCH1 LOH11CR2A LTBP1 M6PRBP1 MACF1 MAD2L2 MAGED2 MAL MAP2K6 MCM2 MED1 MED21 MEST MGMT MLL MMP10 MMP15 MMP16 MMP3 MPO MPP2 MRPS27 MT1A MT1F MT2A MT3 MVP MYC NAB1 NAIP NCOA3 NDUFS8 NEAT1 NEDD9 NMI NMU NOTCH2 NOTCH4 NR1I2 NR4A1 NTHL1 NUDT1 OPTN P4HA2 PAFAH1B3 PAPPA2 PARD6A PARP1 PAX8 PBX1 PCNA PDIA3 PDXK PFDN5 PFKFB4 PFKP PGK1 PHIP PHLDA1 PLP2 PMAIP1 PMPCA PMS2L11 POLA1 POP4 PPIE PPP1R1B PPP3CB PRKCI PRKDC PRNP PRODH PROS1 PSMB10 PTEN PTGS1 PTGS2 PTK2 PXDN QSOX1 RAB40B RAD21 RALB RALBP1 RASSF1 RB1 RBCK1 RBM9 RBP1 RELA RHOC RING1 RNASET2 RNF34 RPL21 RPL36 RPL6 RPS14 RPS18 RPS4Y2 RPS5 RRAGD RUNX3 RXRB		(2.64) DKK1 (6.38) EDNRA (2.53, 2.37) ENPP2 (2.36) ERCC2 (2.03) FADS1 (3.44, 3.92) FANCC (2.22) FASN (2.36) FGF7 (2.19, 3.31, 2.06, 2.66) FMOD (2.38) GARS (2.10) GAS1 (2.17) GCNT1 (2.06) GDF15 (3.10) GPX3 (2.08) GSTM1 (4.71) GSTM3 (5.35, 5.57) GUCY1B3 (2.65) HHEX (2.27) HPCAL1 (2.54) ICAM1 (5.72) ID4 (2.59) IGFBP3 (2.97, 2.56) IGFBP5 (3.91, 2.60, 2.94) IL13RA1 (2.10, 2.42) IL1R1 (2.41, 2.24) IL6 (2.67) ITGA9 (3.20, 4.54) KLK8 (4.87) LIMCH1 (2.71, 2.26) LTBP1 (2.86) MACF1 (3.18, 3.43) MAL (2.83) MEST (5.64) MMP15 (3.05) MMP16 (3.43) NEDD9 (3.66) PAFAH1B3 (2.04) PAX8 (2.17) PFKFB4 (2.76) PPP1R1B (5.31) PRKCI (2.31, 2.39) PRODH (3.77) PTGS2 (2.81) PXDN (10.10, 19.71) SCRN1 (2.76) SDC2 (3.16) SERPINE2 (2.63) SLC39A7 (3.59) SPINT2 (2.47) SPON1 (2.80) STYX (2.12) SWAP70 (2.36) TGFB1 (2.40) TRIB3 (8.75) TUBB2A (2.88) VEGFA (3.18, 3.55, 4.81, 3.82) WWC1 (2.43) ABCB1 (-2.74) ABHD2 (-2.82, -2.33, -2.55) ADORA2B (-4.27) BIRC3 (-2.27) CASP3 (-2.56) CES2 (-2.08) CLU (-4.24) COL4A5 (-3.24) DMBT1 (-34.95) DPYD (-2.07) FAS (-2.69) FGFR2 (-4.25, -4.25) FGFR3 (-2.10, -2.89) FOXC1 (-2.51, -3.13) GCLC (-2.03) GCLM (-3.16, -2.98) GOLSYN (-3.36) GSTP1 (-2.04) HLA-A (-2.16, -2.37) HLA-G (-2.84) KLK10 (-3.75, -5.35) KLK11 (-10.49) KLK3 (-9.01) KRT17 (-3.10) KRT4 (-4.61) MGMT (-2.34) MMP10 (-12.00) MT3 (-			

		SCRN1 SDC2 SERPINB4 SERPINE2 SFN SH2B3 SH3BGRL3 SLC15A1 SLC20A1 SLC29A1 SLC2A1 SLC31A1 SLC39A7 SLC6A12 SLC7A11 SLC7A8 SLPI SNAP29 SNAPC3 SNRPA SOCS1 SOCS2 SOD2 SOD3 SP1 SP100 SP110 SPINT2 SPON1 SPTLC2 STEAP1 STYX SULT1A1 SULT1A2 SWAP70 SYNJ2 TANK TERT TF TFAP2A TFB1M TGFA TGFB1 TLR2 TMSL6 TNF TNFAIP3 TNFSF10 TNFSF13 TP53 TP53I3 TP73 TPI1 TRADD TRAM1 TRAP1 TRIB3 TRIP13 TSPAN12 TUBA1A TUBB2A TXN TXNDC13 TXNRD1 TYMP TYMS UCP2 UGDH UGT1A1 UGT1A3 UGT1A6 UMPS UPK1B USP14 VAPA VAV3 VEGFA VPS52 WDR46 WFDC2 WWC1 XIAP XPA XRCC1 XRCC5 XRCC6 YARS ZFP36L1 ZFP36L2 ZNF192 ZNRD1		8.76) NAB1 (-2.03) NEAT1 (-2.29, -2.02) NMU (-7.07) PMAIP1 (-3.07) PSMB10 (-3.25) SERPINB4 (-71.70) SLC31A1 (-2.06) SLPI (-17.09, -28.09) SOD2 (-2.54) TF (-15.98, -17.72) TNFSF10 (-3.33) UGT1A6 (-8.88, -8.56) UPK1B (-28.60) VAV3 (-4.99, -3.12) WFDC2 (-20.20, -15.05) DST (2.30, 2.14, 2.36, -2.86)			
PEMETREXED (Alimta)	10	DHFR FAS FPGS GART GGH RBM17 SLC19A1 TP53 TYMP TYMS	1 (0+1) (10.0%)	FAS (-2.69)	2.69	0.00	0

First of all, the scores associated with the drugs used in the first and second therapeutic lines are low (Gemcitabin = 129; cisplatine = 80 and Alimta = 0). Those scores are consistent with the observed clinical data.

However, based on this score table, avastin associated with a score of 384 has been selected. The treatment has begun in January 2010 and a major response has been observed after two treatment cycles, as showed with the scanners of Figure 5. This major response validates the present method and the unquestionable benefit for the patient.

Example 4

The patient was 59 years old. He suffered of a non small cell bronchial carcinoma with adrenal metastases. Two therapeutic lines have been used, namely three cycles of cisplatin-Alimta and three cycles of taxotere-cisplatine-avastin. These therapeutic lines were associated with a first step of stabilization and then a step of disease progression.

Normal and tumoral bronchial biopsies were carried out and used for mutational analysis by sequencing, CGH, microRNAs analysis and Genome expression analysis.

CGH profile is shown in Figure 6 and comprises chromosomal aberrations in chromosome 11.

Mutational analysis including the genes as listed in Example 1 did not lead to the identification of any mutation.

Based on Genome Expression analysis, scores have been calculated as detailed in Example 1 and are shown in the following table only for some relevant drugs.

Chemical	Target Genes	Target Genes List	Found Targets	Found Targets List (with fold-changes)	Avg Abs(FC)	Avg Abs(FC) UP-REG	Score
ECTEINASCIDIN 743 *(Trabectedin, ET-743, Yondelis)*	4	CCNA2 CCNB1 CCNB2 E2F1	4 (4+0) (100.0%)	CCNA2 (7.13) CCNB1 (4.52) CCNB2 (4.00) E2F1 (4.85)	5.13	5.13	512
GEMTUZUMAB *(Mylotarg)*	1	CD33	1 (1+0) (100.0%)	CD33 (2.02, 2.63)	2.33	2.33	232
HYDROXYUREA *(Biosupressin, Droxia, Hidrix, Hydrea, Hydreia, Hydura, Hydurea, Litafer, Litalir, Onco-Carbide, Oxyurea, Ureaphil)*	26	BAX C13ORF34 CASP3 CCNA2 CCNB1 CCND1 CCND2 CCND3 CCNE1 CCNG1 CDC25C CDCA8 CDKN1A CKS2 EDN3 FAS KPNA2 MECOM PRC1 PSRC1 RRM1 RRM2 RUNX1 SNCA TP53 UBE2C	11 (10+1) (42.3%)	CCNA2 (7.13) CCNB1 (4.52) CCNE1 (2.56) CDCA8 (4.40) CDKN1A (2.35) KPNA2 (2.00) PRC1 (3.28) PSRC1 (2.71) RRM2 (14.29, 5.77) UBE2C (7.67) BAX (-2.32)	4.45	4.67	179
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DOCETAXEL (Taxotere)	43	ABCB1 ABCC1 ABCC2 BAX BCL2 BCL2L1 BIRC5 BUB1B CASP3 CCNB1 CFLAR CSF2 CYP19A1 CYP1B1 CYP3A4 DPYD ERBB2 F2R GSTP1 HIF1A HRAS IL6 MAD2L1 MAPK1 MAPK3 MDM2 PARP1 PGR POR PTGS2 RAF1 RB1 SKP2 TNF TNFRSF10B TP53 TUBB TUBB1 TYMP TYMS UMPS VEGFA XIAP	15 (12+3) (34.9%)	ABCC1 (2.14) ABCC2 (2.58, 3.19) BIRC5 (8.83) BUB1B (8.66) CCNB1 (4.52) CYP1B1 (2.39) IL6 (2.79) MAD2L1 (2.68) PTGS2 (3.78, 2.77) SKP2 (2.18) TNFRSF10B (2.35) TYMS (3.72) BAX (-2.32) BCL2 (-2.35) VEGFA (-2.35)	3.56	3.87	107
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PEMETREXED (Alimta)	10	DHFR FAS FPGS GART GGH RBM17 SLC19A1 TP53 TYMP TYMS	3 (3+0) (30.0%)	DHFR (2.02, 2.20, 2.69, 3.12) SLC19A1 (2.59) TYMS (3.72)	2.94	2.94	88
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VINORELBINE *(Navelbine, Navelbine Base)*	7	CASP3 CDKN2A PTGS2 RALBP1 RBM17 SLC29A1 TUBB2A	2 (2+0) (28.6%)	CDKN2A (2.42, 2.51) PTGS2 (3.78, 2.77)	2.87	2.87	81
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CISPLATIN (Abiplatin, Biocisplatinum,	403	A2M ABCB1 ABCC1 ABCC2 ABCC5 ABHD11 ABHD2 ABR ACSL3 ADAM10 ADFP ADORA2B AHCYL1 AKAP12 AKR1B1	59 (39+19+1) (14.6%)	ABCC1 (2.14) ABCC2 (2.58, 3.19) BIRC3 (4.02) BIRC5	4.23	5.04	48

Briplatin, Carboquone, Cis Pt II, Cismapiat, Cisplatine, Cispiatyl, Citoplationo, Lederplatin, Neoplatin, Plastin, Platamine, Platiblastin, Platidiam, Platinex, Platinol, Platinol-AQ, Platinoxan, Randa)	AKT1 AKT2 AKT3 ALB ANXA1 APEX1 ARF6 ARHGEF6 ARID5B ARMCX2 ASS1 ASTN1 ATP6V1G2 AXL B3GALT4 BACH1 BAX BBC3 BCAM BCAS4 BCL2 BCL2L1 BCL2L12 BIRC2 BIRC3 BIRC5 BMP7 BTG2 C11ORF68 C11ORF9 C19ORF2 C4ORF29 C7ORF16 CA2 CALCB CASP2 CASP3 CASP8 CASP9 CAT CAV1 CCDC85B CCNE1 CCNG2 CD151 CD55 CDC40 CDH3 CDKL5 CDKN1A CDKN2AIP CELSR2 CES2 CFHR1 CFLAR CIAPIN1 CIDEB CILP CKMT1B CLU CNTF CNTNAP2 COL11A2 COL4A5 CORO1C CREBBP CTAGE4 CTDSP1 CTH CTNNAL1 CYCS CYP2C9 CYP3A4 D6S2723E DAB2 DDIT3 DDR1 DENND4A DEPDC6 DIABLO DKK1 DMBT1 DPYD DRAP1 DST EDN2 EDNRA EGFR ELMO2 EMP3 ENPP2 EP300 ERBB2 ERCC1 ERCC2 ETV4 F8A3 FADD FADS1 FAM129A FAM13A1 FAM46A FANCC FANCG FAS FASLG FASN FEN1 FGF7 FGF9 FGFR2 FGFR3 FKBP2 FMOD FOS FOSL1 FOXC1 FTLL1 GADD45A GALNT7 GARS GAS1 GCLC GCLM GCNT1 GCNT2 GDF15 GLRX2 GMPPA GOLGA8A GOLGA8B GOLSYN GPAA1 GPX3 GSTM1 GSTM2 GSTM3 GSTO1 GSTP1 GSTT1 GUCY1B3 GUK1 HERV-FRD HHEX HIF1A HLA-A HLA-DPA3 HLA-G HNRNPA1 HPCAL1 HSD17B8 HSPB1 HSPE1 HTRA2 ICAM1 ID4 IFI30 IFITM1 IGFBP3 IGFBP5 IL13RA1 IL1B IL1R1 IL4R IL6 ITGA9 ITGAE ITGB4 ITPA JUN KCNA5 KCNK1 KLF2 KLK1 KLK10 KLK11 KLK12 KLK15 KLK2 KLK3 KLK4 KLK5 KLK6 KLK7 KLK8 KLK9 KRT17 KRT19 KRT4 LANCL1 LAPTM4B LASS4 LEPREL1 LIMCH1 LOH11CR2A LTBP1 M6PRBP1 MACF1 MAD2L2 MAGED2 MAL MAP2K6 MCM2 MED1 MED21 MEST MGMT MLL MMP10 MMP15 MMP16 MMP3 MPO MPP2 MRPS27 MT1A MT1F MT2A MT3 MVP MYC NAB1 NAIP NCOA3 NDUFS8 NEAT1 NEDD9 NMI NMU NOTCH2 NOTCH4 NR1I2 NR4A1 NTHL1 NUDT1 OPTN P4HA2 PAFAH1B3 PAPPA2 PARD6A PARP1 PAX8 PBX1 PCNA PDIA3 PDXK PFDN5 PFKFB4 PFKP PGK1 PHIP PHLDA1 PLP2 PMAIP1 PMPCA PMS2L11 POLA1 POP4 PPIE PPP1R1B PPP3CB PRKCI PRKDC PRNP PRODH PROS1 PSMB10 PTEN PTGS1 PTGS2 PTK2 PXDN QSOX1 RAB40B RAD21 RALB RALBP1 RASSF1 RB1 RBCK1 RBM9 RBP1 RELA RHOC RING1 RNASET2 RNF34 RPL21 RPL36 RPL6 RPS14 RPS18 RPS4Y2 RPS5 RRAGD RUNX3 RXRB SCRN1 SDC2 SERPINB4 SERPINE2 SFN SH2B3 SH3BGRL3 SLC15A1 SLC20A1 SLC29A1 SLC2A1 SLC31A1 SLC39A7 SLC6A12 SLC7A11 SLC7A8 SLPI SNAP29 SNAPC3		(8.83) CA2 (2.25) CCNE1 (2.56) CDH3 (2.23) CDKN1A (2.35) CREBBP (2.16) CYP2C9 (2.09) DDIT3 (2.09) DKK1 (14.15) ETV4 (2.22) FADS1 (2.84, 3.87) FEN1 (2.52, 2.70) FGFR3 (2.26, 3.09) ICAM1 (3.90) IGFBP5 (2.04) IL1B (4.60) IL6 (2.79) KRT17 (3.17) MAP2K6 (3.28) MCM2 (3.84) MEST (2.74) MMP10 (70.58) MYC (2.42) PAFAH1B3 (2.10) PHLDA1 (2.20) PTGS2 (3.78, 2.77) PXDN (2.31) SERPINB4 (2.63) SFN (2.66) SLC7A11 (2.22) SOD2 (3.28) SPON1 (2.86) TRIB3 (6.70) TXNRD1 (2.49) TYMS (3.72) UGT1A6 (2.26, 2.11) BAX (-2.32) BBC3 (-2.27) BCAM (-2.07) BCL2 (-2.35) CASP8 (-3.17) CD55 (-4.47) CILP (-2.53) FOS (-2.24) KLK3 (-2.46) KRT4 (-4.87) LEPREL1 (-2.15) LIMCH1 (-2.07) MLL (-2.34) PRNP (-2.27) PTGS1 (-2.24) SLPI (-2.68, -2.32) SOD3 (-2.54) SP100 (-2.51, -2.24) VEGFA (-2.35) DST (-3.26, 3.55)			

		SNRPA SOCS1 SOCS2 SOD2 SOD3 SP1 SP100 SP110 SPINT2 SPON1 SPTLC2 STEAP1 STYX SULT1A1 SULT1A2 SWAP70 SYNJ2 TANK TERT TF TFAP2A TFB1M TGFA TGFB1 TLR2 TMSL6 TNF TNFAIP3 TNFSF10 TNFSF13 TP53 TP53I3 TP73 TPI1 TRADD TRAM1 TRAP1 TRIB3 TRIP13 TSPAN12 TUBA1A TUBB2A TXN TXNDC13 TXNRD1 TYMP TYMS UCP2 UGDH UGT1A1 UGT1A3 UGT1A6 UMPS UPK1B USP14 VAPA VAV3 VEGFA VPS52 WDR46 WFDC2 WWC1 XIAP XPA XRCC1 XRCC5 XRCC6 YARS ZFP36L1 ZFP36L2 ZNF192 ZNRD1					
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BEVACIZUMAB (Avastin)	1	VEGFA	1 (0+1) (100.0%)	VEGFA (-2.35)	2.35	0.00	0

Accordingly, the following scores are associated with the drugs of the first and second therapeutic lines: cisplatine (48), Alimta (88), taxotere (107) and avastin (0). Those scores are consistent with the clinical data.

However, other drugs are associated with better scores, for instance Trabectedin (512), Gemtuzumab (232) and hydroxyuea (179).

Example 5

The patient suffered of a rhabdomyosarcoma with pulmonary metastases, proving that the present method is efficient to predict the therapeutic efficacy in any type of tumors. This is an evolutive metastastic disease derived from a fibromixoid sarcoma of a buttock muscle. This intial tumor has been ressected by curative surgery in 2006. Subsequently, the patient developed pleural mesothelial metastases in 2007. After six cycles of treatment with a combination of Alimta and cisplatine, with a really poor response, the patient was subjected to a pleuralectomy. A novel pulmonary metastatic lesion was then detected with complex location prohibiting any surgery.

Normal muscle biopsy and pulmonary metastasis biopse were carried out and used for mutational analysis by sequencing, CGH and Genome expression analysis.

CGH profile showed an important amplification of chromosome 16. It corresponds to an amplification of the PDGA locus.

Mutational analysis including the genes as listed in Example 1 did not lead to the identification of any mutation.

Based on Genome Expression analysis, scores have been calculated as detailed in Example 1 and are shown in the following table only for some relevant drugs.

Chemical	Target	Target Genes List	Found	Found Targets List (with fold-	Avg	Avg	Score

	Genes		Targets	changes)	Abs(FC)	Abs(FC) UP-REG	
VINORELBINE *(Navelbine, Navelbine Base)*	6	CDKN2A PTGS2 RALBP1 RBM17 SLC29A1 TUBB2A	1 (1+0) (16.7%)	CDKN2A (48.68)	48.68	48.68	811
TEGAFUR *(UFT)*	5	CDA CYP2A6 DPYD TP53 TYMS	1 (1+0) (20.0%)	TYMS (16.61)	16.61	16.61	332
NILOTINIB *(Ketek)*	5	ABL1 BCR KIT PDGFRA PDGFRB	2 (2+0) (40.0%)	BCR (5.91) PDGFRA (11.97, 10.80, 8.13)	8.10	8.10	324

Remarkably, Nilotinib is associated with a high score of 324 and is known to be active on the pathway of PDGFRA and PDGFRB. Accordingly, the inventors studied more precisely the PDGF pathway and obtained the following results.

Primary seq. name	Sequence Description	Fold Change	Intensity 1	Intensity 2	Accession #
PDGFD	Platelet derived growth factor D	18.6	114.8	2142.4	NM_025208
PDGFRA	Platelet derived growth factor receptor, alpha	12.0	2072.6	24849.8	NM_006206
PDGFRA	Platelet derived growth factor receptor, alpha	10.8	819.6	8964.0	AA559881
PDGFRA	Platelet derived growth factor receptor, alpha	8.1	21.3	182.3	BC015186
PDGFA	Platelet derived growth factor alpha	7.7	591.2	4576.5	NM_002607
PDGFRL	Platelet derived growth factor receptor like	4.7	5397.2	25269.9	NM_006207
PDGFRB	Platelet derived growth factor receptor beta	3.2	3327.0	10558.3	NM_002609
PDGFC	Platelet derived growth factor C	1.1	23.1	23.7	NM_016205
PDGFC	Platelet derived growth factor C	-1.6	1028.7	615.7	NM_016205
PDGFB	Platelet derived growth factor beta	-3.7	375.2	101.8	NM_002608

A very significant activation can be observed.

CGH and Gene expression profiles corroborate to designate the PDGF pathway as an important driver of tumorogenesis for this lesion. Indeed, PDGF D is overexpressed 18 fold in tumor versus noram tissue and will activate receptor beta-beta. It is worthwhile to mention that PDGFRB is also overexpressed 3 fold. PDFGA is overexpressed 8 fold and receptor PDGFRA is overexpressed 10 fold.

Taken together, Nilotinib appears a good candidate of targeted therapies because it inhibits both receptors.

The patient is awaiting for regulatory authorization for Nilotinib treatment. His attending physician acknowledged this therapeutic choice.

In conclusion, the studied patients were all in therapeutic failure. For all of them, there was no more therapeutic choice, and their their general status was prohibiting enter into clinical trials. Basen upon written consentment and upon request of oncology doctors, this method was applied. The present method allows the association of low scores for the drugs used in the previous therapeutic lines, illustrating the good correlation between low scores and therapeutic efficiency. Retrospectivelly, experts may envision that use of inefficient drugs

may have been avoided if such strategy would have been applied, saving time for the patient. It is important to note that the studied patients showed quite unique profiles, proving the potency of the concept for personalized medicine. Method can aply to any type of tymors as far as normal cells and tumoral cells of same hystologic type can be compared for a patient. Another advantage is that the method can provide a solution with potential therapeutic benefit for all patients, whereas current methods based on compagnon tests can apply only for limited number of patients which harbour a given abnormality.

TABLE 1

Molecule	RefSeq	Description	Symbol	PMID	Interaction
METHOTREXATE	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	12576456, 15239124	drug efflux
METHOTREXATE	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	15718312	drug efflux
METHOTREXATE	NM_000392	ATP-binding cassette, sub-family C (CFTR/MRP), member 2	ABCC2	11500505, 15864128	drug efflux
METHOTREXATE	NM_001105515;NM_005845	ATP-binding cassette, sub-family C (CFTR/MRP), member 4	ABCC4	15454390	drug efflux
METHOTREXATE	NM_004827	ATP-binding cassette, sub-family G (WHITE), member 2	ABCG2	17032904	drug efflux
METHOTREXATE	NM_000477	albumin	ALB	-	used as drug carrier
METHOTREXATE	NM_001631	alkaline phosphatase, intestinal	ALPI	16598758	mesure drug toxicity
METHOTREXATE	NM_004044	5-aminoimidazole-4-carboxamide ribonucleotide formyltransferase/IMP cyclohydrolase	ATIC	17410198	target
METHOTREXATE	NM_000616	CD4 molecule	CD4	15476228	altered by MTX
METHOTREXATE	NM_001040059;NM_001251	CD68 molecule	CD68	15476228	altered by MTX
METHOTREXATE	NM_001145873;NM_001768;NM_171827	CD8a molecule	CD8A	15476228	altered by MTX
METHOTREXATE	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A4	12065438, 16837568	drug metabolism
METHOTREXATE	NM_000791	dihydrofolate reductase	DHFR	14679136	resistance
METHOTREXATE	NM_012242	dickkopf homolog 1 (Xenopus laevis)	DKK1	17320366	unrelated
METHOTREXATE	NM_000561;NM_146421	glutathione S-transferase mu 1	GSTM1	15713801	hepatotoxicity
METHOTREXATE	NM_000201	intercellular adhesion molecule 1	ICAM1	15476228	altered by MTX
METHOTREXATE	NM_000584	interleukin 8	IL8	15476228	altered by MTX
METHOTREXATE	NM_002422	matrix metallopeptidase 3 (stromelysin 1, progelatinase)	MMP3	15476228	altered by MTX
METHOTREXATE	NM_005957	5,10-methylenetetrahydrofolate reductase (NADPH)	MTHFR	17488658	polymorphisms
METHOTREXATE	NM_000254	5-methyltetrahydrofolate-homocysteine methyltransferase	MTR	16598758	polymorphisms
METHOTREXATE	NM_000662	N-acetyltransferase 1 (arylamine N-acetyltransferase)	NAT1	16003948	target
METHOTREXATE	NM_003889;NM_022002;NM_033013	nuclear receptor subfamily 1, group I, member 2	NR1I2	12065438	

METHOTREXATE	NM_002539	ornithine decarboxylase 1	ODC1	16598758	resistance
METHOTREXATE	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	17286800	apoptosis marker
METHOTREXATE	NM_003981;NM_199413;NM_199414	protein regulator of cytokinesis 1	PRC1	17374387	
METHOTREXATE	NM_000321	retinoblastoma 1	RB1	12972956, 14534726, 14679136	resistance
METHOTREXATE	NM_000450	selectin E	SELE	15476228	altered by MTX
METHOTREXATE	NM_194255	solute carrier family 19 (folate transporter), member 1	SLC19A1	14679136, 16505119, 17034785, 17410198	drug uptake
METHOTREXATE	NM_080669	solute carrier family 46 (folate transporter), member 1	SLC46A1	17475902	drug uptake
METHOTREXATE	NM_001001522;NM_003186	transgelin	TAGLN	17320366	unrelated
METHOTREXATE	NM_003254	TIMP metallopeptidase inhibitor 1	TIMP1	15476228	altered by MTX
METHOTREXATE	NM_001071	thymidylate synthetase	TYMS	15713801, 17410198	resistance
METHOTREXATE	NM_007019;NM_181799;NM_181800;NM_181801;NM_181802;NM_181803	ubiquitin-conjugating enzyme E2C	UBE2C	17374387	
METHOTREXATE	NM_000376;NM_001017535	vitamin D (1,25- dihydroxyvitamin D3) receptor	VDR	15713801	
METHOTREXATE	NM_003882;NM_080838	WNT1 inducible signaling pathway protein 1	WISP1	17320366	unrelated
METHOTREXATE	NM_003392	wingless-type MMTV integration site family, member 5A	WNT5A	17320366	unrelated
PEMETREXED	NM_000791	dihydrofolate reductase	DHFR	-	target
PEMETREXED	NM_001018078;NM_004957	folylpolyglutamate synthase	FPGS	17575230	drug activation
PEMETREXED	NM_000819;NM_001136005;NM_001136006;NM_175085	phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthetase, phosphoribosylaminoimidazole synthetase	GART	-	target
PEMETREXED	NM_003878	gamma-glutamyl hydrolase (conjugase, folylpolygammaglutamyl hydrolase)	GGH	17575230	
PEMETREXED	NM_001145547;NM_032905	RNA binding motif protein 17	RBM17	16061639	resistance
PEMETREXED	NM_194255	solute carrier family 19 (folate transporter), member 1	SLC19A1	16505119	drug uptake
PEMETREXED	NM_001113755;NM_001113756;NM_001953	thymidine phosphorylase	TYMP	17575230	
PEMETREXED	NM_001071	thymidylate synthetase	TYMS	-	resistance
FLUDARABINE	NM_000022	adenosine deaminase	ADA	-	unrelated
FLUDARABINE	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	15059916, 15213310	resistance

FLUDARABINE	NM_001668;NM_178426;NM_178427	aryl hydrocarbon receptor nuclear translocator	ARNT	15213310	
FLUDARABINE	NM_001127240;NM_001127241;NM_001127242;NM_014417	BCL2 binding component 3	BBC3	16439685	
FLUDARABINE	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	-	
FLUDARABINE	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	11675354	
FLUDARABINE	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	11675354	
FLUDARABINE	NM_001237	cyclin A2	CCNA2	15059916	
FLUDARABINE	NM_053056	cyclin D1	CCND1	15059916	altered by F-ara-A
FLUDARABINE	NM_001238;NM_057182	cyclin E1	CCNE1	15059916	
FLUDARABINE	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	16439685,16	
FLUDARABINE	NM_004064	cyclin-dependent kinase inhibitor 1B (p27, Kip1)	CDKN1B	15059916	altered by F-ara-A
FLUDARABINE	NM_018947	cytochrome c, somatic	CYCS	15059916	death pathway
FLUDARABINE	NM_019887;NM_138929	diablo homolog (Drosophila)	DIABLO	15059916	death pathway
FLUDARABINE	-	-	ERK	15059916	resistance
FLUDARABINE	NM_000043;NM_152871;NM_152872;NM_152873;NM_152874;NM_152875;NM_152876;NM_152877	Fas (TNF receptor superfamily, member 6)	FAS	11675354	
FLUDARABINE	NM_004864	growth differentiation factor 15	GDF15	16439677	
FLUDARABINE	NM_001530;NM_181054	hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	HIF1A	15213310	altered by F-ara-A
FLUDARABINE	NM_003493	histone cluster 3, H3	HIST3H3	15059916	unrelated
FLUDARABINE	NM_175054	histone cluster 4, H4	HIST4H4	15059916	unrelated
FLUDARABINE	NM_002755	mitogen-activated protein kinase kinase 1	MAP2K1	15059916	resistance
FLUDARABINE	NM_030662	mitogen-activated protein kinase kinase 2	MAP2K2	15059916	
FLUDARABINE	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	15213310	resistance
FLUDARABINE	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	15213310	resistance

FLUDARABINE	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	15059916	resistance
FLUDARABINE	NM_002592;NM_182649	proliferating cell nuclear antigen	PCNA	16439677	
FLUDARABINE	-	-	PDCD8	15059916	
FLUDARABINE	NM_016937	polymerase (DNA directed), alpha 1, catalytic subunit	POLA1	-	target
FLUDARABINE	NM_001033	ribonucleotide reductase M1	RRM1	-	target
FLUDARABINE	NM_007315;NM_139266	signal transducer and activator of transcription 1, 91kDa	STAT1	-	altered by F-ara-A
FLUDARABINE	NM_003844	tumor necrosis factor receptor superfamily, member 10a	TNFRSF10A	14614459	
FLUDARABINE	NM_003842;NM_147187	tumor necrosis factor receptor superfamily, member 10b	TNFRSF10B	14614459, 18092340	
FLUDARABINE	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	16439677, 17226861, 18092340	
FLUDARABINE	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	15213310	altered by F-ara-A
FLUDARABINE	NM_001167	X-linked inhibitor of apoptosis	XIAP	15059916	altered by F-ara-A
FLUDARABINE	NM_022470;NM_152240	zinc finger, matrin type 3	ZMAT3	16439685	
FLUOROURACIL	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	12576456, 15239124	resistance
FLUOROURACIL	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	12576456	resistance
FLUOROURACIL	NM_032583;NM_033151;NM_145186	ATP-binding cassette, sub-family C (CFTR/MRP), member 11	ABCC11	18310281	
FLUOROURACIL	NM_001023587;NM_005688	ATP-binding cassette, sub-family C (CFTR/MRP), member 5	ABCC5	19077464	resistance
FLUOROURACIL	NM_004827	ATP-binding cassette, sub-family G (WHITE), member 2	ABCG2	12576456	
FLUOROURACIL	NM_001608	acyl-Coenzyme A dehydrogenase, long chain	ACADL	15585135	
FLUOROURACIL	NM_001116	adenylate cyclase 9	ADCY9	19219653	
FLUOROURACIL	NM_001126	adenylosuccinate synthase	ADSS	15585135	
FLUOROURACIL	NM_001130846;NM_001130847;NM_004208;NM_145812;NM_145813	apoptosis-inducing factor, mitochondrion-associated, 1	AIFM1	16168113	death pathway
FLUOROURACIL	NM_001014431;NM_001014432;NM	v-akt murine thymoma viral oncogene homolog 1	AKT1	18794807	

	_005163				
FLUOROURACIL	NM_001144	autocrine motility factor receptor	AMFR	16896004	
FLUOROURACIL	NM_004037;NM_139156;NM_203404	adenosine monophosphate deaminase 2 (isoform L)	AMPD2	19219653	
FLUOROURACIL	NM_000481	aminomethyltransferase	AMT	15585135	
FLUOROURACIL	NM_012098	angiopoietin-like 2	ANGPTL2	17327601	altered by 5FU
FLUOROURACIL	NM_001657	amphiregulin	AREG	15067352	sensitivity
FLUOROURACIL	NM_001024226;NM_001024227;NM_001024228;NM_001658	ADP-ribosylation factor 1	ARF1	18927307	
FLUOROURACIL	NM_001697	ATP synthase, H+ transporting, mitochondrial F1 complex, O subunit	ATP5O	17327601	sensitivity
FLUOROURACIL	NM_000053;NM_001005918	ATPase, Cu++ transporting, beta polypeptide	ATP7B	18593893	
FLUOROURACIL	NM_001188	BCL2-antagonist/killer 1	BAK1	18593893	
FLUOROURACIL	NM_003658	BARX homeobox 2	BARX2	15585135	
FLUOROURACIL	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	11062132, 15986848, 15996812, 16168113, 18834353, 19015929	death pathway
FLUOROURACIL	NM_033028	Bardet-Biedl syndrome 4	BBS4	16896004	
FLUOROURACIL	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	14503796, 15940066, 15996812, 18949393, 19015929, 19084572	resistance
FLUOROURACIL	NM_001040668;NM_138639	BCL2-like 12 (proline rich)	BCL2L12	19015929	
FLUOROURACIL	NM_004051;NM_203314;NM_203315	3-hydroxybutyrate dehydrogenase, type 1	BDH1	15585135	altered by 5FU
FLUOROURACIL	NM_003766	beclin 1, autophagy related	BECN1	16896004	
FLUOROURACIL	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	15067352, 18714155	resistance
FLUOROURACIL	NM_016252	baculoviral IAP repeat-containing 6	BIRC6	18239605	
FLUOROURACIL	NM_004052	BCL2/adenovirus E1B 19kDa interacting protein 3	BNIP3	15067352	sensitivity
FLUOROURACIL	NM_004331	BCL2/adenovirus E1B 19kDa interacting protein 3-like	BNIP3L	15067352	sensitivity
FLUOROURACIL	NM_033030;NM_197970	bol, boule-like (Drosophila)	BOLL	17327601	
FLUOROURACIL	NM_001130914;NM_006806	BTG family, member 3	BTG3	16896004	
FLUOROURACIL	NM_001007793;NM_004725	budding uninhibited by benzimidazoles 3 homolog (yeast)	BUB3	15585135	altered by 5FU
FLUOROURACIL	-	-	C13ORF34	17374387	
FLUOROURACIL	NM_001218;NM_206925	carbonic anhydrase XII	CA12	16896004	

FLUOROURACIL	NM_001024649;NM_001746	calnexin	CANX	18678097	
FLUOROURACIL	NM_032982;NM_032983	caspase 2, apoptosis-related cysteine peptidase	CASP2	14757846	death pathway
FLUOROURACIL	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	12414664, 12414664,18830594, 14503796, 15585135, 16168113, 18608205, 18772588, 19084572	death pathway
FLUOROURACIL	NM_001227;NM_033338;NM_033339;NM_033340	caspase 7, apoptosis-related cysteine peptidase	CASP7	16168113	death pathway
FLUOROURACIL	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	12414664,18830594, 15585135, 16168113	death pathway
FLUOROURACIL	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	12414664, 15996812,12414664,18830594, 16168113, 19015929	death pathway
FLUOROURACIL	NM_001237	cyclin A2	CCNA2	18383818	
FLUOROURACIL	NM_053056	cyclin D1	CCND1	18930000	
FLUOROURACIL	NM_001136017;NM_001136125;NM_001136126;NM_001760	cyclin D3	CCND3	15067352, 18383818	resistance
FLUOROURACIL	NM_001238;NM_057182	cyclin E1	CCNE1	18930000	resistance
FLUOROURACIL	NM_057749	cyclin E2	CCNE2	15067352	
FLUOROURACIL	NM_001761	cyclin F	CCNF	15067352	resistance
FLUOROURACIL	NM_004354	cyclin G2	CCNG2	15067352, 18754885	sensitivity
FLUOROURACIL	NM_001790;NM_022809	cell division cycle 25 homolog C (S. pombe)	CDC25C	19074854	
FLUOROURACIL	NM_018101	cell division cycle associated 8	CDCA8	17374387	
FLUOROURACIL	NM_001798;NM_052827	cyclin-dependent kinase 2	CDK2	18383818	
FLUOROURACIL	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	15067352, 16168113, 18834353	sensitivity
FLUOROURACIL	NM_004064	cyclin-dependent kinase inhibitor 1B (p27, Kip1)	CDKN1B	18930000	
FLUOROURACIL	NM_000076;NM_001122630;NM_001122631	cyclin-dependent kinase inhibitor 1C (p57, Kip2)	CDKN1C	15067352	sensitivity
FLUOROURACIL	NM_001114121;NM_001114122;NM_001274	CHK1 checkpoint homolog (S. pombe)	CHEK1	18698031	
FLUOROURACIL	NM_020313	cytokine induced apoptosis inhibitor 1	CIAPIN1	18389626	
FLUOROURACIL	NM_014430	cell death-inducing DFFA-like effector b	CIDEB	15585135	altered by 5FU
FLUOROURACIL	NM_001827	CDC28 protein kinase regulatory subunit 2	CKS2	17374387	

FLUOROURACIL	NM_004859	clathrin, heavy chain (Hc)	CLTC	18927307	
FLUOROURACIL	NM_001083914;NM_001329;NM_022802	C-terminal binding protein 2	CTBP2	18927307	
FLUOROURACIL	NM_001332	catenin (cadherin-associated protein), delta 2 (neural plakophilin-related arm-repeat protein)	CTNND2	16896004	
FLUOROURACIL	NM_001905	CTP synthase	CTPS	19219653	
FLUOROURACIL	NM_005231;NM_138565	cortactin	CTTN	15585135	altered by 5FU
FLUOROURACIL	NM_000762	cytochrome P450, family 2, subfamily A, polypeptide 6	CYP2A6	11376561	
FLUOROURACIL	NM_001554	cysteine-rich, angiogenic inducer, 61	CYR61	15067352	resistance
FLUOROURACIL	NM_001098424;NM_004087	discs, large homolog 1 (Drosophila)	DLG1	18927307	
FLUOROURACIL	NM_000110	dihydropyrimidine dehydrogenase	DPYD	15239142, 15737843, 15858133, 15930747,18600527, 16761622, 18383874, 18443386, 18443386,18299612, 18986760, 19020767,15655543,18619742,18846242, 19093184, 19104657, 19105824, 19219653	drug metabolism
FLUOROURACIL	NM_000798	dopamine receptor D5	DRD5	17327601	
FLUOROURACIL	NM_012145	deoxythymidylate kinase (thymidylate kinase)	DTYMK	15067352	drug metabolism
FLUOROURACIL	NM_001025248;NM_001025249;NM_001948	deoxyuridine triphosphatase	DUT	19015155	
FLUOROURACIL	NM_001949	E2F transcription factor 3	E2F3	16896004	sensitivity
FLUOROURACIL	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	15723263, 15737843, 15981280, 16096254, 18794807, 19217205	resistance
FLUOROURACIL	NM_001964	early growth response 1	EGR1	18757417	
FLUOROURACIL	NM_014239	eukaryotic translation initiation factor 2B, subunit 2 beta, 39kDa	EIF2B2	15585135	
FLUOROURACIL	-	-	EIF3S3	15585135	
FLUOROURACIL	NM_012155	echinoderm microtubule associated protein like 2	EML2	17327601	
FLUOROURACIL	NM_001126123;NM_017512;NM_202758	enolase superfamily member 1	ENOSF1	18357371	
FLUOROURACIL	NM_001098175;NM_001776	ectonucleoside triphosphate diphosphohydrolase 1	ENTPD1	19219653	
FLUOROURACIL	NM_001005862;NM_004448	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)	ERBB2	15737843, 15940066, 18337622	resistance

FLUOROURACIL	NM_001042599;NM_005235	v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)	ERBB4	16896004	
FLUOROURACIL	NM_001983;NM_202001	excision repair cross-complementing rodent repair deficiency, complementation group 1 (includes overlapping antisense sequence)	ERCC1	15737843, 17401013, 18448328,15213713	resistance
FLUOROURACIL	NM_000400;NM_001130867	excision repair cross-complementing rodent repair deficiency, complementation group 2	ERCC2	15213713, 17401013	
FLUOROURACIL	NM_001034025;NM_006817	endoplasmic reticulum protein 29	ERP29	15585135	
FLUOROURACIL	NM_001001998;NM_002685	exosome component 10	EXOSC 10	18567802	
FLUOROURACIL	NM_001993	coagulation factor III (thromboplastin, tissue factor)	F3	15067352	resistance
FLUOROURACIL	NM_000132;NM_019863	coagulation factor VIII, procoagulant component	F8	17327601	marker microvessels
FLUOROURACIL	NM_004629	Fanconi anemia, complementation group G	FANCG	15067352	resistance
FLUOROURACIL	NM_000043;NM_152871;NM_152872;NM_152873;NM_152874;NM_152875;NM_152876;NM_152877	Fas (TNF receptor superfamily, member 6)	FAS	15034078, 15585135, 19015929	death pathway
FLUOROURACIL	NM_004111	flap structure-specific endonuclease 1	FEN1	15067352	resistance
FLUOROURACIL	NM_002009	fibroblast growth factor 7 (keratinocyte growth factor)	FGF7	18575591, 18708365,15375550	resistance
FLUOROURACIL	NM_000141;NM_001144913;NM_001144914;NM_001144915;NM_001144916;NM_001144917;NM_001144918;NM_001144919;NM_022970	fibroblast growth factor receptor 2	FGFR2	18575591	
FLUOROURACIL	NM_022110	FK506 binding protein like	FKBPL	14503796	
FLUOROURACIL	NM_001455;NM_201559	forkhead box O3	FOXO3	15067352	sensitivity
FLUOROURACIL	NM_001924	growth arrest and DNA-damage-inducible, alpha	GADD45A	15067352, 19003803	sensitivity
FLUOROURACIL	NM_000156;NM_138924	guanidinoacetate N-methyltransferase	GAMT	16896004	
FLUOROURACIL	NM_000819;NM_001136005;NM_001136006;NM_175085	phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthetase, phosphoribosylaminoimidazole synthetase	GART	19219653	
FLUOROURACIL	NM_001145453;NM_005264;NM_145793	GDNF family receptor alpha 1	GFRA1	16896004	
FLUOROURACIL	NM_005269	GLI family zinc finger 1	GLI1	18776995	
FLUOROURACIL	NM_181077	golgi autoantigen, golgin subfamily a, 8A	GOLGA 8A	17327601	
FLUOROURACIL	NM_000852	glutathione S-transferase pi 1	GSTP1	15213713, 15737843	resistance
FLUOROURACIL	NM_000853	glutathione S-transferase theta 1	GSTT1	15585135	

FLUOROURACIL	NM_000857	guanylate cyclase 1, soluble, beta 3	GUCY1B3	19219653	
FLUOROURACIL	NM_005524	hairy and enhancer of split 1, (Drosophila)	HES1	19147571	
FLUOROURACIL	NM_005340	histidine triad nucleotide binding protein 1	HINT1	15585135	
FLUOROURACIL	NM_005320	histone cluster 1, H1d	HIST1H1D	15585135	
FLUOROURACIL	NM_000189	hexokinase 2	HK2	18772588	
FLUOROURACIL	-	-	HNRPC	15585135	
FLUOROURACIL	NM_001540	heat shock 27kDa protein 1	HSPB1	18949417, 19088045	
FLUOROURACIL	NM_001541	heat shock 27kDa protein 2	HSPB2	18757417	
FLUOROURACIL	NM_002176	interferon, beta 1, fibroblast	IFNB1	18608205, 18695887	
FLUOROURACIL	NM_000875	insulin-like growth factor 1 receptor	IGF1R	15499378	
FLUOROURACIL	NM_001552	insulin-like growth factor binding protein 4	IGFBP4	16896004	
FLUOROURACIL	NM_000634	interleukin 8 receptor, alpha	IL8RA	16098254	
FLUOROURACIL	NM_001025242;NM_001025243;NM_001569	interleukin-1 receptor-associated kinase 1	IRAK1	15067352	resistance
FLUOROURACIL	-	-	JMJD2B	16896004	death pathway
FLUOROURACIL	NM_002229	jun B proto-oncogene	JUNB	18678097	
FLUOROURACIL	NM_012289;NM_203500	kelch-like ECH-associated protein 1	KEAP1	18692501	
FLUOROURACIL	NM_015443	KIAA1267	KIAA1267	18927307	
FLUOROURACIL	NM_020853	KIAA1467	KIAA1467	16896004	
FLUOROURACIL	NM_007054	kinesin family member 3A	KIF3A	16896004	
FLUOROURACIL	NM_002266	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)	KPNA2	17374387	
FLUOROURACIL	NM_004985;NM_033360	v-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog	KRAS	15585135	
FLUOROURACIL	NM_006499;NM_201543;NM_201544;NM_201545	lectin, galactoside-binding, soluble, 8	LGALS8	17327601	
FLUOROURACIL	NM_005573	lamin B1	LMNB1	15067352	resistance
FLUOROURACIL	NM_002355	mannose-6-phosphate receptor (cation dependent)	M6PR	15585135	
FLUOROURACIL	NR_002819;NR_002819;NR_002819;NR_002819;NR_002819;NR_002819	metastasis associated lung adenocarcinoma transcript 1 (non-protein coding)	MALAT1	18927307	
FLUOROURACIL	NM_006785;NM_173844	mucosa associated lymphoid tissue lymphoma translocation gene 1	MALT1	15067352	resistance
FLUOROURACIL	NM_002754	mitogen-activated protein kinase 13	MAPK1	15585135	

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FLUOROURACIL	NM_001123066;NM_001123067;NM_005910;NM_016834;NM_016835;NM_016841	microtubule-associated protein tau	MAPT	16896004	
FLUOROURACIL	NM_022132	methylcrotonoyl-Coenzyme A carboxylase 2 (beta)	MCCC2	18927307	
FLUOROURACIL	NM_002393	Mdm4 p53 binding protein homolog (mouse)	MDM4	18678097	
FLUOROURACIL	NM_015335	mediator complex subunit 13-like	MED13L	16896004	
FLUOROURACIL	NM_014791	maternal embryonic leucine zipper kinase	MELK	16896004	
FLUOROURACIL	NM_024042	meteorin, glial cell differentiation regulator	METRN	16896004	
FLUOROURACIL	NM_002417	antigen identified by monoclonal antibody Ki-67	MKI67	15940066	sensitivity
FLUOROURACIL	NM_000249	mutL homolog 1, colon cancer, nonpolyposis type 2 (E. coli)	MLH1	18497967, 18949393	
FLUOROURACIL	NM_001127891;NM_004530	matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)	MMP2	18678097	
FLUOROURACIL	NM_001142418;NM_001142419;NM_001142420;NM_001142421;NM_001142422;NM_001142423;NM_001142424;NM_001142425;NM_001142426;NM_001142427;NM_001142428;NM_001142429;NM_001142430;NM_001142431;NM_001142432;NM_012286	mortality factor 4 like 2	MORF4L2	18593893	
FLUOROURACIL	NM_000251	mutS homolog 2, colon cancer, nonpolyposis type 1 (E. coli)	MSH2	18949393	
FLUOROURACIL	NM_005957	5,10-methylenetetrahydrofolate reductase (NADPH)	MTHFR	18633250, 19203896	
FLUOROURACIL	NM_002467	v-myc myelocytomatosis viral oncogene homolog (avian)	MYC	15585135, 18802399	resistance
FLUOROURACIL	NM_006311	nuclear receptor co-repressor 1	NCOR1	18927307	
FLUOROURACIL	NM_004544	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 10, 42kDa	NDUFA10	15585135	
FLUOROURACIL	NM_001145412;NM_001145413;NM_006164	nuclear factor (erythroid-derived 2)-like 2	NFE2L2	18692501	
FLUOROURACIL	NM_024522	Na+/K+ transporting ATPase interacting 1	NKAIN1	16896004	
FLUOROURACIL	NM_020201	5',3'-nucleotidase, mitochondrial	NT5M	19219653	
FLUOROURACIL	NM_022731	nuclear casein kinase and cyclin-dependent kinase substrate 1	NUCKS1	15585135	

FLUOROURACIL	NM_001079524;NM_001079525;NM_006452	phosphoribosylaminoimidazole carboxylase, phosphoribosylaminoimidazole succinocarboxamide synthetase	PAICS	19219653	
FLUOROURACIL	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	15996812,16525653, 19084572	apoptosis marker
FLUOROURACIL	NM_018908;NM_031501	protocadherin alpha 5	PCDHA5	15585135	
FLUOROURACIL	NM_014891	PDGFA associated protein 1	PDAP1	15585135	
FLUOROURACIL	NM_000926	progesterone receptor	PGR	15940066	
FLUOROURACIL	NM_000944;NM_001130691;NM_001130692	protein phosphatase 3 (formerly 2B), catalytic subunit, alpha isoform	PPP3CA	15585135, 18927307	
FLUOROURACIL	NM_003981;NM_199413;NM_199414	protein regulator of cytokinesis 1	PRC1	17374387	altered by 5FU
FLUOROURACIL	NM_001081640;NM_006904	protein kinase, DNA-activated, catalytic polypeptide	PRKDC	18546291	
FLUOROURACIL	NM_000311;NM_001080121;NM_001080122;NM_001080123;NM_183079	prion protein	PRNP	15386405	unrelated
FLUOROURACIL	-	-	PSCD3	15585135	
FLUOROURACIL	NM_002784	pregnancy specific beta-1-glycoprotein 9	PSG9	17327601	
FLUOROURACIL	NM_001005290;NM_001032290;NM_001032291;NM_032636	proline/serine-rich coiled-coil 1	PSRC1	17374387	unrelated
FLUOROURACIL	NM_000264;NM_001083602;NM_001083603;NM_001083604;NM_001083605;NM_001083606;NM_001083607	patched homolog 1 (Drosophila)	PTCH1	18776995	
FLUOROURACIL	NM_012212	prostaglandin reductase 1	PTGR1	15585135	
FLUOROURACIL	NM_000963	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PTGS2	12414664, 18695918	
FLUOROURACIL	NM_002874	RAD23 homolog B (S. cerevisiae)	RAD23B	15067352	resistance
FLUOROURACIL	NM_005855	receptor (G protein-coupled) activity modifying protein 1	RAMP1	16896004	
FLUOROURACIL	NM_000321	retinoblastoma 1	RB1	18383818, 18678097	
FLUOROURACIL	NM_001135255;NM_001135256;NM_005610	retinoblastoma binding protein 4	RBBP4	18678097	
FLUOROURACIL	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	19003803	
FLUOROURACIL	NM_001128617;NM_031922	RALBP1 associated Eps domain containing 1	REPS1	18927307	

FLUOROURACIL	NM_025126;NM_194271	ring finger protein 34	RNF34	16270526	resistance
FLUOROURACIL	NM_000967;NM_001033853	ribosomal protein L3	RPL3	15585135	
FLUOROURACIL	NM_001034	ribonucleotide reductase M2 polypeptide	RRM2	16896004	target
FLUOROURACIL	NM_001015055;NM_001015056;NM_033046	rhotekin	RTKN	15480428	resistance
FLUOROURACIL	NM_005980	S100 calcium binding protein P	S100P	18636193	
FLUOROURACIL	NM_020974	signal peptide, CUB domain, EGF-like 2	SCUBE2	16896004	
FLUOROURACIL	NM_001136528;NM_001136529;NM_001136530;NM_006216	serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 2	SERPINE2	17327601	unrelated
FLUOROURACIL	NM_006142	stratifin	SFN	15999354	
FLUOROURACIL	NM_000193	sonic hedgehog homolog (Drosophila)	SHH	18776995	
FLUOROURACIL	NM_001078174;NM_001078175;NM_001078176;NM_001078177;NM_004955	solute carrier family 29 (nucleoside transporters), member 1	SLC29A1	18383843, 18992248	
FLUOROURACIL	NM_005631	smoothened homolog (Drosophila)	SMO	18776995	
FLUOROURACIL	NM_003082	small nuclear RNA activating complex, polypeptide 1, 43kDa	SNAPC1	15585135	
FLUOROURACIL	NM_003090	small nuclear ribonucleoprotein polypeptide A'	SNRPA1	18927307	
FLUOROURACIL	NM_003109;NM_138473	Sp1 transcription factor	SP1	18927307	
FLUOROURACIL	NM_005417;NM_198291	v-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)	SRC	18794807	
FLUOROURACIL	NM_003130;NM_198901	sorcin	SRI	18423116	
FLUOROURACIL	NM_006282	serine/threonine kinase 4	STK4	18927307	
FLUOROURACIL	NM_016169	suppressor of fused homolog (Drosophila)	SUFU	18776995	
FLUOROURACIL	NM_030756	transcription factor 7-like 2 (T-cell specific, HMG-box)	TCF7L2	18678097	
FLUOROURACIL	NM_005652	telomeric repeat binding factor 2	TERF2	15585135	
FLUOROURACIL	NM_198253;NM_198255	telomerase reverse transcriptase	TERT	18396642	
FLUOROURACIL	NM_003246	thrombospondin 1	THBS1	18757417	
FLUOROURACIL	NM_018271	threonine synthase-like 2 (S. cerevisiae)	THNSL2	16896004	
FLUOROURACIL	NM_004614	thymidine kinase 2, mitochondrial	TK2	19219653	
FLUOROURACIL	NM_003265	toll-like receptor 3	TLR3	18779317	
FLUOROURACIL	NM_021109	thymosin beta 4, X-linked	TMSB4X	16364925	
FLUOROURACIL	-	-	TMSL8	15067352	

FLUOROURACIL	NM_003842;NM_147187	tumor necrosis factor receptor superfamily, member 10b	TNFRSF10B	17922852	death pathway
FLUOROURACIL	NM_003810	tumor necrosis factor (ligand) superfamily, member 10	TNFSF10	19106633	
FLUOROURACIL	NM_003808;NM_172087;NM_172088	tumor necrosis factor (ligand) superfamily, member 13	TNFSF13	18423122	
FLUOROURACIL	NM_003286	topoisomerase (DNA) I	TOP1	18509181	
FLUOROURACIL	NM_001067	topoisomerase (DNA) II alpha 170kDa	TOP2A	18465341	
FLUOROURACIL	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	15940066, 15999354, 16077963, 16168113, 18498133, 18600534, 18698031, 18779317, 18930000, 19015155,12082016, 19106633	death pathway
FLUOROURACIL	NM_001126240;NM_001126241;NM_001126242;NM_005427	tumor protein p73	TP73	18714155	
FLUOROURACIL	NM_000365;NM_001159287	triosephosphate isomerase 1	TPI1	18309519	
FLUOROURACIL	NM_000367	thiopurine S-methyltransferase	TPMT	18927307	
FLUOROURACIL	NM_006472	thioredoxin interacting protein	TXNIP	18930000	
FLUOROURACIL	NM_001093771;NM_003330;NM_182729;NM_182742;NM_182743	thioredoxin reductase 1	TXNRD1	19219653	
FLUOROURACIL	NM_001113755;NM_001113756;NM_001953	thymidine phosphorylase	TYMP	15655543, 17454858	sensitivity
FLUOROURACIL	NM_001071	thymidylate synthetase	TYMS	15067352, 15213713, 15239142, 15737843, (following)	resistance
(following) 15788669,18794807,19020767,15655543,18633250,18505590,10482907,18607850, 16168113, 17454858, 18425338, 18448328, 18490900,18593893, 18383874, 18490900,19105824, 18505590, 18600534, 18676755, 18722050,19082493,18661526, 18794807, 18986760,18507058, 19074750, 19084572, 19219653,19084572					
FLUOROURACIL	NM_007019;NM_181799;NM_181800;NM_181801;NM_181802;NM_181803	ubiquitin-conjugating enzyme E2C	UBE2C	17374387	
FLUOROURACIL	NM_000463	UDP glucuronosyltransferase 1 family, polypeptide A1	UGT1A1	18797458	
FLUOROURACIL	NM_000373	uridine monophosphate synthetase	UMPS	19020767,19020740, 19082440, 19084572	
FLUOROURACIL	NM_003362;NM_080911	uracil-DNA glycosylase	UNG	18714155	
FLUOROURACIL	NM_003364;NM_181597	uridine phosphorylase 1	UPP1	15067352	sensitivity
FLUOROURACIL	NM_145052	uracil phosphoribosyltransferase (FUR1) homolog (S. cerevisiae)	UPRT	18575323	sensitivity
FLUOROURACIL	NM_004182;NM_153477	ubiquitously-expressed transcript	UXT	15585135	

FLUOROURACIL	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	18494554	
FLUOROURACIL	-	-	WBSCR1	15585135	
FLUOROURACIL	NM_017523;NM_199139	XIAP associated factor 1	XAF1	15843754	sensitivity
FLUOROURACIL	NM_021141	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining)	XRCC5	18546291	
FLUOROURACIL	NM_001469	X-ray repair complementing defective repair in Chinese hamster cells 6	XRCC6	18546291	
FLUOROURACIL	NM_024493	zinc finger with KRAB and SCAN domains 3	ZKSCAN3	18519692	
FLUOROURACIL	NM_001005368;NM_006973	zinc finger protein 32	ZNF32	17327601	
FLUOROURACIL	NM_024762	zinc finger protein 552	ZNF552	16896004	
FLUOROURACIL	NM_144690	zinc finger protein 582	ZNF582	17327601	
FLUOROURACIL	NM_005089	zinc finger (CCCH type), RNA-binding motif and serine/arginine rich 2	ZRSR2	17327601	
CAPECITABINE	NM_001024649;NM_001746	calnexin	CANX	18678097	drug activation
CAPECITABINE	NM_001025194;NM_001025195;NM_001266	carboxylesterase 1 (monocyte/macrophage serine esterase 1)	CES1	15687373	drug activation
CAPECITABINE	NM_003869;NM_198061	carboxylesterase 2 (intestine, liver)	CES2	15687373, 18473752	drug activation
CAPECITABINE	NM_024922	carboxylesterase 3	CES3	15687373	reverse toxicity
CAPECITABINE	NM_000110	dihydropyrimidine dehydrogenase	DPYD	18846242	
CAPECITABINE	NM_002229	jun B proto-oncogene	JUNB	18678097	
CAPECITABINE	NM_002393	Mdm4 p53 binding protein homolog (mouse)	MDM4	18678097	
CAPECITABINE	NM_001127891;NM_004530	matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)	MMP2	18678097	
CAPECITABINE	NM_000321	retinoblastoma 1	RB1	18678097	
CAPECITABINE	NM_001135255;NM_001135256;NM_005610	retinoblastoma binding protein 4	RBBP4	18678097	
CAPECITABINE	NM_030756	transcription factor 7-like 2 (T-cell specific, HMG-box)	TCF7L2	18678097	
CAPECITABINE	NM_001071	thymidylate synthetase	TYMS	-	resistance
GEMCITABINE	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	15770523	death pathway
GEMCITABINE	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	15770523	resistance
GEMCITABINE	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	15770523	death pathway

GEMCITABINE	NM_001785	cytidine deaminase	CDA	18728667	
GEMCITABINE	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	15770523	sensitivity
GEMCITABINE	-	-	CMPK	-	sensitivity
GEMCITABINE	-	cytochrome c oxidase III	COX3	17428446	
GEMCITABINE	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	15770523	altered by DFDC
GEMCITABINE	NM_002613;NM_031268	3-phosphoinositide dependent protein kinase-1	PDPK1	16782806	resistance
GEMCITABINE	NM_001145547;NM_032905	RNA binding motif protein 17	RBM17	16061639	resistance
GEMCITABINE	NM_001033	ribonucleotide reductase M1	RRM1	-	resistance
GEMCITABINE	NM_001078174;NM_001078175;NM_001078176;NM_001078177;NM_004955	*solute carrier family 29 (nucleoside transporters),* member 1	SLC29A1	18383843, 18490900, 18728667,18452103, 18992248, 18992248,18383843	drug uptake
GEMCITABINE	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	12082016	unrelated
GEMCITABINE	NM_001113755;NM_001113756;NM_001953	thymidine phosphorylase	TYMP	18728667	
GEMCITABINE	NM_001071	thymidylate synthetase	TYMS	-	resistance
CYCLOPHOSPHAMIDE	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	12576456	resistance
CYCLOPHOSPHAMIDE	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	12576456	resistance
CYCLOPHOSPHAMIDE	NM_004827	ATP-binding cassette, sub-family G (WHITE), member 2	ABCG2	12576456	resistance
CYCLOPHOSPHAMIDE	NM_001101	actin, beta	ACTB	12167460	
CYCLOPHOSPHAMIDE	NM_000689	aldehyde dehydrogenase 1 family, member A1	ALDH1A1	12513786, 17403535, 17502835, 18496131	
CYCLOPHOSPHAMIDE	NM_000690	aldehyde dehydrogenase 2 family (mitochondrial)	ALDH2	17403535	
CYCLOPHOSPHAMIDE	NM_000691;NM_001135167;NM_001135168	aldehyde dehydrogenase 3 family, memberA1	ALDH3A1	18496131	
CYCLOPHOSPHAMIDE	NM_001629	arachidonate 5-lipoxygenase-activating protein	ALOX5AP	17403535	
CYCLOPHOSPHAMIDE	NM_001144	autocrine motility factor receptor	AMFR	16896004	

CYCLOPHOSPHAMIDE	NM_001146	angiopoietin 1	ANGPT1	17403535	
CYCLOPHOSPHAMIDE	NM_012068	activating transcription factor 5	ATF5	17403535	
CYCLOPHOSPHAMIDE	NM_004323	BCL2-associated athanogene	BAG1	16322899	sensitivity
CYCLOPHOSPHAMIDE	NM_033028	Bardet-Biedl syndrome 4	BBS4	16896004	
CYCLOPHOSPHAMIDE	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	11723234, 14503796, 15940066, 16322899	sensitivity
CYCLOPHOSPHAMIDE	NM_003766	beclin 1, autophagy related	BECN1	16896004	
CYCLOPHOSPHAMIDE	NM_001197	BCL2-interacting killer (apoptosis-inducing)	BIK	17403535	
CYCLOPHOSPHAMIDE	NM_001725	bactericidal/permeability-increasing protein	BPI	17403535	
CYCLOPHOSPHAMIDE	NM_001130914;NM_006806	BTG family, member 3	BTG3	16896004	
CYCLOPHOSPHAMIDE	NM_001007793;NM_004725	budding uninhibited by benzimidazoles 3 homolog (yeast)	BUB3	16322899	sensitivity
CYCLOPHOSPHAMIDE	-	-	C13ORF27	17403535	
CYCLOPHOSPHAMIDE	NM_001218;NM_206925	carbonic anhydrase XII	CA12	16896004	
CYCLOPHOSPHAMIDE	NM_000067	carbonic anhydrase II	CA2	17403535	
CYCLOPHOSPHAMIDE	NM_001223;NM_033292;NM_033293;NM_033294;NM_033295	caspase 1, apoptosis-related cysteine peptidase (interleukin 1, beta, convertase)	CASP1	17403535	
CYCLOPHOSPHAMIDE	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	11723234, 14503796, 16675587	death pathway
CYCLOPHOSPHAMIDE	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	11723234	death pathway
CYCLOPHOSPHAMIDE	NM_005893	calicin	CCIN	17475930	
CYCLOPHOSPHAMIDE	NM_005201	chemokine (C-C motif) receptor 8	CCR8	17403535	
CYCLOPHOSPHAMIDE	NM_004064	cyclin-dependent kinase inhibitor 1B (p27, Kip1)	CDKN1B	16322899	sensitivity

CYCLOPHOSPHAMIDE	NM_001865	cytochrome c oxidase subunit VIIa polypeptide 2 (liver)	COX7A2	17403535	
CYCLOPHOSPHAMIDE	NM_003650	cystatin F (leukocystatin)	CST7	17403535	
CYCLOPHOSPHAMIDE	NM_001012329;NM_020248	catenin, beta interacting protein 1	CTNNBIP1	16322899	resistance
CYCLOPHOSPHAMIDE	NM_001332	catenin (cadherin-associated protein), delta 2 (neural plakophilin-related arm-repeat protein)	CTNND2	16896004	
CYCLOPHOSPHAMIDE	NM_004390;NM_148979	cathepsin H	CTSH	17403535	
CYCLOPHOSPHAMIDE	-	-	CTSL	17403535	
CYCLOPHOSPHAMIDE	NM_000104	cytochrome P450, family 1, subfamily B, polypeptide 1	CYP1B1	12167460	
CYCLOPHOSPHAMIDE	-	-	CYP2B1	11933215,16	
CYCLOPHOSPHAMIDE	NM_000767	cytochrome P450, family 2, subfamily B, polypeptide 6	CYP2B6	10919648, 12498089,11389073, 12872138, 15248218, 15769884,18633247,18212249, 16322899, 17502835, 17502835,16183265,12872138, 18496131	drug activation
CYCLOPHOSPHAMIDE	NM_000769	cytochrome P450, family 2, subfamily C, polypeptide 19	CYP2C19	15248218, 16116487, 17502835, 18496131	
CYCLOPHOSPHAMIDE	NM_000771	cytochrome P450, family 2, subfamily C, polypeptide 9	CYP2C9	10991840, 18496131	
CYCLOPHOSPHAMIDE	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A4	17502835, 18496131	
CYCLOPHOSPHAMIDE	NM_000777	cytochrome P450, family 3, subfamily A, polypeptide 5	CYP3A5	17502835, 18496131	
CYCLOPHOSPHAMIDE	NM_006094;NM_024767;NM_182643	deleted in liver cancer 1	DLC1	17403535	
CYCLOPHOSPHAMIDE	NM_005494;NM_058246	DnaJ (Hsp40) homolog, subfamily B, member 6	DNAJB6	17475930	
CYCLOPHOSPHAMIDE	NM_014934;NM_198968	DAZ interacting protein 1	DZIP1	17403535	
CYCLOPHOSPHAMIDE	NM_001949	E2F transcription factor 3	E2F3	16896004	

CYCLOPHOSPHAMIDE	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	15981280	resistance
CYCLOPHOSPHAMIDE	NM_001412	eukaryotic translation initiation factor 1A, X-linked	EIF1AX	16322899	resistance
CYCLOPHOSPHAMIDE	NM_004095	eukaryotic translation initiation factor 4E binding protein 1	EIF4EBP1	16322899	resistance
CYCLOPHOSPHAMIDE	NM_001135554;NM_001135555;NM_001431	erythrocyte membrane protein band 4.1-like 2	EPB41L2	17403535	
CYCLOPHOSPHAMIDE	NM_001005862;NM_004448	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)	ERBB2	15834928, 15940066, 17010609	resistance
CYCLOPHOSPHAMIDE	NM_001042599;NM_005235	v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)	ERBB4	16896004	
CYCLOPHOSPHAMIDE	NM_001136154;NM_001136155;NM_004449;NM_182918	v-ets erythroblastosis virus E26 oncogene homolog (avian)	ERG	17403535	
CYCLOPHOSPHAMIDE	NM_000125;NM_001122740;NM_001122741;NM_001122742	estrogen receptor 1	ESR1	16322899	
CYCLOPHOSPHAMIDE	NM_001040275;NM_001040276;NM_001437	estrogen receptor 2 (ER beta)	ESR2	16322899	
CYCLOPHOSPHAMIDE	NM_001993	coagulation factor III (thromboplastin, tissue factor)	F3	17403535	
CYCLOPHOSPHAMIDE	NM_022110	FK506 binding protein like	FKBPL	14503796	
CYCLOPHOSPHAMIDE	NM_003088	fascin homolog 1, actin-bundling protein (Strongylocentrotus purpuratus)	FSCN1	17403535	
CYCLOPHOSPHAMIDE	NM_002037;NM_153047;NM_153048	FYN oncogene related to SRC, FGR, YES	FYN	17403535	
CYCLOPHOSPHAMIDE	NM_000156;NM_138924	guanidinoacetate N-methyltransferase	GAMT	16896004	
CYCLOPHOSPHAMIDE	NM_001143830;NM_005256;NM_177553	growth arrest-specific 2	GAS2	17475930	
CYCLOPHOSPHAMIDE	NM_001145453;NM_005264;NM_145793	GDNF family receptor alpha 1	GFRA1	16896004	
CYCLOPHOSPHAMIDE	NM_000824	glycine receptor, beta	GLRB	17403535	
CYCLOPHOSPHAMIDE	NM_018841	guanine nucleotide binding protein (G protein), gamma 12	GNG12	17403535	
CYCLOPHOSPHA	NM_001039847;NM_001039848;NM	glutathione peroxidase 4 (phospholipid	GPX4	17475930	

MIDE	_002085	hydroperoxidase)			
CYCLOPHOSPHAMIDE	NM_145740	glutathione S-transferase alpha 1	GSTA1	12516103, 18496131	polymorphisms
CYCLOPHOSPHAMIDE	NM_000852	glutathione S-transferase pi 1	GSTP1	18496131	
CYCLOPHOSPHAMIDE	NM_001520	general transcription factor IIIC, polypeptide 1, alpha 220kDa	GTF3C1	16322899	resistance
CYCLOPHOSPHAMIDE	NM_002140;NM_031262;NM_031263	heterogeneous nuclear ribonucleoprotein K	HNRNPK	17475930	
CYCLOPHOSPHAMIDE	NM_002162	intercellular adhesion molecule 3	ICAM3	17403535	
CYCLOPHOSPHAMIDE	NM_001552	insulin-like growth factor binding protein 4	IGFBP4	16896004	
CYCLOPHOSPHAMIDE	NM_000575	interleukin 1, alpha	IL1A	16636934	
CYCLOPHOSPHAMIDE	NM_001137673;NM_004516;NM_012218;NM_017620;NM_153464	interleukin enhancer binding factor 3, 90kDa	ILF3	16322899	resistance
CYCLOPHOSPHAMIDE	NM_005544	insulin receptor substrate 1	IRS1	16322899	sensitivity
CYCLOPHOSPHAMIDE	-	-	JMJD2B	16896004	
CYCLOPHOSPHAMIDE	NM_014867	kelch repeat and BTB (POZ) domain containing 11	KBTBD11	17403535	
CYCLOPHOSPHAMIDE	NM_020853	KIAA1467	KIAA1467	16896004	
CYCLOPHOSPHAMIDE	NM_007054	kinesin family member 3A	KIF3A	16896004	
CYCLOPHOSPHAMIDE	NM_002305	lectin, galactoside-binding, soluble, 1	LGALS1	17403535	
CYCLOPHOSPHAMIDE	NM_000240	monoamine oxidase A	MAOA	17403535	
CYCLOPHOSPHAMIDE	NM_001315;NM_139012;NM_139013;NM_139014	mitogen-activated protein kinase 14	MAPK14	16322899	sensitivity
CYCLOPHOSPHAMIDE	NM_001123066;NM_001123067;NM_005910;NM_016834;NM_016835;NM_016841	microtubule-associated protein tau	MAPT	16896004	unrelated
CYCLOPHOSPHAMIDE	NM_002356	myristoylated alanine-rich protein kinase C substrate	MARCKS	17403535	

CYCLOPHOSPHAMIDE	NM_199072	MyoD family inhibitor domain containing	MDFIC	17403535	
CYCLOPHOSPHAMIDE	NM_015335	mediator complex subunit 13-like	MED13L	16896004	
CYCLOPHOSPHAMIDE	NM_014791	maternal embryonic leucine zipper kinase	MELK	16896004	
CYCLOPHOSPHAMIDE	NM_024042	meteorin, glial cell differentiation regulator	METRN	16896004	
CYCLOPHOSPHAMIDE	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	15741301, 17403535	resistance
CYCLOPHOSPHAMIDE	NM_002417	antigen identified by monoclonal antibody Ki-67	MKI67	15940066	
CYCLOPHOSPHAMIDE	NM_001031666;NM_001031809;NM_006138	membrane-spanning 4-domains, subfamily A, member 3 (hematopoietic cell-specific)	MS4A3	17403535	
CYCLOPHOSPHAMIDE	NM_002463	myxovirus (influenza virus) resistance 2 (mouse)	MX2	17403535	
CYCLOPHOSPHAMIDE	NM_004536;NM_022892	NLR family, apoptosis inhibitory protein	NAIP	16322899	BIRC1 - sensitivity
CYCLOPHOSPHAMIDE	-	-	NK4	17403535	
CYCLOPHOSPHAMIDE	NM_024522	Na+/K+ transporting ATPase interacting 1	NKAIN1	16896004	
CYCLOPHOSPHAMIDE	NM_002564;NM_176071;NM_176072	purinergic receptor P2Y, G-protein coupled, 2	P2RY2	17403535	
CYCLOPHOSPHAMIDE	NM_007203;NM_147150	PALM2-AKAP2 readthrough transcript	PALM2-AKAP2	17403535	
CYCLOPHOSPHAMIDE	NM_000926	progesterone receptor	PGR	15940066	
CYCLOPHOSPHAMIDE	NM_003311	pleckstrin homology-like domain, family A, member 2	PHLDA2	17403535	
CYCLOPHOSPHAMIDE	NM_000302	procollagen-lysine 1, 2-oxoglutarate 5-dioxygenase 1	PLOD1	16322899	resistance
CYCLOPHOSPHAMIDE	NM_001084	procollagen-lysine, 2-oxoglutarate 5-dioxygenase 3	PLOD3	16322899	resistance
CYCLOPHOSPHAMIDE	NM_000941	P450 (cytochrome) oxidoreductase	POR	10919648	
CYCLOPHOSPHAMIDE	NM_002777	proteinase 3	PRTN3	17403535	

CYCLOPHOSPHAMIDE	NM_002790	proteasome (prosome, macropain) subunit, alpha type, 5	PSMA5	17475930	
CYCLOPHOSPHAMIDE	NM_005855	receptor (G protein-coupled) activity modifying protein 1	RAMP1	16896004, 17403535	
CYCLOPHOSPHAMIDE	NM_001008710;NM_001008711;NM_001008712;NM_006867	RNA binding protein with multiple splicing	RBPMS	17403535	
CYCLOPHOSPHAMIDE	NM_002934	ribonuclease, RNase A family, 2 (liver, eosinophil-derived neurotoxin)	RNASE2	17403535	
CYCLOPHOSPHAMIDE	NM_006570	Ras-related GTP binding A	RRAGA	17403535	
CYCLOPHOSPHAMIDE	NM_001102669;NM_012250	related RAS viral (r-ras) oncogene homolog 2	RRAS2	17403535	
CYCLOPHOSPHAMIDE	NM_001034	ribonucleotide reductase M2 polypeptide	RRM2	16896004	resistance
CYCLOPHOSPHAMIDE	NM_016434;NM_032957	regulator of telomere elongation helicase 1	RTEL1	17475930	
CYCLOPHOSPHAMIDE	NM_005980	S100 calcium binding protein P	S100P	17403535	
CYCLOPHOSPHAMIDE	NM_020974	signal peptide, CUB domain, EGF-like 2	SCUBE2	16896004	
CYCLOPHOSPHAMIDE	NM_003118	secreted protein, acidic, cysteine-rich (osteonectin)	SPARC	17403535	
CYCLOPHOSPHAMIDE	NM_003132	spermidine synthase	SRM	16322899	resistance
CYCLOPHOSPHAMIDE	NM_021978	suppression of tumorigenicity 14 (colon carcinoma)	ST14	16322899	resistance
CYCLOPHOSPHAMIDE	NM_013233	serine threonine kinase 39 (STE20/SPS1 homolog, yeast)	STK39	16322899	sensitivity
CYCLOPHOSPHAMIDE	NM_018271	threonine synthase-like 2 (S. cerevisiae)	THNSL2	16896004	
CYCLOPHOSPHAMIDE	NM_014220	transmembrane 4 L six family member 1	TM4SF1	17403535	
CYCLOPHOSPHAMIDE	NM_001067	topoisomerase (DNA) II alpha 170kDa	TOP2A	18465341	
CYCLOPHOSPHAMIDE	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	15940066	death pathway

CYCLOPHOSPHAMIDE	NM_024762	zinc finger protein 552	ZNF552	16896004	
IFOSFAMIDE	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	11723234	
IFOSFAMIDE	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	11723234	death pathway
IFOSFAMIDE	NM_000762	cytochrome P450, family 2, subfamily A, polypeptide 6	CYP2A6	12136253	drug activation
IFOSFAMIDE	NM_000767	cytochrome P450, family 2, subfamily B, polypeptide 6	CYP2B6	15875221	drug activation
IFOSFAMIDE	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A4	12136253, 15821045, 15875221	drug activation
IFOSFAMIDE	NM_000777	cytochrome P450, family 3, subfamily A, polypeptide 5	CYP3A5	15821045, 15875221	drug activation
IFOSFAMIDE	NM_001130823;NM_001379	DNA (cytosine-5-)-methyltransferase 1	DNMT1	-	
IFOSFAMIDE	NM_000561;NM_146421	glutathione S-transferase mu 1	GSTM1	12868187	polymorphism / toxicity
IFOSFAMIDE	NM_000852	glutathione S-transferase pi 1	GSTP1	12868187	polymorphism / toxicity
IFOSFAMIDE	NM_000853	glutathione S-transferase theta 1	GSTT1	12868187	polymorphism / toxicity
MELPHALAN	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	11115505	resistance
MELPHALAN	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	16373717	
MELPHALAN	NM_032982;NM_032983	caspase 2, apoptosis-related cysteine peptidase	CASP2	14757846	death pathway
MELPHALAN	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	16951922	death pathway
MELPHALAN	NM_001785	cytidine deaminase	CDA	10830723	resistance
MELPHALAN	NM_000136	Fanconi anemia, complementation group C	FANCC	16243825	
MELPHALAN	NM_004629	Fanconi anemia, complementation group G	FANCG	16243825	
MELPHALAN	NM_145740	glutathione S-transferase alpha 1	GSTA1	15779864	unrelated
MELPHALAN	NM_000852	glutathione S-transferase pi 1	GSTP1	15779864,27	unrelated
MELPHALAN	NM_000201	intercellular adhesion molecule 1	ICAM1	16025434	
MELPHALAN	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	16025434	
MELPHALAN	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	16025434	
MELPHALAN	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	16039682	unrelated
MELPHALAN	NM_002413	microsomal glutathione S-transferase 2	MGST2	15779864	resistance
MELPHALAN	NM_006788	ralA binding protein 1	RALBP	-	resistance

			1		
MELPHALAN	NM_000594	tumor necrosis factor (TNF superfamily, member 2)	TNF	16025434	
MELPHALAN	NM_001071	thymidylate synthetase	TYMS	10482907	
CARMUSTINE	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	15239124	resistance
CARMUSTINE	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	12653207	resistance
CARMUSTINE	NM_005159	actin, alpha, cardiac muscle 1	ACTC1	15980968	
CARMUSTINE	NM_001615	actin, gamma 2, smooth muscle, enteric	ACTG2	15980968	
CARMUSTINE	NM_001102;NM_001130004;NM_001130005	actinin, alpha 1	ACTN1	15980968	
CARMUSTINE	NM_003815;NM_207191;NM_207194;NM_207195;NM_207196;NM_207197	ADAM metallopeptidase domain 15	ADAM15	15980968	
CARMUSTINE	NM_005099	ADAM metallopeptidase with thrombospondin type 1 motif, 4	ADAMTS4	15980968	
CARMUSTINE	NM_001099733;NM_001117	adenylate cyclase activating polypeptide 1 (pituitary)	ADCYAP1	15980968	
CARMUSTINE	NM_000679	adrenergic, alpha-1B-, receptor	ADRA1B	15980968	
CARMUSTINE	NM_000029	angiotensinogen (serpin peptidase inhibitor, clade A, member 8)	AGT	11034089	
CARMUSTINE	-	-	AGTRL1	15980968	
CARMUSTINE	NM_001626	v-akt murine thymoma viral oncogene homolog 2	AKT2	15980968	
CARMUSTINE	NM_000031	aminolevulinate, delta-, dehydratase	ALAD	15980968	
CARMUSTINE	NM_001039130;NM_001039131;NM_001141	arachidonate 15-lipoxygenase, type B	ALOX15B	15980968	
CARMUSTINE	NM_000479	anti-Mullerian hormone	AMH	15980968	
CARMUSTINE	NM_005883	adenomatosis polyposis coli 2	APC2	15980968	
CARMUSTINE	NM_001169	aquaporin 8	AQP8	15980968	
CARMUSTINE	-	-	ARGBP2	15980968	
CARMUSTINE	NM_005731;NM_152862	actin related protein 2/3 complex, subunit 2, 34kDa	ARPC2	15980968	
CARMUSTINE	NM_001136215;NM_003976;NM_057090;NM_057091;NM_057160	artemin	ARTN	15980968	
CARMUSTINE	NM_004192	acetylserotonin O-methyltransferase-like	ASMTL	15980968	

CARMUSTINE	NM_152296	ATPase, Na+/K+ transporting, alpha 3 polypeptide	ATP1A3	15980968	
CARMUSTINE	NM_000705	ATPase, H+/K+ exchanging, beta polypeptide	ATP4B	15980968	
CARMUSTINE	NM_001001975;NM_001687	ATP synthase, H+ transporting, mitochondrial F1 complex, delta subunit	ATP5D	15980968	
CARMUSTINE	NM_001694	ATPase, H+ transporting, lysosomal 16kDa, V0 subunit c	ATP6V0C	15980968	
CARMUSTINE	NM_007245;NM_145714;NM_148414;NM_148415;NM_148416	ataxin 2-like	ATXN2L	15980968	
CARMUSTINE	NM_000706	arginine vasopressin receptor 1A	AVPR1A	15980968	
CARMUSTINE	NM_004776	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 5	B4GALT5	15980968	
CARMUSTINE	NM_001144888;NM_006340;NM_017450;NM_017451	BAI1-associated protein 2	BAIAP2	15980968	
CARMUSTINE	NM_003933	BAI1-associated protein 3	BAIAP3	15980968	
CARMUSTINE	NM_003921	B-cell CLL/lymphoma 10	BCL10	15980968	
CARMUSTINE	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	16187019	resistance
CARMUSTINE	NM_001191;NM_138578	BCL2-like 1	BCL2L1	16187019	
CARMUSTINE	NM_003766	beclin 1, autophagy related	BECN1	15980968	
CARMUSTINE	NM_001003398;NM_001714	bicaudal D homolog 1 (Drosophila)	BICD1	15980968	
CARMUSTINE	NM_001715	B lymphoid tyrosine kinase	BLK	15980968	
CARMUSTINE	NM_001719	bone morphogenetic protein 7	BMP7	15980968	
CARMUSTINE	NM_001519;NM_145685	BRF1 homolog, subunit of RNA polymerase III transcription initiation factor IIIB (S. cerevisiae)	BRF1	15980968	
CARMUSTINE	NM_001215	carbonic anhydrase VI	CA6	15980968	
CARMUSTINE	NM_001740;NM_007087;NM_007088	calbindin 2	CALB2	15980968	
CARMUSTINE	NM_002982	chemokine (C-C motif) ligand 2	CCL2	15980968	
CARMUSTINE	NM_001039490;NM_004357;NM_139029;NM_139030	CD151 molecule (Raph blood group)	CD151	15980968	
CARMUSTINE	NM_001040059;NM_001251	CD68 molecule	CD68	15980968	
CARMUSTINE	NM_001783;NM_021601	CD79a molecule, immunoglobulin-associated alpha	CD79A	15980968	
CARMUSTINE	NM_005191	CD80 molecule	CD80	15980968	
CARMUSTINE	NM_001790;NM_022809	cell division cycle 25 homolog C (S. pombe)	CDC25C	15735757	
CARMUSTINE	NM_001260	cyclin-dependent kinase 8	CDK8	15980968	

CARMUSTINE	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	15735757	resistance
CARMUSTINE	NM_005193	caudal type homeobox 4	CDX4	15980968	
CARMUSTINE	NM_001815	carcinoembryonic antigen-related cell adhesion molecule 3	CEACAM3	15980968	
CARMUSTINE	NM_005194	CCAAT/enhancer binding protein (C/EBP), beta	CEBPB	15980968	
CARMUSTINE	NM_001114121;NM_001114122;NM_001274	CHK1 checkpoint homolog (S. pombe)	CHEK1	15735757	
CARMUSTINE	NM_000741	cholinergic receptor, muscarinic 4	CHRM4	15980968	
CARMUSTINE	NM_000749	cholinergic receptor, nicotinic, beta 3	CHRNB3	15980968	
CARMUSTINE	NM_005199	cholinergic receptor, nicotinic, gamma	CHRNG	15980968	
CARMUSTINE	NM_001824	creatine kinase, muscle	CKM	15980968	altered by CNU
CARMUSTINE	NM_001835;NM_007098	clathrin, heavy chain-like 1	CLTCL1	15980968	
CARMUSTINE	NM_003632	contactin associated protein 1	CNTNAP1	15980968	
CARMUSTINE	NM_001851;NM_078485	collagen, type IX, alpha 1	COL9A1	15980968	
CARMUSTINE	NM_005205	cytochrome c oxidase subunit VIa polypeptide 2	COX6A2	15980968	
CARMUSTINE	NM_004378	cellular retinoic acid binding protein 1	CRABP1	15980968	
CARMUSTINE	NM_000755;NM_004003	carnitine acetyltransferase	CRAT	15980968	
CARMUSTINE	NM_001887	crystallin, beta B1	CRYBB1	15980968	
CARMUSTINE	NM_001900	cystatin D	CST5	15980968	
CARMUSTINE	NM_001142544;NM_001330	cardiotrophin 1	CTF1	15980968	
CARMUSTINE	NM_003798	catenin (cadherin-associated protein), alpha-like 1	CTNNAL1	15980968	
CARMUSTINE	NM_000103;NM_031226	cytochrome P450, family 19, subfamily A, polypeptide 1	CYP19A1	15980968	
CARMUSTINE	NM_004762;NM_017456	cytohesin 1	CYTH1	15980968	
CARMUSTINE	NM_003587	DEAH (Asp-Glu-Ala-His) box polypeptide 16	DHX16	15980968	
CARMUSTINE	NM_001374	deoxyribonuclease I-like 2	DNASE1L2	15980968	

CARMUSTINE	NM_004421	dishevelled, dsh homolog 1 (Drosophila)	DVL1	15980968	
CARMUSTINE	NM_001393	extracellular matrix protein 2, female organ and adipocyte specific	ECM2	15980968	
CARMUSTINE	NM_001404	eukaryotic translation elongation factor 1 gamma	EEF1G	15980968	
CARMUSTINE	NM_001414	eukaryotic translation initiation factor 2B, subunit 1 alpha, 26kDa	EIF2B1	15980968	
CARMUSTINE	NM_002212;NM_181466;NM_181468	eukaryotic translation initiation factor 6	EIF6	15980968	
CARMUSTINE	NM_000120;NM_001136018	epoxide hydrolase 1, microsomal (xenobiotic)	EPHX1	15980968	resistance ?
CARMUSTINE	NM_004451	estrogen-related receptor alpha	ESRRA	15980968	
CARMUSTINE	NM_004456;NM_152998	enhancer of zeste homolog 2 (Drosophila)	EZH2	15980968	
CARMUSTINE	NM_000138	fibrillin 1	FBN1	15980968	
CARMUSTINE	NM_000801;NM_054014	FK506 binding protein 1A, 12kDa	FKBP1A	15980968	
CARMUSTINE	NM_001018676;NM_001018677;NM_002027	farnesyltransferase, CAAX box, alpha	FNTA	15980968	
CARMUSTINE	NM_001454	forkhead box J1	FOXJ1	15980968	
CARMUSTINE	NM_002032	ferritin, heavy polypeptide 1	FTH1	15980968	
CARMUSTINE	NM_000146	ferritin, light polypeptide	FTL	15980968	
CARMUSTINE	NM_002037;NM_153047;NM_153048	FYN oncogene related to SRC, FGR, YES	FYN	15980968	
CARMUSTINE	NM_000807;NM_001114175	gamma-aminobutyric acid (GABA) A receptor, alpha 2	GABRA2	15980968	
CARMUSTINE	NM_000811	gamma-aminobutyric acid (GABA) A receptor, alpha 6	GABRA6	15980968	
CARMUSTINE	NM_000156;NM_138924	guanidinoacetate N-methyltransferase	GAMT	15980968	
CARMUSTINE	NM_000805	gastrin	GAST	15980968	
CARMUSTINE	NM_003643	glial cells missing homolog 1 (Drosophila)	GCM1	15980968	
CARMUSTINE	NM_001493	GDP dissociation inhibitor 1	GDI1	15980968	
CARMUSTINE	NM_001115156;NM_001494	GDP dissociation inhibitor 2	GDI2	15980968	
CARMUSTINE	NM_001131019;NM_002055	glial fibrillary acidic protein	GFAP	15980968	
CARMUSTINE	NM_004122;NM_198407	growth hormone secretagogue receptor	GHSR	15980968	
CARMUSTINE	NM_000406;NM_001012763	gonadotropin-releasing hormone receptor	GNRHR	15980968	
CARMUSTINE	NM_004486	golgi autoantigen, golgin subfamily a, 2	GOLGA2	15980968	
CARMUSTINE	NM_002078	golgi autoantigen, golgin subfamily a, 4	GOLGA4	15980968	

CARMUSTINE	NM_000407	glycoprotein Ib (platelet), beta polypeptide	GP1BB	15980968	
CARMUSTINE	NM_005298	G protein-coupled receptor 25	GPR25	15980968	
CARMUSTINE	NM_001506	G protein-coupled receptor 32	GPR32	15980968	
CARMUSTINE	NM_005302	G protein-coupled receptor 37 (endothelin receptor type B-like)	GPR37	15980968	
CARMUSTINE	NM_003608	G protein-coupled receptor 65	GPR65	15980968	
CARMUSTINE	NM_001030002;NM_005310	growth factor receptor-bound protein 7	GRB7	15980968	
CARMUSTINE	NM_002087	granulin	GRN	15980968	
CARMUSTINE	NM_000637	glutathione reductase	GSR	-	target
CARMUSTINE	NM_145740	glutathione S-transferase alpha 1	GSTA1	8395980	unrelated
CARMUSTINE	NM_000561;NM_146421	glutathione S-transferase mu 1	GSTM1	8395980	unrelated
CARMUSTINE	NM_000849	glutathione S-transferase mu 3 (brain)	GSTM3	15247628, 8395980	resistance
CARMUSTINE	NM_000852	glutathione S-transferase pi 1	GSTP1	16899598, 8395980	unrelated
CARMUSTINE	NM_002096	general transcription factor IIF, polypeptide 1, 74kDa	GTF2F 1	15980968	
CARMUSTINE	NM_002105	H2A histone family, member X	H2AFX	15980968	
CARMUSTINE	-	-	HADHS C	15980968	
CARMUSTINE	NM_001040427;NM_005326	hydroxyacylglutathione hydrolase	HAGH	15980968	
CARMUSTINE	NM_005334	host cell factor C1 (VP16-accessory protein)	HCFC1	15980968	
CARMUSTINE	NM_005517	high-mobility group nucleosomal binding domain 2	HMGN2	15980968	
CARMUSTINE	NM_000545	HNF1 homeobox A	HNF1A	15980968	
CARMUSTINE	NM_002141	homeobox A4	HOXA4	15980968	
CARMUSTINE	NM_003259	intercellular adhesion molecule 5, telencephalin	ICAM5	15980968	
CARMUSTINE	NM_000202;NM_006123	iduronate 2-sulfatase	IDS	15980968	
CARMUSTINE	NM_003897	immediate early response 3	IER3	15980968	
CARMUSTINE	NM_001099856;NM_001099857;NM_001145255;NM_003639	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma	IKBKG	15980968	
CARMUSTINE	NM_001567	inositol polyphosphate phosphatase-like 1	INPPL1	15980968	
CARMUSTINE	NM_005542;NM_198336;NM_198337	insulin induced gene 1	INSIG1	15980968	
CARMUSTINE	NM_005543	insulin-like 3 (Leydig cell)	INSL3	15980968	
CARMUSTINE	NM_005544	insulin receptor substrate 1	IRS1	15980968	
CARMUSTINE	NM_005545;NM_201526	immunoglobulin superfamily containing leucine-rich repeat	ISLR	15980968	
CARMUSTINE	NM_002204;NM_005501	integrin, alpha 3 (antigen CD49C, alpha 3 subunit of VLA-3 receptor)	ITGA3	15980968	

CARMUSTINE	NM_002215	inter-alpha (globulin) inhibitor H1	ITIH1	15980968	
CARMUSTINE	NM_000238;NM_172056;NM_172057	potassium voltage-gated channel, subfamily H (eag-related), member 2	KCNH2	15980968	
CARMUSTINE	NM_004984	kinesin family member 5A	KIF5A	15980968	
CARMUSTINE	NM_000422	keratin 17	KRT17	15980968	
CARMUSTINE	NM_002277	keratin 31	KRT31	15980968	
CARMUSTINE	NM_005558	ladinin 1	LAD1	15980968	
CARMUSTINE	NM_002287;NM_021706	leukocyte-associated immunoglobulin-like receptor 1	LAIR1	15980968	
CARMUSTINE	NM_000228;NM_001017402;NM_001127641	laminin, beta 3	LAMB3	15980968	
CARMUSTINE	NM_002316	LIM homeobox transcription factor 1, beta	LMX1B	15980968	
CARMUSTINE	NM_005576	lysyl oxidase-like 1	LOXL1	15980968	
CARMUSTINE	NM_002319	leucine-rich repeats and calponin homology (CH) domain containing 4	LRCH4	15980968	
CARMUSTINE	NM_006152	lymphoid-restricted membrane protein	LRMP	15980968	
CARMUSTINE	NM_001013836;NM_001013837;NM_003550	MAD1 mitotic arrest deficient-like 1 (yeast)	MAD1L1	15980968	
CARMUSTINE	NM_004579	mitogen-activated protein kinase kinase kinase kinase 2	MAP4K2	15980968	
CARMUSTINE	NM_002753;NM_138980;NM_138981;NM_138982	mitogen-activated protein kinase 10	MAPK10	15980968	
CARMUSTINE	NM_000429	methionine adenosyltransferase I, alpha	MAT1A	15980968	
CARMUSTINE	NM_001012333;NM_001012334;NM_002391	midkine (neurite growth-promoting factor 2)	MDK	15980968	
CARMUSTINE	NM_004774	mediator complex subunit 1	MED1	15980968	
CARMUSTINE	NM_001098270;NM_002409	mannosyl (beta-1,4-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase	MGAT3	15980968	
CARMUSTINE	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	15319033, 15833865,16039682,15814657,16899598, 16033832	resistance
CARMUSTINE	NM_002445;NM_138715;NM_138716	macrophage scavenger receptor 1	MSR1	15980968	
CARMUSTINE	NM_002457	mucin 2, oligomeric mucus/gel-forming	MUC2	15980968	
CARMUSTINE	NM_002461	mevalonate (diphospho) decarboxylase	MVD	15980968	
CARMUSTINE	NM_004997	myosin binding protein H	MYBPH	15980968	
CARMUSTINE	NM_002468	myeloid differentiation primary response gene (88)	MYD88	15980968	
CARMUSTINE	NM_002478	myogenic differentiation 1	MYOD1	15980968	

CARMUSTINE	NM_002479	myogenin (myogenic factor 4)	MYOG	15980968	
CARMUSTINE	NM_002494	NADH dehydrogenase (ubiquinone) 1, subcomplex unknown, 1, 6kDa	NDUFC1	15980968	
CARMUSTINE	NM_002509	NK2 homeobox 2	NKX2-2	15980968	
CARMUSTINE	NM_002517	neuronal PAS domain protein 1	NPAS1	15980968	
CARMUSTINE	NM_005286	neuropeptides B/W receptor 2	NPBWR2	15980968	
CARMUSTINE	NM_004558	neurturin	NRTN	15980968	
CARMUSTINE	NM_002542;NM_016819;NM_016820;NM_016821;NM_016826;NM_016827;NM_016828;NM_016829	8-oxoguanine DNA glycosylase	OGG1	11181913	
CARMUSTINE	NM_006189	olfactory marker protein	OMP	15980968	
CARMUSTINE	NM_001018049;NM_002571	progestagen-associated endometrial protein	PAEP	15980968	
CARMUSTINE	NM_003466;NM_013951;NM_013952;NM_013953;NM_013992	paired box 8	PAX8	15980968	
CARMUSTINE	NM_002586	pre-B-cell leukemia homeobox 2	PBX2	15980968	
CARMUSTINE	NM_000281	pterin-4 alpha-carbinolamine dehydratase/dimerization cofactor of hepatocyte nuclear factor 1 alpha	PCBD1	15980968	
CARMUSTINE	NM_002588;NM_032402;NM_032403	protocadherin gamma subfamily C, 3	PCDHGC3	15980968	
CARMUSTINE	NM_002593	procollagen C-endopeptidase enhancer	PCOLCE	15980968	
CARMUSTINE	NM_005017	phosphate cytidylyltransferase 1, choline, alpha	PCYT1A	15980968	
CARMUSTINE	NM_001018053;NM_006212	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2	PFKFB2	15980968	
CARMUSTINE	NM_000289	phosphofructokinase, muscle	PFKM	15980968	
CARMUSTINE	NM_005022	profilin 1	PFN1	15980968	
CARMUSTINE	NM_001114172;NM_003629	phosphoinositide-3-kinase, regulatory subunit 3 (gamma)	PIK3R3	15980968	
CARMUSTINE	NR_023383;NR_023383;NR_023383;NR_023383;NR_023383;NR_023383;NR_023383;NR_023383;NR_023383;NR_023383	postmeiotic segregation increased 2-like 11 pseudogene	PMS2L11	15980968	
CARMUSTINE	NM_002695	polymerase (RNA) II (DNA directed) polypeptide E, 25kDa	POLR2E	15980968	
CARMUSTINE	NM_002707;NM_177983	protein phosphatase 1G (formerly 2C), magnesium-dependent, gamma isoform	PPM1G	15980968	

CARMUSTINE	NM_003981;NM_199413;NM_199414	protein regulator of cytokinesis 1	PRC1	17374387	
CARMUSTINE	NM_000948	prolactin	PRL	15980968	
CARMUSTINE	NM_002762	protamine 2	PRM2	15980968	
CARMUSTINE	NM_001145368;NM_001145369;NM_001145370;NM_001145371;NM_001145372;NM_002829	protein tyrosine phosphatase, non-receptor type 3	PTPN3	15980968	
CARMUSTINE	NM_002864	pregnancy-zone protein	PZP	15980968	
CARMUSTINE	NM_005053	RAD23 homolog A (S. cerevisiae)	RAD23A	15980968	
CARMUSTINE	NM_002875;NM_133487	RAD51 homolog (RecA homolog, E. coli) (S. cerevisiae)	RAD51	15980968	
CARMUSTINE	-	-	RAD9	15980968	
CARMUSTINE	NM_002901	reticulocalbin 1, EF-hand calcium binding domain	RCN1	15980968	
CARMUSTINE	NM_001012720;NM_001012722;NM_002921	retinal G protein coupled receptor	RGR	15980968	
CARMUSTINE	NM_002930	Ras-like without CAAX 2	RIT2	15980968	
CARMUSTINE	NM_002937;NM_194431	ribonuclease, RNase A family, 4	RNASE4	15980968	
CARMUSTINE	NM_002688	septin 5	sept-05	15980968	
CARMUSTINE	NM_005066	splicing factor proline/glutamine-rich (polypyrimidine tract binding protein associated)	SFPQ	15980968	
CARMUSTINE	NM_000023;NM_001135697	sarcoglycan, alpha (50kDa dystrophin-associated glycoprotein)	SGCA	15980968	
CARMUSTINE	NM_005412	serine hydroxymethyltransferase 2 (mitochondrial)	SHMT2	15980968	
CARMUSTINE	NM_000451;NM_006883	short stature homeobox	SHOX	15980968	
CARMUSTINE	-	-	SIAT1	15980968	
CARMUSTINE	NM_003049	solute carrier family 10 (sodium/bile acid cotransporter family), member 1	SLC10A1	15980968	
CARMUSTINE	NM_006517	solute carrier family 16, member 2 (monocarboxylic acid transporter 8)	SLC16A2	15980968	
CARMUSTINE	NM_003459	solute carrier family 30 (zinc transporter), member 3	SLC30A3	15980968	
CARMUSTINE	NM_001043	solute carrier family 6 (neurotransmitter transporter, noradrenalin), member 2	SLC6A2	15980968	
CARMUSTINE	NM_021094;NM_134431	solute carrier organic anion transporter family, member 1A2	SLCO1A2	15980968	

CARMUSTINE	NM_003076;NM_139071	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily d, member 1	SMARCD1	15980968	
CARMUSTINE	NM_003080	sphingomyelin phosphodiesterase 2, neutral membrane (neutral sphingomyelinase)	SMPD2	15980968	
CARMUSTINE	NM_003082	small nuclear RNA activating complex, polypeptide 1, 43kDa	SNAPC1	15980968	
CARMUSTINE	NM_001039697	small nuclear RNA activating complex, polypeptide 3, 50kDa	SNAPC3	15980968	
CARMUSTINE	NM_003087	synuclein, gamma (breast cancer-specific protein 1)	SNCG	15980968	
CARMUSTINE	NM_003092;NM_198220	small nuclear ribonucleoprotein polypeptide B"	SNRPB2	15980968	
CARMUSTINE	NM_003745	suppressor of cytokine signaling 1	SOCS1	17374387	
CARMUSTINE	NM_005876	SPEG complex locus	SPEG	15980968	
CARMUSTINE	NM_001017418	small proline-rich protein 2B	SPRR2B	15980968	
CARMUSTINE	NM_003134	signal recognition particle 14kDa (homologous Alu RNA binding protein)	SRP14	15980968	
CARMUSTINE	NM_003140	sex determining region Y	SRY	15980968	
CARMUSTINE	NM_003034	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 1	ST8SIA1	15980968	
CARMUSTINE	NM_003473	signal transducing adaptor molecule (SH3 domain and ITAM motif) 1	STAM	15980968	
CARMUSTINE	NM_000351	steroid sulfatase (microsomal), isozyme S	STS	15980968	
CARMUSTINE	NM_052874	syntaxin 1B	STX1B	15980968	
CARMUSTINE	NM_001127396;NM_006949	syntaxin binding protein 2	STXBP2	15980968	
CARMUSTINE	NM_003182;NM_013996;NM_013997;NM_013998	tachykinin, precursor 1	TAC1	15980968	
CARMUSTINE	NM_003206;NM_198392	transcription factor 21	TCF21	15980968	
CARMUSTINE	-	-	TEGT	15980968	
CARMUSTINE	NM_198253;NM_198255	telomerase reverse transcriptase	TERT	18021753	
CARMUSTINE	NM_001105192;NM_005078;NM_020908	transducin-like enhancer of split 3 (E(sp1) homolog, Drosophila)	TLE3	15980968	
CARMUSTINE	NM_002546	tumor necrosis factor receptor superfamily, member 11b	TNFRSF11B	15980968	
CARMUSTINE	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_00112	tumor protein p53	TP53	15735757	resistance

	6115;NM_001126116;NM_001126117				
CARMUSTINE	NM_005658	TNF receptor-associated factor 1	TRAF1	15980968	
CARMUSTINE	NM_001025234;NM_001025235;NM_001025236;NM_001025237;NM_001025238;NM_001025239;NM_003271	tetraspanin 4	TSPAN4	15980968	
CARMUSTINE	NM_178014	tubulin, beta	TUBB	15980968	
CARMUSTINE	NM_001070	tubulin, gamma 1	TUBG1	15980968	
CARMUSTINE	NM_001128174;NM_003360	UDP glycosyltransferase 8	UGT8	15980968	
CARMUSTINE	NM_002911	UPF1 regulator of nonsense transcripts homolog (yeast)	UPF1	15980968	
CARMUSTINE	NM_003378	VGF nerve growth factor inducible	VGF	15980968	
CARMUSTINE	NM_001077269;NM_003387	WAS/WASL interacting protein family, member 1	WIPF1	15980968	
CARMUSTINE	NM_003405	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide	YWHAH	15980968	
CARMUSTINE	NM_003443	zinc finger and BTB domain containing 17	ZBTB17	15980968	
CARMUSTINE	NM_001010972;NM_003461	zyxin	ZYX	15980968	
FOTEMUSTINE	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	12970393, 16039682,12970393	resistance
FOTEMUSTINE	NM_001093771;NM_003330;NM_182729;NM_182742;NM_182743	thioredoxin reductase 1	TXNRD1	-	target
CARBOPLATIN	NM_000477	albumin	ALB	-	unrelated
CARBOPLATIN	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	15576332, 15996812	death pathway
CARBOPLATIN	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	15996812, 15996812,17404015,15576332	resistance
CARBOPLATIN	NM_001040668;NM_138639	BCL2-like 12 (proline rich)	BCL2L12	15576332	
CARBOPLATIN	NM_001166	baculoviral IAP repeat-containing 2	BIRC2	10815900	
CARBOPLATIN	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	15576332	death pathway
CARBOPLATIN	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	15996812, 17404015,15576332	death pathway
CARBOPLATIN	NM_001129889;NM_001922	dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)	DCT	15897911	resistance
CARBOPLATIN	NM_000043;NM_152871;NM_152872;NM_152873;NM_152874;NM_152875;NM_152876;NM_152877	Fas (TNF receptor superfamily, member 6)	FAS	15576332	death pathway
CARBOPLATIN	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	15996812	altered by

					platin
CARBOPLATIN	NM_000963	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PTGS2	18089846	
CARBOPLATIN	NM_001145547;NM_032905	RNA binding motif protein 17	RBM17	16061639	resistance
CISPLATIN	NM_000014	alpha-2-macroglobulin	A2M	16773208	
CISPLATIN	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	15650019, 15756446, 15802814, 15990222, 15990222,15650019,15239124	resistance
CISPLATIN	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	15448748, 15756446, 15802814, 18695918	resistance
CISPLATIN	NM_000392	ATP-binding cassette, sub-family C (CFTR/MRP), member 2	ABCC2	15688364,8797578, 15756446, 15985617, 18695918	resistance
CISPLATIN	NM_001023587;NM_005688	ATP-binding cassette, sub-family C (CFTR/MRP), member 5	ABCC5	15882455	resistance
CISPLATIN	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	15981204, 18071906	resistance
CISPLATIN	NM_001626	v-akt murine thymoma viral oncogene homolog 2	AKT2	18071906	resistance
CISPLATIN	NM_005465;NM_181690	v-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)	AKT3	18071906	resistance
CISPLATIN	NM_000477	albumin	ALB	16773208	drug carrier
CISPLATIN	NM_001641;NM_080648;NM_080649	APEX nuclease (multifunctional DNA repair enzyme) 1	APEX1	16373707	resistance
CISPLATIN	NM_001699;NM_021913	AXL receptor tyrosine kinase	AXL	16061661	resistance
CISPLATIN	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	14512787, 14601052, 16009487	death pathway
CISPLATIN	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	14512787, 15917659, 15981204,14601052, 16009487, 17404015	resistance
CISPLATIN	NM_001191;NM_138578	BCL2-like 1	BCL2L1	15917659, 15981204,14601052, 16020667	resistance
CISPLATIN	NM_001040668;NM_138639	BCL2-like 12 (proline rich)	BCL2L12	17404015	sensitivity
CISPLATIN	NM_001166	baculoviral IAP repeat-containing 2	BIRC2	14601052, 14654915,16142363,10815900	resistance
CISPLATIN	NM_001165;NM_182962	baculoviral IAP repeat-containing 3	BIRC3	14654915, 16391810	resistance
CISPLATIN	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	14601052, 15917659,16382892, 15970709,11911975, 15981204, 15981204,16142363,14654915,11	resistance

				911975	
CISPLATIN	NM_032982;NM_032983	caspase 2, apoptosis-related cysteine peptidase	CASP2	14757846	death pathway
CISPLATIN	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	16009487,15863139,14512787, 18071906	death pathway
CISPLATIN	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	16009487, 18071906	death pathway
CISPLATIN	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	16009487, 17404015	death pathway
CISPLATIN	NM_001752	catalase	CAT	10754530, 15930895	altered by platin
CISPLATIN	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	11099651, 12807743, 14601052	resistance
CISPLATIN	NM_001127183;NM_001127184;NM_003879	CASP8 and FADD-like apoptosis regulator	CFLAR	14601052	resistance
CISPLATIN	NM_020313	cytokine induced apoptosis inhibitor 1	CIAPIN1	18389626	
CISPLATIN	NM_001831;NM_203339	clusterin	CLU	15955107	resistance
CISPLATIN	NM_000614	ciliary neurotrophic factor	CNTF	16898872	
CISPLATIN	NM_001079846;NM_004380	CREB binding protein	CREBBP	17498666	
CISPLATIN	NM_018947	cytochrome c, somatic	CYCS	16009487	death pathway
CISPLATIN	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A4	15650019	unrelated
CISPLATIN	NM_019887;NM_138929	diablo homolog (Drosophila)	DIABLO	16391810	death pathway
CISPLATIN	NM_000110	dihydropyrimidine dehydrogenase	DPYD	15737843	resistance
CISPLATIN	NM_001956	endothelin 2	EDN2	16898872	
CISPLATIN	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	15723263, 15737843, 18337622	resistance
CISPLATIN	NM_001429	E1A binding protein p300	EP300	17498666	
CISPLATIN	NM_001005862;NM_004448	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)	ERBB2	15737843, 18337622	resistance
CISPLATIN	NM_001983;NM_202001	excision repair cross-complementing rodent repair deficiency, complementation group 1 (includes overlapping antisense sequence)	ERCC1	15737843	resistance

CISPLATIN	NM_000400;NM_001130867	excision repair cross-complementing rodent repair deficiency, complementation group 2	ERCC2	15882455	resistance
CISPLATIN	NM_001079675;NM_001986	ets variant 4	ETV4	16061661	resistance
CISPLATIN	NM_003824	Fas (TNFRSF6)-associated via death domain	FADD	16009487	death pathway
CISPLATIN	NM_000136	Fanconi anemia, complementation group C	FANCC	16243825	
CISPLATIN	NM_004629	Fanconi anemia, complementation group G	FANCG	16061661, 16243825	resistance
CISPLATIN	NM_000043;NM_152871;NM_152872;NM_152873;NM_152874;NM_152875;NM_152876;NM_152877	Fas (TNF receptor superfamily, member 6)	FAS	16009487, 17305640	death pathway
CISPLATIN	NM_000639	Fas ligand (TNF superfamily, member 6)	FASLG	16009487	death pathway
CISPLATIN	NM_002009	fibroblast growth factor 7 (keratinocyte growth factor)	FGF7	18708365	
CISPLATIN	NM_000142;NM_022965	fibroblast growth factor receptor 3	FGFR3	12066199	
CISPLATIN	NM_005438	FOS-like antigen 1	FOSL1	15756446, 16061661	sensitivity
CISPLATIN	NM_001924	growth arrest and DNA-damage-inducible, alpha	GADD45A	19003803	
CISPLATIN	NM_004864	growth differentiation factor 15	GDF15	16898872	
CISPLATIN	NM_000561;NM_146421	glutathione S-transferase mu 1	GSTM1	12851839	polymorphisms
CISPLATIN	NM_000849	glutathione S-transferase mu 3 (brain)	GSTM3	11081456	polymorphisms
CISPLATIN	NM_000852	glutathione S-transferase pi 1	GSTP1	14678959, 15239142, 15279901, 15737843, 2747627	resistance
CISPLATIN	NM_000853	glutathione S-transferase theta 1	GSTT1	12851839	polymorphisms
CISPLATIN	NM_000858;NM_001159390;NM_001159391	guanylate kinase 1	GUK1	16898872	
CISPLATIN	NM_001530;NM_181054	hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	HIF1A	16532342, 17498666	resistance
CISPLATIN	NM_001540	heat shock 27kDa protein 1	HSPB1	19088045	
CISPLATIN	NM_002157	heat shock 10kDa protein 1 (chaperonin 10)	HSPE1	16394183	resistance
CISPLATIN	NM_013247;NM_145074	HtrA serine peptidase 2	HTRA2	15863139	death pathway
CISPLATIN	NM_003641	interferon induced transmembrane protein 1 (9-27)	IFITM1	16898872	sensitivity
CISPLATIN	NM_000598;NM_001013398	insulin-like growth factor binding protein 3	IGFBP3	16061661	sensitivity
CISPLATIN	NM_000418;NM_001008699	interleukin 4 receptor	IL4R	14678968	
CISPLATIN	NM_002207	integrin, alpha 9	ITGA9	12066199	
CISPLATIN	NM_000213;NM_001005619;NM_001005731	integrin, beta 4	ITGB4	12066199	altered by platin
CISPLATIN	NM_002228	jun oncogene	JUN	16898872	altered by platin
CISPLATIN	NM_002276	keratin 19	KRT19	16061661	sensitivity

CISPLATIN	NM_002272	keratin 4	KRT4	16061661	sensitivity
CISPLATIN	NM_024552	LAG1 homolog, ceramide synthase 4	LASS4	15756446	unrelated
CISPLATIN	NM_004526	minichromosome maintenance complex component 2	MCM2	16061661	resistance
CISPLATIN	NM_004774	mediator complex subunit 1	MED1	15650019	sensitivity
CISPLATIN	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	15015788,2766459,7562019, 15809756,16043385, 16039682, 16043385	resistance
CISPLATIN	NM_002425	matrix metallopeptidase 10 (stromelysin 2)	MMP10	12066199	altered by platin
CISPLATIN	NM_002428	matrix metallopeptidase 15 (membrane-inserted)	MMP15	12066199	altered by platin
CISPLATIN	NM_005941;NM_022564	matrix metallopeptidase 16 (membrane-inserted)	MMP16	12066199	altered by platin
CISPLATIN	NM_015084	mitochondrial ribosomal protein S27	MRPS27	15756446	sensitivity
CISPLATIN	NM_005946	metallothionein 1A	MT1A	12680227	resistance
CISPLATIN	NM_005953	metallothionein 2A	MT2A	12680227, 16394183	resistance
CISPLATIN	NM_005954	metallothionein 3	MT3	16061661, 16898872	resistance
CISPLATIN	NM_005115;NM_017458	major vault protein	MVP	15802814	resistance
CISPLATIN	NM_004536;NM_022892	NLR family, apoptosis inhibitory protein	NAIP	11911975, 11911975,14654915	
CISPLATIN	NM_006534;NM_181659	nuclear receptor coactivator 3	NCOA3	15650019	
CISPLATIN	NM_004557	Notch homolog 4 (Drosophila)	NOTCH4	16898872	
CISPLATIN	NM_003889;NM_022002;NM_033013	nuclear receptor subfamily 1, group I, member 2	NR1I2	15650019	resistance
CISPLATIN	NM_002528	nth endonuclease III-like 1 (E. coli)	NTHL1	16898872	resistance
CISPLATIN	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	16009487,18	altered by platin
CISPLATIN	NM_002592;NM_182649	proliferating cell nuclear antigen	PCNA	11099651	
CISPLATIN	NM_005313	protein disulfide isomerase family A, member 3	PDIA3	15756446	
CISPLATIN	NM_002624;NM_145897	prefoldin subunit 5	PFDN5	16898872	
CISPLATIN	NM_000291	phosphoglycerate kinase 1	PGK1	15756446	sensitivity
CISPLATIN	NM_021127	phorbol-12-myristate-13-acetate-induced protein 1	PMAIP1	17216584	
CISPLATIN	NM_001081640;NM_006904	protein kinase, DNA-activated, catalytic polypeptide	PRKDC	18546291	
CISPLATIN	NM_000311;NM_001080121;NM_001080122;NM_001080123;NM_183079	prion protein	PRNP	15386405	

CISPLATIN	NM_000314	phosphatase and tensin homolog	PTEN	11707646	sensitivity
CISPLATIN	NM_000963	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PTGS2	15517878, 18695918	resistance
CISPLATIN	NM_005607;NM_153831	PTK2 protein tyrosine kinase 2	PTK2	16391810	resistance
CISPLATIN	NM_006788	ralA binding protein 1	RALBP 1	-	resistance
CISPLATIN	NM_000321	retinoblastoma 1	RB1	14704340	
CISPLATIN	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	19003803	
CISPLATIN	NM_001042678;NM_001042679;NM_175744	ras homolog gene family, member C	RHOC	16898872	
CISPLATIN	NM_015414;NM_033643	ribosomal protein L36	RPL36	16394183	resistance
CISPLATIN	NM_001009	ribosomal protein S5	RPS5	16898872	
CISPLATIN	NM_001031680;NM_004350	runt-related transcription factor 3	RUNX3	15756676	
CISPLATIN	NM_006142	stratifin	SFN	15999354	
CISPLATIN	NM_001078174;NM_001078175;NM_001078176;NM_001078177;NM_004955	solute carrier family 29 (nucleoside transporters), member 1	SLC29 A1	18728667	drug import
CISPLATIN	NM_001859	solute carrier family 31 (copper transporters), member 1	SLC31 A1	15985617	
CISPLATIN	NM_003745	suppressor of cytokine signaling 1	SOCS1	17374387	unrelated
CISPLATIN	NM_021102	serine peptidase inhibitor, Kunitz type, 2	SPINT2	15756446	
CISPLATIN	NM_198253;NM_198255	telomerase reverse transcriptase	TERT	18021753	
CISPLATIN	NM_001063	transferrin	TF	16773208	
CISPLATIN	NM_003808;NM_172087;NM_172088	tumor necrosis factor (ligand) superfamily, member 13	TNFSF 13	18423122	
CISPLATIN	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	12807743, 14562046, 15578696, 15990222,12082016,17555331, 15990222,16020667, 15999354, 16077963, 16211088, 17216584, 17498666, 17555331	sensitivity
CISPLATIN	NM_001126240;NM_001126241;NM_001126242;NM_005427	tumor protein p73	TP73	14678968, 17076661	sensitivity
CISPLATIN	NM_000365;NM_001159287	triosephosphate isomerase 1	TPI1	18309519	
CISPLATIN	NM_014294	translocation associated membrane protein 1	TRAM1	16061661	sensitivity
CISPLATIN	NM_016292	TNF receptor-associated protein 1	TRAP1	16061661	resistance
CISPLATIN	NM_006009	tubulin, alpha 1a	TUBA1	16898872	resistance

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CISPLATIN	NM_003329	thioredoxin	TXN	10754530	resistance
CISPLATIN	NM_001071	thymidylate synthetase	TYMS	10482907, 15737843	resistance
CISPLATIN	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	17498666	
CISPLATIN	NM_001167	X-linked inhibitor of apoptosis	XIAP	11911975,16142363,15863139,14654915, 15981204,14601052, 16391810, 16391810,15863139, 18071906	resistance
CISPLATIN	NM_000380	xeroderma pigmentosum, complementation group A	XPA	15882455	
CISPLATIN	NM_006297	X-ray repair complementing defective repair in Chinese hamster cells 1	XRCC1	15882455	
CISPLATIN	NM_021141	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining)	XRCC5	12384553, 18546291	
CISPLATIN	NM_001469	X-ray repair complementing defective repair in Chinese hamster cells 6	XRCC6	18546291	polymorphisms
CISPLATIN	NM_004926	zinc finger protein 36, C3H type-like 1	ZFP36L1	15880358	altered by platin
OXALIPLATIN	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	18790786, 19147571	
OXALIPLATIN	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	16024531	resistance
OXALIPLATIN	NM_001191;NM_138578	BCL2-like 1	BCL2L1	16024531	resistance
OXALIPLATIN	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	16004971, 16004971,16024531, 19147571	altered by oxaliplatin
OXALIPLATIN	NM_001237	cyclin A2	CCNA2	15204521	altered by oxaliplatin
OXALIPLATIN	NM_031966	cyclin B1	CCNB1	15204521	altered by oxaliplatin
OXALIPLATIN	NM_053056	cyclin D1	CCND1	19147571	
OXALIPLATIN	NM_001238;NM_057182	cyclin E1	CCNE1	15204521	altered by oxaliplatin
OXALIPLATIN	NM_001785	cytidine deaminase	CDA	18728667	
OXALIPLATIN	NM_001130829;NM_001786;NM_033379	cell division cycle 2, G1 to S and G2 to M	CDC2	15204521, 16024531	altered by oxaliplatin
OXALIPLATIN	NM_001798;NM_052827	cyclin-dependent kinase 2	CDK2	15204521	altered by oxaliplatin

OXALIPLATIN	NM_004064	cyclin-dependent kinase inhibitor 1B (p27, Kip1)	CDKN1B	15204521	altered by oxaliplatin
OXALIPLATIN	NM_001025248;NM_001025249;NM_001948	deoxyuridine triphosphatase	DUT	19015155	
OXALIPLATIN	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	16098254	polymorphism
OXALIPLATIN	NM_001983;NM_202001	excision repair cross-complementing rodent repair deficiency, complementation group 1 (includes overlapping antisense sequence)	ERCC1	15655543, 17401013, 18448328,15213713	resistance
OXALIPLATIN	NM_000400;NM_001130867	excision repair cross-complementing rodent repair deficiency, complementation group 2	ERCC2	15213713, 15655543, 17401013	
OXALIPLATIN	NM_001160030;NM_001160031;NM_002019	fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor)	FLT1	18790786	
OXALIPLATIN	-	-	FRAP1	19147571	
OXALIPLATIN	NM_000852	glutathione S-transferase pi 1	GSTP1	15213713, 15655543, 17401013	resistance
OXALIPLATIN	NM_005524	hairy and enhancer of split 1, (Drosophila)	HES1	19147571	
OXALIPLATIN	NM_000634	interleukin 8 receptor, alpha	IL8RA	16098254	
OXALIPLATIN	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	18790786	
OXALIPLATIN	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	18790786	
OXALIPLATIN	NM_002467	v-myc myelocytomatosis viral oncogene homolog (avian)	MYC	15204521	sensitivity
OXALIPLATIN	NM_015331	nicastrin	NCSTN	19147571	
OXALIPLATIN	NM_017617	Notch homolog 1, translocation-associated (Drosophila)	NOTCH1	19147571	
OXALIPLATIN	NM_001024628;NM_001024629;NM_003873	neuropilin 1	NRP1	18790786	
OXALIPLATIN	NM_002632	placental growth factor	PGF	18790786	
OXALIPLATIN	NM_000021;NM_007318	presenilin 1	PSEN1	19147571	
OXALIPLATIN	NM_000321	retinoblastoma 1	RB1	15204521	altered by oxaliplatin
OXALIPLATIN	NM_005980	S100 calcium binding protein P	S100P	18636193	
OXALIPLATIN	NM_003109;NM_138473	Sp1 transcription factor	SP1	19015155	
OXALIPLATIN	NM_005417;NM_198291	v-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)	SRC	18790786	
OXALIPLATIN	NM_003286	topoisomerase (DNA) I	TOP1	16509181	

OXALIPLATIN	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	19015155	
OXALIPLATIN	NM_001113755;NM_001113756;NM_001953	thymidine phosphorylase	TYMP	18728667	
OXALIPLATIN	NM_001071	thymidylate synthetase	TYMS	15213713, 18448328, 19074750	resistance
OXALIPLATIN	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	18790786	
OXALIPLATIN	NM_005429	vascular endothelial growth factor C	VEGFC	18790786	
BUSULFAN	NM_145740	glutathione S-transferase alpha 1	GSTA1	10437668, 10570028,8886613, 12429583, 15779864	drug metabolism
BUSULFAN	NM_000561;NM_146421	glutathione S-transferase mu 1	GSTM1	15142875, 8886613	unrelated
BUSULFAN	NM_000852	glutathione S-transferase pi 1	GSTP1	15779864, 8886613	unrelated
BUSULFAN	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	16039682	unrelated
BUSULFAN	NM_002413	microsomal glutathione S-transferase 2	MGST2	15779864	resistance
PROCARBAZINE	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	16033832	
DACARBAZINE	NM_001641;NM_080648;NM_080649	APEX nuclease (multifunctional DNA repair enzyme) 1	APEX1	16373707	resistance
DACARBAZINE	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	15577328	
DACARBAZINE	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	17410615	death pathway
DACARBAZINE	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	17410615	
DACARBAZINE	NM_001775	CD38 molecule	CD38	11583285, 14669796, 16078447	unrelated
DACARBAZINE	NM_001781	CD69 molecule	CD69	14669796, 17973783	unrelated
DACARBAZINE	NM_000499	cytochrome P450, family 1, subfamily A, polypeptide 1	CYP1A1	11751525	drug activation
DACARBAZINE	NM_000761	cytochrome P450, family 1, subfamily A, polypeptide 2	CYP1A2	11751525	drug activation
DACARBAZINE	NM_000799	erythropoietin	EPO	15743794	resistance
DACARBAZINE	NM_024013	interferon, alpha 1	IFNA1	11583285, 16078447	therapy
DACARBAZINE	NM_000605	interferon, alpha 2	IFNA2	14669796, 17973783	therapy
DACARBAZINE	NM_000584	interleukin 8	IL8	12939465,15123733,	altered by

				15026559,12939465, 15026559,15123733,12939465	DTIC
DACARBAZINE	NM_002198	interferon regulatory factor 1	IRF1	17973783	unrelated
DACARBAZINE	NM_005921	mitogen-activated protein kinase kinase kinase 1	MAP3K 1	15123733	
DACARBAZINE	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	15123733	
DACARBAZINE	NM_001040056;NM_001109891;NM _002746	mitogen-activated protein kinase 3	MAPK3	15123733	
DACARBAZINE	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	12787138	
DACARBAZINE	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	10751609,12170182,15870882, 14562026	resistance
DACARBAZINE	NM_002689	polymerase (DNA directed), alpha 2 (70kD subunit)	POLA2	-	
DACARBAZINE	NM_006516	solute carrier family 2 (facilitated glucose transporter), member 1	SLC2A 1	17520257	resistance
DACARBAZINE	NM_003810	tumor necrosis factor (ligand) superfamily, member 10	TNFSF 10	17410615	therapy
DACARBAZINE	NM_001025366;NM_001025367;NM _001025368;NM_001025369;NM_00 1025370;NM_001033756;NM_00337 6	vascular endothelial growth factor A	VEGFA	12939465,15123733, 15026559,12939465, 15026559,12939465,15123733, 15026559,15123733,12939465	
TEMOZOLOMIDE	NM_000029	angiotensinogen (serpin peptidase inhibitor, clade A, member 8)	AGT	11034089	resistance
TEMOZOLOMIDE	-	-	AKT	-	resistance
TEMOZOLOMIDE	NM_004052	BCL2/adenovirus E1B 19kDa interacting protein 3	BNIP3	-	resistance
TEMOZOLOMIDE	NM_001129889;NM_001922	dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)	DCT	15897911	
TEMOZOLOMIDE	NM_002006	fibroblast growth factor 2 (basic)	FGF2	-	resistance
TEMOZOLOMIDE	NM_001145336;NM_001145337;NM _001145339;NM_001145340;NM_00 2392;NM_006878;NM_006879;NM_0 06881;NM_006882	Mdm2 p53 binding protein homolog (mouse)	MDM2	-	sensitivity
TEMOZOLOMIDE	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	15319033, 15486188, 15758010,15814657,15833865,16 039682, 15865885, 16075413	resistance
TEMOZOLOMIDE	NM_001015052;NM_001015054;NM _002434	N-methylpurine-DNA glycosylase	MPG	15299078, 15299078,16024643	sensitivity
TEMOZOLOMIDE	NM_020529	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	NFKBIA	17638900	

TEMOZOLOMIDE	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	15867241	resistance
TEMOZOLOMIDE	NM_021127	phorbol-12-myristate-13-acetate-induced protein 1	PMAIP1	17216584	unrelated
TEMOZOLOMIDE	NM_002690	polymerase (DNA directed), beta	POLB	16024643	resistance
TEMOZOLOMIDE	NM_007195	polymerase (DNA directed) iota	POLI	16024643	unrelated
TEMOZOLOMIDE	NM_013274	polymerase (DNA directed), lambda	POLL	16024643	unrelated
TEMOZOLOMIDE	NM_000963	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PTGS2	17638900	
TEMOZOLOMIDE	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	17638900	
TEMOZOLOMIDE	NM_000636;NM_001024465;NM_001024466	superoxide dismutase 2, mitochondrial	SOD2	17638900	
TEMOZOLOMIDE	NM_198253;NM_198255	telomerase reverse transcriptase	TERT	18021753	
TEMOZOLOMIDE	NM_000594	tumor necrosis factor (TNF superfamily, member 2)	TNF	17638900	
TEMOZOLOMIDE	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	17216584	resistance
TEMOZOLOMIDE	NM_001167	X-linked inhibitor of apoptosis	XIAP	17638900	
THIOTEPA	NM_004322;NM_032989	BCL2-associated agonist of cell death	BAD	10822281	
THIOTEPA	NM_001188	BCL2-antagonist/killer 1	BAK1	10822281	
THIOTEPA	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	10822281	
THIOTEPA	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	10822281	
THIOTEPA	NM_001191;NM_138578	BCL2-like 1	BCL2L1	10822281	
THIOTEPA	NM_000767	cytochrome P450, family 2, subfamily B, polypeptide 6	CYP2B6	15769884	
THIOTEPA	NM_145740	glutathione S-transferase alpha 1	GSTA1	7712478	polymorphism
THIOTEPA	NM_000846	glutathione S-transferase alpha 2	GSTA2	7712478	polymorphism
THIOTEPA	NM_000561;NM_146421	glutathione S-transferase mu 1	GSTM1	7712478	polymorphism
THIOTEPA	NM_000852	glutathione S-transferase pi 1	GSTP1	10334868, 7712478	polymorphism
THIOTEPA	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	16039682	unrelated
THIOTEPA	NM_002542;NM_016819;NM_016820;NM_016821;NM_016826;NM_016827;NM_016828;NM_016829	8-oxoguanine DNA glycosylase	OGG1	11431349,11	
ECTEINASCIDIN 743	NM_001237	cyclin A2	CCNA2	-	
ECTEINASCIDIN	NM_031966	cyclin B1	CCNB1	-	

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ECTEINASCIDIN 743	NM_004701	cyclin B2	CCNB2	-	
ECTEINASCIDIN 743	NM_005225	E2F transcription factor 1	E2F1	-	
DOCETAXEL	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	15239124, 15239142	resistance
DOCETAXEL	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	15239124	resistance
DOCETAXEL	NM_000392	ATP-binding cassette, sub-family C (CFTR/MRP), member 2	ABCC2	15849751	resistance
DOCETAXEL	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	-	resistance
DOCETAXEL	NM_001191;NM_138578	BCL2-like 1	BCL2L1	16080463	resistance
DOCETAXEL	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	16224667,19	resistance
DOCETAXEL	NM_001211	budding uninhibited by benzimidazoles 1 homolog beta (yeast)	BUB1B	18691855	
DOCETAXEL	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	15970518	death pathway
DOCETAXEL	NM_031966	cyclin B1	CCNB1	-	
DOCETAXEL	NM_001127183;NM_001127184;NM_003879	CASP8 and FADD-like apoptosis regulator	CFLAR	16080463	unrelated
DOCETAXEL	NM_000103;NM_031226	cytochrome P450, family 19, subfamily A, polypeptide 1	CYP19A1	15623590	
DOCETAXEL	NM_000104	cytochrome P450, family 1, subfamily B, polypeptide 1	CYP1B1	18187806	drug metabolism
DOCETAXEL	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A4	15239142	drug metabolism
DOCETAXEL	NM_001005862;NM_004448	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)	ERBB2	15567936, 15834928, 17010609	unrelated
DOCETAXEL	NM_000852	glutathione S-transferase pi 1	GSTP1	15239142	resistance
DOCETAXEL	NM_001530;NM_181054	hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	HIF1A	17498666	altered by docetaxel
DOCETAXEL	NM_001130442;NM_005343;NM_176795	v-Ha-ras Harvey rat sarcoma viral oncogene homolog	HRAS	15970518	resistance
DOCETAXEL	NM_000600	interleukin 6 (interferon, beta 2)	IL6	15623590	altered by docetaxel
DOCETAXEL	NM_002358	MAD2 mitotic arrest deficient-like 1 (yeast)	MAD2L	18691855	

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DOCETAXEL	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	15970518	resistance
DOCETAXEL	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	15970518	resistance
DOCETAXEL	NM_001145336;NM_001145337;NM_001145339;NM_001145340;NM_002392;NM_006878;NM_006879;NM_006881;NM_006882	Mdm2 p53 binding protein homolog (mouse)	MDM2	16080190	
DOCETAXEL	NR_022009;NR_022009;NR_022009;NR_022009;NR_022009;NR_022009	Prader-Willi/Angelman region-1	PAR1	16052512	
DOCETAXEL	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	15970518	altered by docetaxel
DOCETAXEL	NM_000926	progesterone receptor	PGR	15623590	
DOCETAXEL	NM_000941	P450 (cytochrome) oxidoreductase	POR	15239142	unrelated
DOCETAXEL	NM_000963	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PTGS2	15623590	resistance
DOCETAXEL	NM_002880	v-raf-1 murine leukemia viral oncogene homolog 1	RAF1	15970518	unrelated
DOCETAXEL	NM_000321	retinoblastoma 1	RB1	15297405	
DOCETAXEL	NM_005983;NM_032637	S-phase kinase-associated protein 2 (p45)	SKP2	18644126	unrelated
DOCETAXEL	NM_000594	tumor necrosis factor (TNF superfamily, member 2)	TNF	15623590	
DOCETAXEL	NM_003842;NM_147187	tumor necrosis factor receptor superfamily, member 10b	TNFRSF10B	17922852	
DOCETAXEL	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	15297405, 15970518, 15970518,16080190, 16080190, 17369602	
DOCETAXEL	NM_178014	tubulin, beta	TUBB	15239142, 16080190	target/resistance
DOCETAXEL	NM_030773	tubulin, beta 1	TUBB1	-	target/resistance
DOCETAXEL	NM_001071	thymidylate synthetase	TYMS	19074750	
DOCETAXEL	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	17498666	altered by docetaxel
DOCETAXEL	NM_001167	X-linked inhibitor of apoptosis	XIAP	19102932	

PACLITAXEL	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	10617675, 15239142, 15650019, 15901749, 15990222,15252144, 15990222,15650019, 16322897, 18433974	resistance
PACLITAXEL	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	15548710	resistance
PACLITAXEL	NM_000392	ATP-binding cassette, sub-family C (CFTR/MRP), member 2	ABCC2	15645438, 15849751	resistance
PACLITAXEL	NM_001130846;NM_001130847;NM_004208;NM_145812;NM_145813	apoptosis-inducing factor, mitochondrion-associated, 1	AIFM1	16168113	death pathway
PACLITAXEL	NM_001354;NM_205845	aldo-keto reductase family 1, member C2 (dihydrodiol dehydrogenase 2; bile acid binding protein; 3-alpha hydroxysteroid dehydrogenase, type III)	AKR1C2	16322897	unrelated
PACLITAXEL	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	16211241, 16782806, 18071906	resistance
PACLITAXEL	NM_001626	v-akt murine thymoma viral oncogene homolog 2	AKT2	18071906	resistance
PACLITAXEL	NM_005465;NM_181690	v-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)	AKT3	18071906	resistance
PACLITAXEL	NM_001144	autocrine motility factor receptor	AMFR	16896004	
PACLITAXEL	NM_001160;NM_013229;NM_181861;NM_181868;NM_181869	apoptotic peptidase activating factor 1	APAF1	14749477	death pathway
PACLITAXEL	NM_004312	arrestin 3, retinal (X-arrestin)	ARR3	16322897	
PACLITAXEL	NM_018136	asp (abnormal spindle) homolog, microcephaly associated (Drosophila)	ASPM	17374387	
PACLITAXEL	NM_003600;NM_198433;NM_198434;NM_198435;NM_198436;NM_198437	aurora kinase A	AURKA	17374387	resistance
PACLITAXEL	NM_004322;NM_032989	BCL2-associated agonist of cell death	BAD	10822281, 16413505	death pathway
PACLITAXEL	NM_001188	BCL2-antagonist/killer 1	BAK1	10822281	
PACLITAXEL	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	10822281, 16051289, 16168113	death pathway
PACLITAXEL	NM_033028	Bardet-Biedl syndrome 4	BBS4	16896004	
PACLITAXEL	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	10822281, 12086014, 16168113, 16243823, 16275990, 16322897	resistance
PACLITAXEL	NM_001191;NM_138578	BCL2-like 1	BCL2L1	10822281, 14749477, 16051289, 16243823, 16275990,11468182,16080463	resistance
PACLITAXEL	NM_003766	beclin 1, autophagy related	BECN1	16896004	

PACLITAXEL	NM_001196;NM_197966;NM_197967	BH3 interacting domain death agonist	BID	14749477	unrelated
PACLITAXEL	NM_001166	baculoviral IAP repeat-containing 2	BIRC2	14749477, 16243823	unrelated
PACLITAXEL	NM_001165;NM_182962	baculoviral IAP repeat-containing 3	BIRC3	14749477, 16243823	resistance
PACLITAXEL	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	14749477, 15970709, 16170024, 16202317, 16211241, 16373717	resistance
PACLITAXEL	NM_001719	bone morphogenetic protein 7	BMP7	16322897	
PACLITAXEL	NM_001130914;NM_006806	BTG family, member 3	BTG3	16896004	
PACLITAXEL	NM_001211	budding uninhibited by benzimidazoles 1 homolog beta (yeast)	BUB1B	18691855	resistance
PACLITAXEL	-	-	C7ORF23	15556294	
PACLITAXEL	NM_001218;NM_206925	carbonic anhydrase XII	CA12	16896004	unrelated
PACLITAXEL	NM_001033952;NM_001033953;NM_001741	calcitonin-related polypeptide alpha	CALCA	16222118	
PACLITAXEL	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	10822281,12086014, 16051289, 16168113, 16170024, 16413505, 18071906	death pathway
PACLITAXEL	NM_001227;NM_033338;NM_033339;NM_033340	caspase 7, apoptosis-related cysteine peptidase	CASP7	14749477, 16168113	death pathway
PACLITAXEL	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	14749477, 16051289, 16168113, 18071906	death pathway
PACLITAXEL	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	14749477, 16168113, 16170024	death pathway
PACLITAXEL	NM_001753	caveolin 1, caveolae protein, 22kDa	CAV1	16322897	altered by paclitaxel
PACLITAXEL	NM_031966	cyclin B1	CCNB1	16356831	sensitivity / resistance
PACLITAXEL	NM_053056	cyclin D1	CCND1	16243823	sensitivity / unrelated
PACLITAXEL	NM_002389;NM_153826;NM_172350;NM_172351;NM_172352;NM_172353;NM_172354;NM_172355;NM_172356;NM_172357;NM_172358;NM_172359;NM_172360;NM_172361	CD46 molecule, complement regulatory protein	CD46	16322897	
PACLITAXEL	NM_001025079;NM_001777;NM_198793	CD47 molecule	CD47	16322897	
PACLITAXEL	NM_001785	cytidine deaminase	CDA	18728667	

PACLITAXEL	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	16168113, 16413505	sensitivity
PACLITAXEL	NM_001127183;NM_001127184;NM_003879	CASP8 and FADD-like apoptosis regulator	CFLAR	16060463	resistance
PACLITAXEL	NM_001831;NM_203339	clusterin	CLU	16308731,16	resistance
PACLITAXEL	NM_006565	CCCTC-binding factor (zinc finger protein)	CTCF	16322897	
PACLITAXEL	NM_001332	catenin (cadherin-associated protein), delta 2 (neural plakophilin-related arm-repeat protein)	CTNND2	16896004	
PACLITAXEL	NM_001912;NM_145918	cathepsin L1	CTSL1	16322897	
PACLITAXEL	NM_001008540;NM_003467	chemokine (C-X-C motif) receptor 4	CXCR4	16322897	
PACLITAXEL	NM_006564	chemokine (C-X-C motif) receptor 6	CXCR6	16322897	
PACLITAXEL	NM_020311	chemokine (C-X-C motif) receptor 7	CXCR7	16322897	
PACLITAXEL	NM_018947	cytochrome c, somatic	CYCS	14749477, 16051289, 16413505	death pathway
PACLITAXEL	NM_000103;NM_031226	cytochrome P450, family 19, subfamily A, polypeptide 1	CYP19A1	14691014	
PACLITAXEL	NM_000767	cytochrome P450, family 2, subfamily B, polypeptide 6	CYP2B6	14977870	
PACLITAXEL	NM_000770	cytochrome P450, family 2, subfamily C, polypeptide 8	CYP2C8	12464242,12401345,16124035, 15239142, 15933212,15901749	drug metabolism
PACLITAXEL	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A4	12065438, 15650019, 15901749	drug metabolism
PACLITAXEL	NM_019887;NM_138929	diablo homolog (Drosophila)	DIABLO	14749477	sensitivity
PACLITAXEL	NM_000110	dihydropyrimidine dehydrogenase	DPYD	18506536, 18630517	
PACLITAXEL	NM_001949	E2F transcription factor 3	E2F3	16896004	
PACLITAXEL	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	15723263, 16211241, 16413505	resistance
PACLITAXEL	NM_001042599;NM_005235	v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)	ERBB4	16896004	
PACLITAXEL	NM_000043;NM_152871;NM_152872;NM_152873;NM_152874;NM_152875;NM_152876;NM_152877	Fas (TNF receptor superfamily, member 6)	FAS	16051289	sensitivity
PACLITAXEL	NM_000639	Fas ligand (TNF superfamily, member 6)	FASLG	16051289	sensitivity
PACLITAXEL	NM_001135821;NM_001135822;NM_002004	farnesyl diphosphate synthase (farnesyl pyrophosphate synthetase, dimethylallyltranstransferase, geranyltranstransferase)	FDPS	16322897	
PACLITAXEL	NM_002032	ferritin, heavy polypeptide 1	FTH1	16322897	
PACLITAXEL	NM_000146	ferritin, light polypeptide	FTL	16322897	

PACLITAXEL	NM_002569	furin (paired basic amino acid cleaving enzyme)	FURIN	16322897	
PACLITAXEL	NM_001136007;NM_001136008;NM_001136009;NM_001136010;NM_001136011;NM_001136012;NM_005971;NM_021910	FXYD domain containing ion transport regulator 3	FXYD3	16322897	
PACLITAXEL	NM_001924	growth arrest and DNA-damage-inducible, alpha	GADD45A	16322897	sensitivity
PACLITAXEL	NM_000156;NM_138924	guanidinoacetate N-methyltransferase	GAMT	16896004	
PACLITAXEL	NM_001145453;NM_005264;NM_145793	GDNF family receptor alpha 1	GFRA1	16896004	
PACLITAXEL	NM_000561;NM_146421	glutathione S-transferase mu 1	GSTM1	12851839	resistance
PACLITAXEL	NM_000851	glutathione S-transferase mu 5	GSTM5	16322897	resistance
PACLITAXEL	NM_000852	glutathione S-transferase pi 1	GSTP1	15239142	resistance
PACLITAXEL	NM_000853	glutathione S-transferase theta 1	GSTT1	12851839	resistance
PACLITAXEL	NM_001530;NM_181054	hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	HIF1A	17498666	
PACLITAXEL	NM_000201	intercellular adhesion molecule 1	ICAM1	16243823	altered by paclitaxel
PACLITAXEL	NM_006332	interferon, gamma-inducible protein 30	IFI30	16322897	
PACLITAXEL	NM_000875	insulin-like growth factor 1 receptor	IGF1R	15499378	
PACLITAXEL	NM_001552	insulin-like growth factor binding protein 4	IGFBP4	16896004	
PACLITAXEL	NM_002213	integrin, beta 5	ITGB5	16322897	
PACLITAXEL	-	-	JMJD2B	16896004	
PACLITAXEL	NM_002228	jun oncogene	JUN	15585644	altered by paclitaxel
PACLITAXEL	NM_020853	KIAA1467	KIAA1467	16896004	
PACLITAXEL	NM_007054	kinesin family member 3A	KIF3A	16896004	
PACLITAXEL	NM_002274;NM_153490	keratin 13	KRT13	16322897	
PACLITAXEL	NM_002358	MAD2 mitotic arrest deficient-like 1 (yeast)	MAD2L1	18691855	
PACLITAXEL	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	16051289, 16211241, 16413505	
PACLITAXEL	NM_001315;NM_139012;NM_139013;NM_139014	mitogen-activated protein kinase 14	MAPK14	16051289	death pathway
PACLITAXEL	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	16051289, 16211241, 16413505	

PACLITAXEL	NM_002750;NM_139046;NM_139047;NM_139049	mitogen-activated protein kinase 8	MAPK8	16051289	death pathway
PACLITAXEL	NM_001135044;NM_002752;NM_139068;NM_139069;NM_139070	mitogen-activated protein kinase 9	MAPK9	16051289	death pathway
PACLITAXEL	NM_001123066;NM_001123067;NM_005910;NM_016834;NM_016835;NM_016841	microtubule-associated protein tau	MAPT	16896004	resistance
PACLITAXEL	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	14749477	resistance
PACLITAXEL	NM_001145336;NM_001145337;NM_001145339;NM_001145340;NM_002392;NM_006878;NM_006879;NM_006881;NM_006882	Mdm2 p53 binding protein homolog (mouse)	MDM2	13130078	resistance
PACLITAXEL	NM_004774	mediator complex subunit 1	MED1	15650019	
PACLITAXEL	NM_015335	mediator complex subunit 13-like	MED13L	16896004	
PACLITAXEL	NM_014791	maternal embryonic leucine zipper kinase	MELK	16896004	
PACLITAXEL	NM_024042	meteorin, glial cell differentiation regulator	METRN	16896004	
PACLITAXEL	NM_004994	matrix metallopeptidase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)	MMP9	16243823	
PACLITAXEL	NM_175617	metallothionein 1E	MT1E	16322897	unrelated
PACLITAXEL	NM_005953	metallothionein 2A	MT2A	16322897	unrelated
PACLITAXEL	NM_002467	v-myc myelocytomatosis viral oncogene homolog (avian)	MYC	16243823, 18802399	death pathway
PACLITAXEL	NM_000662	N-acetyltransferase 1 (arylamine N-acetyltransferase)	NAT1	15015580, 17564303	altered by paclitaxel
PACLITAXEL	NM_006534;NM_181659	nuclear receptor coactivator 3	NCOA3	15650019	
PACLITAXEL	NM_003998	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	NFKB1	16243823	altered by paclitaxel
PACLITAXEL	NM_020529	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	NFKBIA	16243823	sensitivity
PACLITAXEL	NM_024522	Na+/K+ transporting ATPase interacting 1	NKAIN1	16896004	
PACLITAXEL	NM_003889;NM_022002;NM_033013	nuclear receptor subfamily 1, group I, member 2	NR1I2	14977870,15864135, 15650019, 15650019,12065438, 15864135	resistance
PACLITAXEL	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	14749477, 15585644, 18071906,15585644	altered by paclitaxel
PACLITAXEL	NM_002613;NM_031268	3-phosphoinositide dependent protein kinase-1	PDPK1	16782806	resistance
PACLITAXEL	NM_000304;NM_153321;NM_153322	peripheral myelin protein 22	PMP22	16322897	

PACLITAXEL	NM_000941	P450 (cytochrome) oxidoreductase	POR	15239142	unrelated
PACLITAXEL	NM_003981;NM_199413;NM_199414	protein regulator of cytokinesis 1	PRC1	17374387	
PACLITAXEL	NM_000314	phosphatase and tensin homolog	PTEN	11707646, 15548710	resistance/mutation
PACLITAXEL	NM_000963	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PTGS2	16127422, 16243823, 16831230	sensitivity / resistance
PACLITAXEL	NM_005855	receptor (G protein-coupled) activity modifying protein 1	RAMP1	16896004	
PACLITAXEL	NM_000321	retinoblastoma 1	RB1	15138593	altered by paclitaxel
PACLITAXEL	NM_005611	retinoblastoma-like 2 (p130)	RBL2	15585644	unrelated
PACLITAXEL	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	15291876, 16243823	resistance
PACLITAXEL	NM_000449;NM_001025603	regulatory factor X, 5 (influences HLA class II expression)	RFX5	16322897	
PACLITAXEL	NM_000984	ribosomal protein L23a	RPL23A	16322897	
PACLITAXEL	NM_001003;NM_213725	ribosomal protein, large, P1	RPLP1	16322897	
PACLITAXEL	NM_001034	ribonucleotide reductase M2 polypeptide	RRM2	16896004	
PACLITAXEL	NM_001015055;NM_001015056;NM_033046	rhotekin	RTKN	15480428	
PACLITAXEL	NM_005980	S100 calcium binding protein P	S100P	16322897, 18636193	sensitivity
PACLITAXEL	NM_020974	signal peptide, CUB domain, EGF-like 2	SCUBE2	16896004	
PACLITAXEL	NM_003130;NM_198901	sorcin	SRI	18423116	
PACLITAXEL	NM_198253;NM_198255	telomerase reverse transcriptase	TERT	18021753	
PACLITAXEL	NM_003225	trefoil factor 1	TFF1	16322897	
PACLITAXEL	NM_018271	threonine synthase-like 2 (S. cerevisiae)	THNSL2	16896004	
PACLITAXEL	NM_003842;NM_147187	tumor necrosis factor receptor superfamily, member 10b	TNFRSF10B	17922852	altered by paclitaxel
PACLITAXEL	NM_001067	topoisomerase (DNA) II alpha 170kDa	TOP2A	16322897	altered by paclitaxel
PACLITAXEL	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	15990222, 15990222,12082016, 16168113, 16413505	unrelated

PACLITAXEL	NM_178014	tubulin, beta	TUBB	15239142	target/resistance
PACLITAXEL	NM_030773	tubulin, beta 1	TUBB1	-	target ?
PACLITAXEL	NM_001113755;NM_001113756;NM_001953	thymidine phosphorylase	TYMP	18506536, 18630517	
PACLITAXEL	NM_001071	thymidylate synthetase	TYMS	10482907, 16168113, 18630517	unrelated
PACLITAXEL	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	16243823, 17498666	
PACLITAXEL	NM_001167	X-linked inhibitor of apoptosis	XIAP	16243823, 16356831, 18071906	resistance
PACLITAXEL	NM_024762	zinc finger protein 552	ZNF552	16896004	
VINBLASTINE	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	11355955,8917702,15725475, 15466210, 15640379, 15824923, 16221533	resistance
VINBLASTINE	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	16156793	resistance
VINBLASTINE	NM_000392	ATP-binding cassette, sub-family C (CFTR/MRP), member 2	ABCC2	15849751, 9525973,15849751	resistance
VINBLASTINE	NM_032982;NM_032983	caspase 2, apoptosis-related cysteine peptidase	CASP2	14757846	
VINBLASTINE	NM_001556	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta	IKBKB	17029595	altered by VB
VINBLASTINE	NM_002228	jun oncogene	JUN	12221076	resistance
VINBLASTINE	NM_002750;NM_139046;NM_139047;NM_139049	mitogen-activated protein kinase 8	MAPK8	12221076	death pathway
VINBLASTINE	NM_001135044;NM_002752;NM_139068;NM_139069;NM_139070	mitogen-activated protein kinase 9	MAPK9	12221076	death pathway
VINBLASTINE	NM_002467	v-myc myelocytomatosis viral oncogene homolog (avian)	MYC	18802399	
VINBLASTINE	NM_001136022;NM_004554	nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 4	NFATC4	17044076	
VINBLASTINE	NM_020529	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	NFKBIA	17029595	
VINBLASTINE	NM_006788	ralA binding protein 1	RALBP1	-	resistance
VINBLASTINE	NM_003842;NM_147187	tumor necrosis factor receptor superfamily, member 10b	TNFRSF10B	17922852	

VINBLASTINE	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	12221076	
VINBLASTINE	NM_001069	tubulin, beta 2A	TUBB2A	-	unrelated
VINCRISTINE	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	10617675, 11934808, 15239124,16038730, 15645438, 16925584	resistance
VINCRISTINE	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	10900222, 15581632, 15896345, 16042792,15896345,10900222,15044619,12067707	resistance
VINCRISTINE	NM_000392	ATP-binding cassette, sub-family C (CFTR/MRP), member 2	ABCC2	15896345	resistance
VINCRISTINE	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	16740780	resistance
VINCRISTINE	NM_001160;NM_013229;NM_181861;NM_181868;NM_181869	apoptotic peptidase activating factor 1	APAF1	16001973	death pathway
VINCRISTINE	NM_000039	apolipoprotein A-I	APOA1	16001973	
VINCRISTINE	NM_018136	asp (abnormal spindle) homolog, microcephaly associated (Drosophila)	ASPM	17374387	
VINCRISTINE	NM_003600;NM_198433;NM_198434;NM_198435;NM_198436;NM_198437	aurora kinase A	AURKA	17374387	resistance
VINCRISTINE	NM_004322;NM_032989	BCL2-associated agonist of cell death	BAD	16001973	death pathway
VINCRISTINE	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	16001973	death pathway
VINCRISTINE	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	16001973	resistance
VINCRISTINE	NM_001223;NM_033292;NM_033293;NM_033294;NM_033295	caspase 1, apoptosis-related cysteine peptidase (interleukin 1, beta, convertase)	CASP1	16001973	
VINCRISTINE	NM_001230;NM_032974;NM_032977	caspase 10, apoptosis-related cysteine peptidase	CASP10	16001973	
VINCRISTINE	NM_032982;NM_032983	caspase 2, apoptosis-related cysteine peptidase	CASP2	16001973	death pathway
VINCRISTINE	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	16001973	death pathway
VINCRISTINE	NM_001225;NM_033306	caspase 4, apoptosis-related cysteine peptidase	CASP4	16001973	
VINCRISTINE	NM_001136109;NM_001136110;NM_001136111;NM_001136112;NM_004347	caspase 5, apoptosis-related cysteine peptidase	CASP5	16001973	

VINCRISTINE	NM_001226;NM_032992	caspase 6, apoptosis-related cysteine peptidase	CASP6	16001973	death pathway
VINCRISTINE	NM_001227;NM_033338;NM_033339;NM_033340	caspase 7, apoptosis-related cysteine peptidase	CASP7	16001973	death pathway
VINCRISTINE	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	16001973	death pathway
VINCRISTINE	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	16001973	death pathway
VINCRISTINE	NM_001752	catalase	CAT	11178967	
VINCRISTINE	NM_005194	CCAAT/enhancer binding protein (C/EBP), beta	CEBPB	16001973	
VINCRISTINE	NM_001025194;NM_001025195;NM_001266	carboxylesterase 1 (monocyte/macrophage serine esterase 1)	CES1	16001973	
VINCRISTINE	NM_000492	cystic fibrosis transmembrane conductance regulator (ATP-binding cassette sub-family C, member 7)	CFTR	16038730	
VINCRISTINE	NM_020313	cytokine induced apoptosis inhibitor 1	CIAPIN1	18389626	
VINCRISTINE	NM_001916	cytochrome c-1	CYC1	16001973	death pathway
VINCRISTINE	NM_005225	E2F transcription factor 1	E2F1	16001973	
VINCRISTINE	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	16001973	
VINCRISTINE	NM_003824	Fas (TNFRSF6)-associated via death domain	FADD	16001973	
VINCRISTINE	NM_012306	Fas apoptotic inhibitory molecule 2	FAIM2	16001973	
VINCRISTINE	NM_002046	glyceraldehyde-3-phosphate dehydrogenase	GAPDH	16001973	
VINCRISTINE	NM_001498	glutamate-cysteine ligase, catalytic subunit	GCLC	10900222	
VINCRISTINE	NM_002061	glutamate-cysteine ligase, modifier subunit	GCLM	10900222	
VINCRISTINE	NM_000561;NM_146421	glutathione S-transferase mu 1	GSTM1	15044619, 15713801	resistance
VINCRISTINE	NM_000852	glutathione S-transferase pi 1	GSTP1	10900222	
VINCRISTINE	NM_016315	GULP, engulfment adaptor PTB domain containing 1	GULP1	16001973	
VINCRISTINE	NM_001130442;NM_005343;NM_176795	v-Ha-ras Harvey rat sarcoma viral oncogene homolog	HRAS	16001973	resistance
VINCRISTINE	NM_000415	islet amyloid polypeptide	IAPP	16001973	
VINCRISTINE	NM_000618;NM_001111283;NM_001111284;NM_001111285	insulin-like growth factor 1 (somatomedin C)	IGF1	16740780	
VINCRISTINE	NM_000875	insulin-like growth factor 1 receptor	IGF1R	16001973	resistance
VINCRISTINE	NM_000600	interleukin 6 (interferon, beta 2)	IL6	16001973	unrelated
VINCRISTINE	NM_005572;NM_170707;NM_170708	lamin A/C	LMNA	16001973	
VINCRISTINE	NM_005573	lamin B1	LMNB1	16001973	resistance

VINCRISTINE	NM_003010	mitogen-activated protein kinase kinase 4	MAP2K4	16001973	altered by vincristine
VINCRISTINE	NM_003188;NM_145331;NM_145332;NM_145333	mitogen-activated protein kinase kinase kinase 7	MAP3K7	16001973	
VINCRISTINE	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	16001973	
VINCRISTINE	NM_001145336;NM_001145337;NM_001145339;NM_001145340;NM_002392;NM_006878;NM_006879;NM_006881;NM_006882	Mdm2 p53 binding protein homolog (mouse)	MDM2	16001973	
VINCRISTINE	NM_001130926;NM_001130927;NM_001130928;NM_005587	myocyte enhancer factor 2A	MEF2A	16001973	
VINCRISTINE	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	16033832	
VINCRISTINE	NM_002467	v-myc myelocytomatosis viral oncogene homolog (avian)	MYC	16001973	
VINCRISTINE	NM_003998	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	NFKB1	15744361, 16001973	resistance
VINCRISTINE	NM_006025	26 serine protease	P11	16001973	
VINCRISTINE	-	-	PCAF	16001973	
VINCRISTINE	NM_003981;NM_199413;NM_199414	protein regulator of cytokinesis 1	PRC1	17374387	
VINCRISTINE	NM_000311;NM_001080121;NM_001080122;NM_001080123;NM_183079	prion protein	PRNP	15386405	
VINCRISTINE	NM_000963	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PTGS2	18695918	
VINCRISTINE	NM_004103;NM_173174;NM_173175;NM_173176	PTK2B protein tyrosine kinase 2 beta	PTK2B	11478917	
VINCRISTINE	NM_006264;NM_080683;NM_080684;NM_080685	protein tyrosine phosphatase, non-receptor type 13 (APO-1/CD95 (Fas)-associated phosphatase)	PTPN13	16001973	
VINCRISTINE	NM_006788	ralA binding protein 1	RALBP1	-	
VINCRISTINE	NM_000965;NM_016152	retinoic acid receptor, beta	RARB	17608728	
VINCRISTINE	NM_001145547;NM_032905	RNA binding motif protein 17	RBM17	16061639	resistance
VINCRISTINE	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	15744361	resistance
VINCRISTINE	NM_002944	c-ros oncogene 1 , receptor tyrosine kinase	ROS1	16001973	
VINCRISTINE	NM_001031680;NM_004350	runt-related transcription factor 3	RUNX3	15756676	
VINCRISTINE	NM_006516	solute carrier family 2 (facilitated glucose transporter),	SLC2A	17520257	

		member 1	1		
VINCRISTINE	NM_005633	son of sevenless homolog 1 (Drosophila)	SOS1	16001973	
VINCRISTINE	NM_003130;NM_198901	sorcin	SRI	18423116	
VINCRISTINE	NM_007315;NM_139266	signal transducer and activator of transcription 1, 91kDa	STAT1	16001973	
VINCRISTINE	NM_005419	signal transducer and activator of transcription 2, 113kDa	STAT2	16001973	
VINCRISTINE	NM_003150;NM_139276;NM_213662	signal transducer and activator of transcription 3 (acute-phase response factor)	STAT3	16001973	
VINCRISTINE	NM_000594	tumor necrosis factor (TNF superfamily, member 2)	TNF	16001973	synergistic effetcs
VINCRISTINE	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	12082016, 16001973, 17555331	
VINCRISTINE	NM_000365;NM_001159287	triosephosphate isomerase 1	TPI1	18309519	
VINCRISTINE	NM_001069	tubulin, beta 2A	TUBB2A	-	target?
VINCRISTINE	NM_001071	thymidylate synthetase	TYMS	15713801	
VINCRISTINE	NM_000376;NM_001017535	vitamin D (1,25- dihydroxyvitamin D3) receptor	VDR	15713801	
VINCRISTINE	NM_001079539;NM_005080	X-box binding protein 1	XBP1	17353921	
VINFLUNINE	NM_030773	tubulin, beta 1	TUBB1	-	target
VINDESINE	NM_030773	tubulin, beta 1	TUBB1	-	target
VINORELBINE	NM_006788	ralA binding protein 1	RALBP1	-	resistance
VINORELBINE	NM_001145547;NM_032905	RNA binding motif protein 17	RBM17	16061639	resistance
VINORELBINE	NM_001078174;NM_001078175;NM_001078176;NM_001078177;NM_004955	solute carrier family 29 (nucleoside transporters), member 1	SLC29A1	18452103	resistance
VINORELBINE	NM_001069	tubulin, beta 2A	TUBB2A	-	target
EPOTHILONES	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	12517783	death pathway
EPOTHILONES	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	12517783	resistance
EPOTHILONES	NM_001191;NM_138578	BCL2-like 1	BCL2L1	12517783	
EPOTHILONES	NM_001165;NM_182962	baculoviral IAP repeat-containing 3	BIRC3	12517783	altered by epothilone

EPOTHILONES	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	12517783	altered by epothilone
EPOTHILONES	-	-	TUBA1	-	
EPOTHILONES	-	-	TUBA2	-	
EPOTHILONES	-	-	TUBA3	-	
EPOTHILONES	-	-	TUBA6	-	
EPOTHILONES	NM_018943	tubulin, alpha 8	TUBA8	-	
EPOTHILONES	NM_030773	tubulin, beta 1	TUBB1	-	target?
EPOTHILONES	NM_001069	tubulin, beta 2A	TUBB2A	-	target?
EPOTHILONES	NM_006088	tubulin, beta 2C	TUBB2C	-	target?
EPOTHILONES	NM_006086	tubulin, beta 3	TUBB3	-	target?
EPOTHILONES	NM_006087	tubulin, beta 4	TUBB4	-	target?
EPOTHILONES	NM_020040	tubulin, beta polypeptide 4, member Q	TUBB4Q	-	target?
EPOTHILONES	NM_001167	X-linked inhibitor of apoptosis	XIAP	12517783	altered by epothilone
DOXORUBICIN	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	11355955,15765123,11313874,17947497, (following)	resistance
(following) 8917702,15725475,15861398, 15239142, 15501994, 15501994,16579640, 15501994,17526808, 15736412, 15861398, 15946544, 15967469, 16223781, 16322897,16044152,15765123, 16356834, 16499877, 16544145, 16544145,18510171,18560228,17852453, 16579640, 17085340, 17483874,8917702, 17526808, 17947497, 17947497,17526808, 18461970, 8917702					
DOXORUBICIN	-	-	ABCB1A	15695394	resistance
DOXORUBICIN	NM_000443;NM_018849;NM_018850	ATP-binding cassette, sub-family B (MDR/TAP), member 4	ABCB4	11313874, 12926078, 16579640	resistance
DOXORUBICIN	NM_178559	ATP-binding cassette, sub-family B (MDR/TAP), member 5	ABCB5	15899824	resistance
DOXORUBICIN	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	11560771, 12504668, 15473893, 15473893,12067707,11560771,10900222,12657726,17940500, 15548710, 15581632, 15880572, 15946544, 16331495, 17352253, 17852453,18560228, 17940500	resistance
DOXORUBICIN	NM_001144070;NM_003786	ATP-binding cassette, sub-family C (CFTR/MRP), member 3	ABCC3	15695394,15884115,15901850, 18463201	resistance
DOXORUBICIN	NM_004827	ATP-binding cassette, sub-family G (WHITE), member	ABCG2	17273774, 17938326, 18382425	resistance

		2			
DOXORUBICIN	NM_023038;NM_033274	ADAM metallopeptidase domain 19 (meltrin beta)	ADAM19	18510171	
DOXORUBICIN	NM_007038	ADAM metallopeptidase with thrombospondin type 1 motif, 5	ADAMTS5	16404146	
DOXORUBICIN	NM_000687;NM_001161766	adenosylhomocysteinase	AHCY	18510171	
DOXORUBICIN	NM_001130846;NM_001130847;NM_004208;NM_145812;NM_145813	apoptosis-inducing factor, mitochondrion-associated, 1	AIFM1	16168113	
DOXORUBICIN	NM_006066;NM_153326	aldo-keto reductase family 1, member A1 (aldehyde reductase)	AKR1A1	18322072	drug metabolism
DOXORUBICIN	NM_001354;NM_205845	aldo-keto reductase family 1, member C2 (dihydrodiol dehydrogenase 2; bile acid binding protein; 3-alpha hydroxysteroid dehydrogenase, type III)	AKR1C2	18322072	
DOXORUBICIN	NM_003739	aldo-keto reductase family 1, member C3 (3-alpha hydroxysteroid dehydrogenase, type II)	AKR1C3	18635746	drug metabolism
DOXORUBICIN	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	15494689,16168102,17359293, 16059641, 16168102, 16438844, 16740780, 16782806, 17339365, 17359293, 17935137, 17935137,16168102, 18071906	resistance
DOXORUBICIN	NM_001626	v-akt murine thymoma viral oncogene homolog 2	AKT2	18071906	resistance
DOXORUBICIN	NM_005465;NM_181690	v-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)	AKT3	18071906	resistance
DOXORUBICIN	NM_000477	albumin	ALB	17378599, 17378599,16211657	used as drug carrier
DOXORUBICIN	NM_001144	autocrine motility factor receptor	AMFR	16896004	
DOXORUBICIN	NM_001146	angiopoietin 1	ANGPT1	15763944	resistance
DOXORUBICIN	NM_007347	adaptor-related protein complex 4, epsilon 1 subunit	AP4E1	16044152	
DOXORUBICIN	NM_001160;NM_013229;NM_181861;NM_181868;NM_181869	apoptotic peptidase activating factor 1	APAF1	15939500, 16001973,15939500	death pathway
DOXORUBICIN	NM_001142930;NM_001142931;NM_006595	apoptosis inhibitor 5	API5	16322897	
DOXORUBICIN	NM_000039	apolipoprotein A-I	APOA1	16001973	
DOXORUBICIN	NM_000484;NM_001136016;NM_001136129;NM_001136130;NM_001136131;NM_201413;NM_201414	amyloid beta (A4) precursor protein	APP	17608641	resistance
DOXORUBICIN	NM_004706;NM_198877;NM_19900	Rho guanine nucleotide exchange factor (GEF) 1	ARHGE	16404146	

	2		F1		
DOXORUBICIN	NM_014786	Rho guanine nucleotide exchange factor (GEF) 17	ARHGEF17	16404146	
DOXORUBICIN	NM_006407	ADP-ribosylation-like factor 6 interacting protein 5	ARL6IP5	16430862	
DOXORUBICIN	NM_001675;NM_182810	activating transcription factor 4 (tax-responsive enhancer element B67)	ATF4	16298333	
DOXORUBICIN	NM_000051;NM_138292	ataxia telangiectasia mutated	ATM	15489221	
DOXORUBICIN	NM_003945	ATPase, H+ transporting, lysosomal 9kDa, V0 subunit e1	ATP6V0E1	16579640	
DOXORUBICIN	NM_001185	alpha-2-glycoprotein 1, zinc-binding	AZGP1	16404146	
DOXORUBICIN	NM_001497	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 1	B4GALT1	16404146	
DOXORUBICIN	NM_0010011545;NM_001186;NM_206866	BTB and CNC homology 1, basic leucine zipper transcription factor 1	BACH1	16322897	
DOXORUBICIN	NM_004322;NM_032989	BCL2-associated agonist of cell death	BAD	16001973, 16438844, 16705698, 16843435, 17359293	
DOXORUBICIN	NM_004323	BCL2-associated athanogene	BAG1	16322899	
DOXORUBICIN	NM_001188	BCL2-antagonist/killer 1	BAK1	11313874, 15917298	
DOXORUBICIN	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	14601052, 15456408, 15492826, 15576332, 15939500, 15985719, 16001973,17404015, 16168113, 16322301, 16705698, 17542780, 17959036, 17959036,17339365,17542780,17922852	
DOXORUBICIN	NM_001127240;NM_001127241;NM_001127242;NM_014417	BCL2 binding component 3	BBC3	16439685	
DOXORUBICIN	NM_152618	Bardet-Biedl syndrome 12	BBS12	16044152	
DOXORUBICIN	NM_033028	Bardet-Biedl syndrome 4	BBS4	16896004	
DOXORUBICIN	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	14601052,15897917, 15571967, 15576332,	
(following) 15939500, 15985719, 16001973,17404015,18560228, 16168113, 16322301,17541305,16450387, 16322899, 16705698, 16890185, 17542780, 17959036, 17959036,17542780,16890185, 18325115					
DOXORUBICIN	NM_001114735;NM_004049	BCL2-related protein A1	BCL2A1	16572199	
DOXORUBICIN	NM_001191;NM_138578	BCL2-like 1	BCL2L1	14601052, 15781649,11468182, 15911101, 15939500, 15939500,18560228, 16843435, 17912235, 17922852,16843435, 17923112	

DOXORUBICIN	NM_006538;NM_138621;NM_207002	BCL2-like 11 (apoptosis facilitator)	BCL2L11	17339365	
DOXORUBICIN	NM_001040668;NM_138639	BCL2-like 12 (proline rich)	BCL2L12	15576332, 17404015	
DOXORUBICIN	NM_003766	beclin 1, autophagy related	BECN1	16718815, 16896004	
DOXORUBICIN	NM_001196;NM_197966;NM_197967	BH3 interacting domain death agonist	BID	15812552, 15870702, 16705698, 16868541	
DOXORUBICIN	NM_001197	BCL2-interacting killer (apoptosis-inducing)	BIK	16007125, 16705698	
DOXORUBICIN	NM_001166	baculoviral IAP repeat-containing 2	BIRC2	14601052, 14666661, 15359644, 15571967, 15571967,14666661, 17521628	
DOXORUBICIN	NM_001165;NM_182962	baculoviral IAP repeat-containing 3	BIRC3	12926068, 12948851, 15899819, 15911101, 16705698,17521628	
DOXORUBICIN	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	11911975,16086872,16364925,16108013, 11911975,17124180,16108013, 14601052, 16086872, 16086872,17521628, 16108013, 17124180	
DOXORUBICIN	NM_016252	baculoviral IAP repeat-containing 6	BIRC6	17521628	
DOXORUBICIN	NM_022161;NM_139317	baculoviral IAP repeat-containing 7	BIRC7	17521628	
DOXORUBICIN	NM_033341	baculoviral IAP repeat-containing 8	BIRC8	17521628	
DOXORUBICIN	NM_007294;NM_007295;NM_007296;NM_007297;NM_007298;NM_007299;NM_007300;NM_007302;NM_007303;NM_007304;NM_007305	breast cancer 1, early onset	BRCA1	10344722	
DOXORUBICIN	NM_000059	breast cancer 2, early onset	BRCA2	10344722	
DOXORUBICIN	NM_001731	B-cell translocation gene 1, anti-proliferative	BTG1	16705698	
DOXORUBICIN	NM_006763	BTG family, member 2	BTG2	16705698	
DOXORUBICIN	NM_001130914;NM_006806	BTG family, member 3	BTG3	16896004	
DOXORUBICIN	NM_001211	budding uninhibited by benzimidazoles 1 homolog beta (yeast)	BUB1B	15870702	
DOXORUBICIN	NM_001007793;NM_004725	budding uninhibited by benzimidazoles 3 homolog (yeast)	BUB3	16322899	
DOXORUBICIN	-	-	C21ORF87	16044152	
DOXORUBICIN	-	-	C5ORF13	16044152	
DOXORUBICIN	-	-	C7ORF23	15556294, 15556294,18510171	
DOXORUBICIN	NM_001218;NM_206925	carbonic anhydrase XII	CA12	16896004	

DOXORUBICIN	NM_020247	chaperone, ABC1 activity of bc1 complex homolog (S. pombe)	CABC1	16404146	
DOXORUBICIN	NM_004342;NM_033138;NM_033139;NM_033140;NM_033157	caldesmon 1	CALD1	16044152	
DOXORUBICIN	NM_014289	calpain 6	CAPN6	16404146	
DOXORUBICIN	NM_001223;NM_033292;NM_033293;NM_033294;NM_033295	caspase 1, apoptosis-related cysteine peptidase (interleukin 1, beta, convertase)	CASP1	16001973	
DOXORUBICIN	NM_001230;NM_032974;NM_032977	caspase 10, apoptosis-related cysteine peptidase	CASP10	16001973	
DOXORUBICIN	NM_032982;NM_032983	caspase 2, apoptosis-related cysteine peptidase	CASP2	14757846, 15917298, 16001973, 17013758	
DOXORUBICIN	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	15456408, 15557793, 15571967, 15578696,	
(following) 15812552, 15870702, 15939500, 15981920, 15985719, 15985719,16962673,17437844,15456408,16364925,17085670,17088416,16909308,15680309,15981920,19106633,15571967,15578696,16823846,16843435,15868924,18508926, 16001973,15576332,16705698,15939500, 16168113, 16364925, 16823846, 16843435, 16868541, 16890185, 16909308, 16962673, 17013758, 17085670, 17088416, 17285121, 17437844, 17542780, 17935137, 17935137,17542780,16024631,18246814,15897917,17285121,16890185,17651020, 17959036, 17959036,15557793,18071906,15555623,17653088, 18246814, 18278454, 18508926, 19106633					
DOXORUBICIN	NM_001225;NM_033306	caspase 4, apoptosis-related cysteine peptidase	CASP4	16001973	
DOXORUBICIN	NM_001136109;NM_001136110;NM_001136111;NM_001136112;NM_004347	caspase 5, apoptosis-related cysteine peptidase	CASP5	16001973	
DOXORUBICIN	NM_001226;NM_032992	caspase 6, apoptosis-related cysteine peptidase	CASP6	15870702, 16001973, 17437844, 17922852,17437844	
DOXORUBICIN	NM_001227;NM_033338;NM_033339;NM_033340	caspase 7, apoptosis-related cysteine peptidase	CASP7	15870702, 16001973,16705698, 16024631, 16168113, 16298333, 17653088, 19106633	
DOXORUBICIN	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	15812552, 15870702, 15897917,16024631, 15981920, 16001973, 16168113, 16705698, 16868541, 17013758, 17437844, 17437844,18508926,15868924, 17970047, 18071906, 18508926	
DOXORUBICIN	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	15812552, 15870702, 15939500, 15981920,	
(following) 15981920,15868924,18508926,17437844, 16001973,15576332,15939500, 16168113, 16311509, 16311509,15557793,17935137,17653088,15555623, 16364925, 16705698, 17013758, 17285121, 17339365, 17404015, 17437844, 17651020, 17651020,17285121,16024631,16364925, 17935137, 18508926					
DOXORUBICIN	NM_001757	carbonyl reductase 1	CBR1	18635746	drug metabolism
DOXORUBICIN	NM_002982	chemokine (C-C motif) ligand 2	CCL2	12908082	

DOXORUBICIN	NM_001237	cyclin A2	CCNA2	16036217, 16284694, 16537896, 17390037	
DOXORUBICIN	NM_031966	cyclin B1	CCNB1	15141020, 16537896, 16928833, 17320279, 17893511	
DOXORUBICIN	NM_053056	cyclin D1	CCND1	16036217	
DOXORUBICIN	NM_001759	cyclin D2	CCND2	16928833	
DOXORUBICIN	NM_001238;NM_057182	cyclin E1	CCNE1	16036217	
DOXORUBICIN	NM_000610;NM_001001389;NM_001001390;NM_001001391;NM_001001392	CD44 molecule (Indian blood group)	CD44	16705698	
DOXORUBICIN	NM_001130829;NM_001786;NM_033379	cell division cycle 2, G1 to S and G2 to M	CDC2	15870702, 16036217, 16537896, 17320279, 17320279,15141020	
DOXORUBICIN	NM_001790;NM_022809	cell division cycle 25 homolog C (S. pombe)	CDC25C	17320279, 19074854	sensitivity
DOXORUBICIN	NM_001098533;NM_001160367;NM_052987;NM_052988	cyclin-dependent kinase 10	CDK10	16404146	
DOXORUBICIN	NM_001798;NM_052827	cyclin-dependent kinase 2	CDK2	15823547, 16036217	
DOXORUBICIN	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	14601052, 15141020, 15492826, 15601469,	
(following) 15781256, 15823547, 16168113, 16537896,17974990,15601469,15555623,19074854,17682292,17653088,15781256, 16909308, 17079232, 17653088,16705698,16439685, 17682292, 17893511, 17974990, 18269916, 19074854					
DOXORUBICIN	NM_004064	cyclin-dependent kinase inhibitor 1B (p27, Kip1)	CDKN1B	16322899, 16705698, 17893511,16036217, 17935137	
DOXORUBICIN	NM_000077;NM_058195;NM_058197	cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4)	CDKN2A	16705698	
DOXORUBICIN	NM_005194	CCAAT/enhancer binding protein (C/EBP), beta	CEBPB	16001973	
DOXORUBICIN	NM_001042426;NM_001809	centromere protein A	CENPA	15870702	
DOXORUBICIN	NM_001025194;NM_001025195;NM_001266	carboxylesterase 1 (monocyte/macrophage serine esterase 1)	CES1	16001973	
DOXORUBICIN	NM_001127183;NM_001127184;NM_003879	CASP8 and FADD-like apoptosis regulator	CFLAR	14601052,16	
DOXORUBICIN	NM_000492	cystic fibrosis transmembrane conductance regulator (ATP-binding cassette sub-family C, member 7)	CFTR	17762173	
DOXORUBICIN	NM_001114121;NM_001114122;NM_001274	CHK1 checkpoint homolog (S. pombe)	CHEK1	15489221, 15870702, 16036217, 17085670, 17088865, 17088865,17085670, 17320279, 18698031	
DOXORUBICIN	NM_001005735;NM_007194;NM_145862	CHK2 checkpoint homolog (S. pombe)	CHEK2	15489221, 17085670, 17320279	

DOXORUBICIN	NM_001278	conserved helix-loop-helix ubiquitous kinase	CHUK	18463201	
DOXORUBICIN	NM_020313	cytokine induced apoptosis inhibitor 1	CIAPIN 1	18389626	
DOXORUBICIN	NM_013324;NM_145071	cytokine inducible SH2-containing protein	CISH	16044152	
DOXORUBICIN	NM_021101	claudin 1	CLDN1	16404146	
DOXORUBICIN	NM_002956;NM_198240	CAP-GLY domain containing linker protein 1	CLIP1	16404146	
DOXORUBICIN	NM_001294	cleft lip and palate associated transmembrane protein 1	CLPTM 1	16243817	
DOXORUBICIN	NM_001831;NM_203339	clusterin	CLU	16322897	
DOXORUBICIN	NM_030582;NM_130444;NM_130445	collagen, type XVIII, alpha 1	COL18 A1	17627616	
DOXORUBICIN	-	*cytochrome c oxidase II*	COX2	16278810	
DOXORUBICIN	NM_001031847;NM_001876	carnitine palmitoyltransferase 1A (liver)	CPT1A	16283381	
DOXORUBICIN	NM_001079846;NM_004380	CREB binding protein	CREBB P	17498666	
DOXORUBICIN	NM_001142407;NM_001142408;NM_001142417;NM_001142435;NM_003296	cysteine-rich secretory protein 2	CRISP2	16404146	
DOXORUBICIN	NM_000394	crystallin, alpha A	CRYAA	16322897	
DOXORUBICIN	NM_001885	crystallin, alpha B	CRYAB	16322897	
DOXORUBICIN	NM_001897	chondroitin sulfate proteoglycan 4	CSPG4	16404146	
DOXORUBICIN	NM_001901	connective tissue growth factor	CTGF	16579640	
DOXORUBICIN	NM_001012329;NM_020248	catenin, beta interacting protein 1	CTNNB IP1	16322899	
DOXORUBICIN	NM_001332	catenin (cadherin-associated protein), delta 2 (neural plakophilin-related arm-repeat protein)	CTNND 2	16896004	
DOXORUBICIN	NM_001908;NM_147780;NM_147781;NM_147782;NM_147783	cathepsin B	CTSB	16705698, 17378599	
DOXORUBICIN	NM_001909	cathepsin D	CTSD	18566016	
DOXORUBICIN	NM_001911	cathepsin G	CTSG	16458935	
DOXORUBICIN	NM_002993	chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2)	CXCL6	16404146	
DOXORUBICIN	NM_001916	cytochrome c-1	CYC1	16001973	
DOXORUBICIN	NM_018947	cytochrome c, somatic	CYCS	16001973,16705698, 16331251, 16749863, 16868541	
DOXORUBICIN	NM_000499	cytochrome P450, family 1, subfamily A, polypeptide 1	CYP1A 1	15377855	

DOXORUBICIN	NM_000785	cytochrome P450, family 27, subfamily B, polypeptide 1	CYP27B1	17716971	
DOXORUBICIN	NM_000767	cytochrome P450, family 2, subfamily B, polypeptide 6	CYP2B6	16322899	
DOXORUBICIN	NM_001141969;NM_001141970;NM_001350	death-domain associated protein	DAXX	12948851	
DOXORUBICIN	-	-	DDEF1	16404146	
DOXORUBICIN	NM_004083	DNA-damage-inducible transcript 3	DDIT3	16298333, 17912235	
DOXORUBICIN	NM_001134709;NM_003472	DEK oncogene	DEK	16579640	
DOXORUBICIN	NM_004717	diacylglycerol kinase, iota	DGKI	16404146	
DOXORUBICIN	NM_001930;NM_013406;NM_013407	deoxyhypusine synthase	DHPS	16404146	
DOXORUBICIN	NM_019887;NM_138929	diablo homolog (Drosophila)	DIABLO	12948851, 17521628	
DOXORUBICIN	NM_014421	dickkopf homolog 2 (Xenopus laevis)	DKK2	16404146	
DOXORUBICIN	NM_001539	DnaJ (Hsp40) homolog, subfamily A, member 1	DNAJA1	16579640	
DOXORUBICIN	NM_001130823;NM_001379	DNA (cytosine-5-)-methyltransferase 1	DNMT1	17124180	
DOXORUBICIN	NM_001935	dipeptidyl-peptidase 4	DPP4	15753397	
DOXORUBICIN	NM_014208	dentin sialophosphoprotein	DSPP	16404146	
DOXORUBICIN	NM_012145	deoxythymidylate kinase (thymidylate kinase)	DTYMK	18413751	
DOXORUBICIN	NM_005225	E2F transcription factor 1	E2F1	16001973	
DOXORUBICIN	NM_001949	E2F transcription factor 3	E2F3	16896004	
DOXORUBICIN	NM_004092	enoyl Coenzyme A hydratase, short chain, 1, mitochondrial	ECHS1	15492826	
DOXORUBICIN	NM_030796	EGFR-coamplified and overexpressed protein	ECOP	18510171	
DOXORUBICIN	NM_001955	endothelin 1	EDN1	17974986	
DOXORUBICIN	NM_001406	ephrin-B3	EFNB3	16322897	
DOXORUBICIN	NM_001963	epidermal growth factor (beta-urogastrone)	EGF	16969495	
DOXORUBICIN	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	15981280, 16001973, 17938326, 17974986	
DOXORUBICIN	NM_001964	early growth response 1	EGR1	17330857	
DOXORUBICIN	NM_006709;NM_025256	euchromatic histone-lysine N-methyltransferase 2	EHMT2	17124180	
DOXORUBICIN	NM_001412	eukaryotic translation initiation factor 1A, X-linked	EIF1AX	16322899	
DOXORUBICIN	NM_032025	eukaryotic translation initiation factor 2A, 65kDa	EIF2A	16298333	
DOXORUBICIN	NM_004095	eukaryotic translation initiation factor 4E binding protein 1	EIF4EBP1	16322899	
DOXORUBICIN	NM_001429	E1A binding protein p300	EP300	10344722, 17498666,10344722	

DOXORUBICIN	NM_004431	EPH receptor A2	EPHA2	16900372	
DOXORUBICIN	NM_001040458;NM_016442	endoplasmic reticulum aminopeptidase 1	ERAP1	16404146	
DOXORUBICIN	NM_001005862;NM_004448	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)	ERBB2	15486187, 15834928, 16168102, 17010609	
DOXORUBICIN	NM_001005915;NM_001982	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)	ERBB3	16168102	
DOXORUBICIN	NM_001042599;NM_005235	v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)	ERBB4	16896004	
DOXORUBICIN	NM_000125;NM_001122740;NM_001122741;NM_001122742	estrogen receptor 1	ESR1	16322899	
DOXORUBICIN	NM_001040275;NM_001040276;NM_001437	estrogen receptor 2 (ER beta)	ESR2	16322899, 16900372	
DOXORUBICIN	NM_001987	ets variant 6	ETV6	15217836	
DOXORUBICIN	NM_001993	coagulation factor III (thromboplastin, tissue factor)	F3	18246814, 18278454, 18325115	
DOXORUBICIN	NM_000131;NM_019616	coagulation factor VII (serum prothrombin conversion accelerator)	F7	18325115	
DOXORUBICIN	NM_003824	Fas (TNFRSF6)-associated via death domain	FADD	16001973, 16705698, 17970047	
DOXORUBICIN	NM_012306	Fas apoptotic inhibitory molecule 2	FAIM2	16001973	
DOXORUBICIN	NM_000043;NM_152871;NM_152872;NM_152873;NM_152874;NM_152875;NM_152876;NM_152877	Fas (TNF receptor superfamily, member 6)	FAS	15763944, 15763944,15576332,17088865,16705698, 15981920, 17088865, 17404015, 17970047	
DOXORUBICIN	NM_000639	Fas ligand (TNF superfamily, member 6)	FASLG	15763944, 15763944,17088865, 15981920, 17088865	
DOXORUBICIN	NM_000569;NM_001127592;NM_001127593;NM_001127595;NM_001127596	Fc fragment of IgG, low affinity IIIa, receptor (CD16a)	FCGR3A	17852453	
DOXORUBICIN	NM_004462	farnesyl-diphosphate farnesyltransferase 1	FDFT1	16322897	
DOXORUBICIN	NM_001039492;NM_001450;NM_201555;NM_201557	four and a half LIM domains 2	FHL2	17682292	
DOXORUBICIN	NM_001145775;NM_001145776;NM_001145777;NM_004117	FK506 binding protein 5	FKBP5	15571967	
DOXORUBICIN	NM_012181	FK506 binding protein 8, 38kDa	FKBP8	16404146	
DOXORUBICIN	NM_002026;NM_054034;NM_212474;NM_212475;NM_212476;NM_212478;NM_212482	fibronectin 1	FN1	17703109	

DOXORUBICIN	NM_000802;NM_016724;NM_016725;NM_016729;NM_016730;NM_016731	folate receptor 1 (adult)	FOLR1	15634643, 16404146	
DOXORUBICIN	NM_005252	v-fos FBJ murine osteosarcoma viral oncogene homolog	FOS	16900372	
DOXORUBICIN	NM_001454	forkhead box J1	FOXJ1	16044152	
DOXORUBICIN	NM_002015	forkhead box O1	FOXO1	17935137	
DOXORUBICIN	NM_001455;NM_201559	forkhead box O3	FOXO3	17935137	
DOXORUBICIN	NM_000510;NM_001018080	follicle stimulating hormone, beta polypeptide	FSHB	17028438	
DOXORUBICIN	NM_000146	ferritin, light polypeptide	FTL	12644586	
DOXORUBICIN	NM_177478	ferritin mitochondrial	FTMT	12644586	
DOXORUBICIN	NM_002033	fucosyltransferase 4 (alpha (1,3) fucosyltransferase, myeloid-specific)	FUT4	17852453	
DOXORUBICIN	NM_000402;NM_001042351	glucose-6-phosphate dehydrogenase	G6PD	16404146	
DOXORUBICIN	NM_006705	growth arrest and DNA-damage-inducible, gamma	GADD45G	16404146	
DOXORUBICIN	NM_000156;NM_138924	guanidinoacetate N-methyltransferase	GAMT	16896004	
DOXORUBICIN	NM_002046	glyceraldehyde-3-phosphate dehydrogenase	GAPDH	16001973	
DOXORUBICIN	NM_002049	GATA binding protein 1 (globin transcription factor 1)	GATA1	14623254, 17097070	
DOXORUBICIN	NM_001498	glutamate-cysteine ligase, catalytic subunit	GCLC	10900222, 11560771	
DOXORUBICIN	NM_002061	glutamate-cysteine ligase, modifier subunit	GCLM	10900222	
DOXORUBICIN	NM_004864	growth differentiation factor 15	GDF15	16705698	
DOXORUBICIN	NM_001135031;NM_004188	growth factor independent 1B transcription repressor	GFI1B	16322897	
DOXORUBICIN	NM_001145453;NM_005264;NM_145793	GDNF family receptor alpha 1	GFRA1	16896004	
DOXORUBICIN	NM_006708	glyoxalase I	GLO1	16085563	
DOXORUBICIN	NM_000406;NM_001012763	gonadotropin-releasing hormone receptor	GNRHR	17943530	
DOXORUBICIN	NM_000174	glycoprotein IX (platelet)	GP9	16404146	
DOXORUBICIN	NM_000581;NM_201397	glutathione peroxidase 1	GPX1	15473893	
DOXORUBICIN	NM_002093	glycogen synthase kinase 3 beta	GSK3B	17339365	
DOXORUBICIN	NM_145740	glutathione S-transferase alpha 1	GSTA1	16890185	
DOXORUBICIN	NM_001512	glutathione S-transferase alpha 4	GSTA4	18225754	
DOXORUBICIN	NM_000852	glutathione S-transferase pi 1	GSTP1	10900222, 14623254, 15448748, 15946544, 16356834, 16579640,15533597,14623254, 18225754	resistance
DOXORUBICIN	NM_001520	general transcription factor IIIC, polypeptide 1, alpha	GTF3C	16322899	

		220kDa	1		
DOXORUBICIN	NM_016315	GULP, engulfment adaptor PTB domain containing 1	GULP1	16001973	
DOXORUBICIN	NM_002105	H2A histone family, member X	H2AFX	15489221, 15489221,16432175	
DOXORUBICIN	NM_000184	hemoglobin, gamma G	HBG2	17097070	
DOXORUBICIN	NM_001525	hypocretin (orexin) receptor 1	HCRTR1	16404146	
DOXORUBICIN	NM_004964	histone deacetylase 1	HDAC1	17124180	
DOXORUBICIN	NM_000410;NM_139003;NM_139004;NM_139006;NM_139007;NM_139008;NM_139009;NM_139010;NM_139011	hemochromatosis	HFE	16823846	
DOXORUBICIN	NM_000601;NM_001010931;NM_001010932;NM_001010933;NM_001010934	hepatocyte growth factor (hepapoietin A; scatter factor)	HGF	15688034,16	
DOXORUBICIN	NM_001530;NM_181054	hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	HIF1A	16532342, 17498666, 17912235	
DOXORUBICIN	NM_003526	histone cluster 1, H2bc	HIST1H2BC	16322897	
DOXORUBICIN	NM_002123	major histocompatibility complex, class II, DQ beta 1	HLA-DQB1	16322897, 16404146	
DOXORUBICIN	NM_021983	major histocompatibility complex, class II, DR beta 4	HLA-DRB4	16322897	
DOXORUBICIN	NM_015980	HMP19 protein	HMP19	16044152	
DOXORUBICIN	NM_005968;NM_031203	heterogeneous nuclear ribonucleoprotein M	HNRNPM	16928833	
DOXORUBICIN	NM_001130442;NM_005343;NM_176795	v-Ha-ras Harvey rat sarcoma viral oncogene homolog	HRAS	16001973	
DOXORUBICIN	NM_005114	heparan sulfate (glucosamine) 3-O-sulfotransferase 1	HS3ST1	16044152	
DOXORUBICIN	NM_001017963;NM_005348	heat shock protein 90kDa alpha (cytosolic), class A member 1	HSP90AA1	17680992	
DOXORUBICIN	NM_002154	heat shock 70kDa protein 4	HSPA4	16311509	
DOXORUBICIN	NM_005347	heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)	HSPA5	16298333, 17680992	
DOXORUBICIN	NM_006597;NM_153201	heat shock 70kDa protein 8	HSPA8	16579640, 16579640,17680992	
DOXORUBICIN	NM_004134	heat shock 70kDa protein 9 (mortalin)	HSPA9	17680992	
DOXORUBICIN	NM_001540	heat shock 27kDa protein 1	HSPB1	17680992	

DOXORUBICIN	NM_002156;NM_199440	heat shock 60kDa protein 1 (chaperonin)	HSPD1	17680992	
DOXORUBICIN	NM_002775	HtrA serine peptidase 1	HTRA1	16243817	
DOXORUBICIN	NM_031407	HECT, UBA and WWE domain containing 1	HUWE1	16404146	
DOXORUBICIN	NM_000415	islet amyloid polypeptide	IAPP	16001973	
DOXORUBICIN	NM_024013	interferon, alpha 1	IFNA1	17959036	
DOXORUBICIN	NM_000618;NM_001111283;NM_001111284;NM_001111285	insulin-like growth factor 1 (somatomedin C)	IGF1	16740780	
DOXORUBICIN	NM_000875	insulin-like growth factor 1 receptor	IGF1R	16001973	
DOXORUBICIN	NM_001552	insulin-like growth factor binding protein 4	IGFBP4	16896004	
DOXORUBICIN	NM_001556	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta	IKBKB	15899819, 18463201	
DOXORUBICIN	NM_001099856;NM_001099857;NM_001145255;NM_003639	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma	IKBKG	17890907	
DOXORUBICIN	NM_000600	interleukin 6 (interferon, beta 2)	IL6	16001973	
DOXORUBICIN	NM_000584	interleukin 8	IL8	12908082, 15899819, 18510171	
DOXORUBICIN	NM_001137673;NM_004516;NM_012218;NM_017620;NM_153464	interleukin enhancer binding factor 3, 90kDa	ILF3	16322899	
DOXORUBICIN	NM_005544	insulin receptor substrate 1	IRS1	16322899	
DOXORUBICIN	NM_002226;NM_145159	jagged 2	JAG2	16404146	
DOXORUBICIN	-	-	JMJD2B	16896004	
DOXORUBICIN	NM_002228	jun oncogene	JUN	15585644, 15880572, 18645001	
DOXORUBICIN	NM_000238;NM_172056;NM_172057	potassium voltage-gated channel, subfamily H (eag-related), member 2	KCNH2	16086867	
DOXORUBICIN	NM_002242	potassium inwardly-rectifying channel, subfamily J, member 13	KCNJ13	16404146	
DOXORUBICIN	NM_018658;NM_170741;NM_170742	potassium inwardly-rectifying channel, subfamily J, member 16	KCNJ16	16404146	
DOXORUBICIN	NM_002035	3-ketodihydrosphingosine reductase	KDSR	16322897	
DOXORUBICIN	NM_003685	KH-type splicing regulatory protein	KHSRP	16404146	
DOXORUBICIN	NM_020853	KIAA1467	KIAA1467	16896004	
DOXORUBICIN	NM_007054	kinesin family member 3A	KIF3A	16896004	
DOXORUBICIN	NM_016270	Kruppel-like factor 2 (lung)	KLF2	18510171	
DOXORUBICIN	NM_000224;NM_199187	keratin 18	KRT18	16928833	
DOXORUBICIN	NM_002306	lectin, galactoside-binding, soluble, 3	LGALS3	16322897	

DOXORUBICIN	NM_001098268;NM_002312;NM_206937	ligase IV, DNA, ATP-dependent	LIG4	18508926	
DOXORUBICIN	NM_001113546;NM_001113547;NM_016357	LIM domain and actin binding 1	LIMA1	16044152	
DOXORUBICIN	NM_005572;NM_170707;NM_170708	lamin A/C	LMNA	16001973	
DOXORUBICIN	NM_005573	lamin B1	LMNB1	16001973	
DOXORUBICIN	NM_002349	lymphocyte antigen 75	LY75	16404146	
DOXORUBICIN	NM_002358	MAD2 mitotic arrest deficient-like 1 (yeast)	MAD2L1	15870702	
DOXORUBICIN	NM_002755	mitogen-activated protein kinase kinase 1	MAP2K1	17974986	
DOXORUBICIN	NM_030662	mitogen-activated protein kinase kinase 2	MAP2K2	17974986	
DOXORUBICIN	NM_002756;NM_145109	mitogen-activated protein kinase kinase 3	MAP2K3	15870702	
DOXORUBICIN	NM_003010	mitogen-activated protein kinase kinase 4	MAP2K4	15870702, 16001973	
DOXORUBICIN	NM_002758	mitogen-activated protein kinase kinase 6	MAP2K6	15870702	
DOXORUBICIN	NM_003188;NM_145331;NM_145332;NM_145333	mitogen-activated protein kinase kinase kinase 7	MAP3K7	16001973	
DOXORUBICIN	NM_005204	mitogen-activated protein kinase kinase kinase 8	MAP3K8	16322897	
DOXORUBICIN	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	15557793, 16001973, 17526808, 17974986,15557793,18468633, 18468633, 18468633,15557793	
DOXORUBICIN	NM_001315;NM_139012;NM_139013;NM_139014	mitogen-activated protein kinase 14	MAPK14	15494689,16843435, 15557793, 15870702, 16322899, 16843435	
DOXORUBICIN	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	15557793, 16059641, 16928833, 17526808, 17974986,18468633,15557793, 18468633, 18468633,15557793	
DOXORUBICIN	NM_002750;NM_139046;NM_139047;NM_139049	mitogen-activated protein kinase 8	MAPK8	15494689, 15870702, 15880572, 15917298, 15917298,16890185, 16868541, 16890185	
DOXORUBICIN	NM_001135044;NM_002752;NM_139068;NM_139069;NM_139070	mitogen-activated protein kinase 9	MAPK9	15494689, 15557793, 15557793,15585644, 15585644	

DOXORUBICIN	NM_001123066;NM_001123067;NM_005910;NM_016834;NM_016835;NM_016841	microtubule-associated protein tau	MAPT	16896004	
DOXORUBICIN	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	17935137	
DOXORUBICIN	NM_005918	malate dehydrogenase 2, NAD (mitochondrial)	MDH2	16322897	
DOXORUBICIN	NM_001012333;NM_001012334;NM_002391	midkine (neurite growth-promoting factor 2)	MDK	16322897	
DOXORUBICIN	NM_001145336;NM_001145337;NM_001145339;NM_001145340;NM_002392;NM_006878;NM_006879;NM_006881;NM_006882	Mdm2 p53 binding protein homolog (mouse)	MDM2	16001973, 17935137, 17959036, 17959036, 19074854, 17653088	
DOXORUBICIN	NM_015335	mediator complex subunit 13-like	MED13L	16896004	
DOXORUBICIN	NM_001130926;NM_001130927;NM_001130928;NM_005587	myocyte enhancer factor 2A	MEF2A	16001973	
DOXORUBICIN	NM_014791	maternal embryonic leucine zipper kinase	MELK	16896004	
DOXORUBICIN	NM_006838	methionyl aminopeptidase 2	METAP2	16404146	
DOXORUBICIN	NM_024042	meteorin, glial cell differentiation regulator	METRN	16896004	
DOXORUBICIN	NM_001114614;NM_005928	milk fat globule-EGF factor 8 protein	MFGE8	16404146	
DOXORUBICIN	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	16356834	
DOXORUBICIN	NM_005933	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila)	MLL	16322897	
DOXORUBICIN	NM_004529	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 3	MLLT3	16404146	
DOXORUBICIN	NM_000902;NM_007287;NM_007288;NM_007289	membrane metallo-endopeptidase	MME	16997790	
DOXORUBICIN	NM_002421	matrix metallopeptidase 1 (interstitial collagenase)	MMP1	11313874	
DOXORUBICIN	NM_001127891;NM_004530	matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)	MMP2	16458935	
DOXORUBICIN	NM_018135	mitochondrial ribosomal protein S18A	MRPS18A	16404146	
DOXORUBICIN	NM_000179	mutS homolog 6 (E. coli)	MSH6	16404146	
DOXORUBICIN	NM_005950	metallothionein 1G	MT1G	16579640	
DOXORUBICIN	NR_001447;NR_001447;NR_001447;NR_001447;NR_001447;NR_001447	metallothionein 1L (gene/pseudogene)	MT1L	16579640	
DOXORUBICIN	NM_005953	metallothionein 2A	MT2A	16579640	

DOXORUBICIN	NM_000254	5-methyltetrahydrofolate-homocysteine methyltransferase	MTR	16322897	
DOXORUBICIN	NM_014751	metastasis suppressor 1	MTSS1	16243817	
DOXORUBICIN	NM_005115;NM_017458	major vault protein	MVP	17575109	
DOXORUBICIN	NM_002467	v-myc myelocytomatosis viral oncogene homolog (avian)	MYC	15911101, 16001973,11585056, 18606404, 18802399	
DOXORUBICIN	NM_004536;NM_022892	NLR family, apoptosis inhibitory protein	NAIP	11911975, 15911101, 16322899, 17521628	
DOXORUBICIN	NM_002485	nibrin	NBN	15489221	
DOXORUBICIN	NM_004146	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 7, 18kDa	NDUFB7	16404146	
DOXORUBICIN	NM_003998	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	NFKB1	15555623, 15571967, 15870702, 15905586, 16001973, 16322301, 17912235, 18463201	
DOXORUBICIN	NM_001077493;NM_001077494;NM_002502	nuclear factor of kappa light polypeptide gene enhancer in B-cells 2 (p49/p100)	NFKB2	17890907	
DOXORUBICIN	NM_020529	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	NFKBIA	15571967, 15870702, 15899819, 17542780, 17935137, 17935137,15899819,17542780, 18463201	
DOXORUBICIN	NM_002508	nidogen 1	NID1	17703109	
DOXORUBICIN	NM_024522	Na+/K+ transporting ATPase interacting 1	NKAIN1	16896004	
DOXORUBICIN	NM_002511	neuromedin B receptor	NMBR	16404146	
DOXORUBICIN	NM_004741	nucleolar and coiled-body phosphoprotein 1	NOLC1	17129415	
DOXORUBICIN	NM_000625	nitric oxide synthase 2, inducible	NOS2	15695394, 15695394,18463201, 18463201	
DOXORUBICIN	NM_002135;NM_173157	nuclear receptor subfamily 4, group A, member 1	NR4A1	16322897	
DOXORUBICIN	NM_013936	olfactory receptor, family 12, subfamily D, member 2	OR12D2	16404146	
DOXORUBICIN	NM_012369	olfactory receptor, family 2, subfamily F, member 1	OR2F1	16404146	
DOXORUBICIN	NM_000916	oxytocin receptor	OXTR	11313874	
DOXORUBICIN	NM_006025	26 serine protease	P11	16001973	
DOXORUBICIN	NM_012226;NM_016318;NM_170682;NM_170683;NM_174872;NM_174873	purinergic receptor P2X, ligand-gated ion channel, 2	P2RX2	16404146	
DOXORUBICIN	NM_004154;NM_176796;NM_176797;NM_176798	pyrimidinergic receptor P2Y, G-protein coupled, 6	P2RY6	16044152	
DOXORUBICIN	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	15456408, 15557793, 15585644, 15753397,	
(following) 15870702, 15981920, 16311509, 16311509,17651020,16890185,15557793,18071906,15585644,16843435,16962673,15555623,17285121,17935137,17959036,					

16843435, 16890185, 16962673, 17285121, 17339365, 17418594, 17651020, 17935137, 17959036					
DOXORUBICIN	NM_002583	PRKC, apoptosis, WT1, regulator	PAWR	12948851	
DOXORUBICIN	NM_000280;NM_001127612;NM_001604	paired box 6	PAX6	16404146	
DOXORUBICIN	-	-	PCAF	16001973	
DOXORUBICIN	NM_002592;NM_182649	proliferating cell nuclear antigen	PCNA	16322897, 16537896	
DOXORUBICIN	NM_004708	programmed cell death 5	PDCD5	16579640	
DOXORUBICIN	NM_002613;NM_031268	3-phosphoinositide dependent protein kinase-1	PDPK1	16782806	
DOXORUBICIN	NM_002653	paired-like homeodomain 1	PITX1	16404146	
DOXORUBICIN	NM_001145031;NM_002658	plasminogen activator, urokinase	PLAU	12908082, 15557793, 16356834	
DOXORUBICIN	NM_000302	procollagen-lysine 1, 2-oxoglutarate 5-dioxygenase 1	PLOD1	16322899	
DOXORUBICIN	NM_001084	procollagen-lysine, 2-oxoglutarate 5-dioxygenase 3	PLOD3	16322899	
DOXORUBICIN	NM_021127	phorbol-12-myristate-13-acetate-induced protein 1	PMAIP1	17653088	
DOXORUBICIN	NM_021173	polymerase (DNA-directed), delta 4	POLD4	16404146	
DOXORUBICIN	NM_013382	protein-O-mannosyltransferase 2	POMT2	16404146	
DOXORUBICIN	NM_000941	P450 (cytochrome) oxidoreductase	POR	15942634, 16322897	
DOXORUBICIN	NM_006238;NM_177435	peroxisome proliferator-activated receptor delta	PPARD	16404146	
DOXORUBICIN	NM_005155;NM_138717	palmitoyl-protein thioesterase 2	PPT2	16404146	
DOXORUBICIN	NM_002730;NM_207518	protein kinase, cAMP-dependent, catalytic, alpha	PRKACA	16404146	
DOXORUBICIN	NM_002737	protein kinase C, alpha	PRKCA	16087181, 16579994	
DOXORUBICIN	NM_006254;NM_212539	protein kinase C, delta	PRKCD	15917298	
DOXORUBICIN	NM_001081640;NM_006904	protein kinase, DNA-activated, catalytic polypeptide	PRKDC	18508926	
DOXORUBICIN	NM_000948	prolactin	PRL	18681966	
DOXORUBICIN	NM_000311;NM_001080121;NM_001080122;NM_001080123;NM_183079	prion protein	PRNP	15386405	
DOXORUBICIN	NM_000312	protein C (inactivator of coagulation factors Va and VIIIa)	PROC	17172434	
DOXORUBICIN	NM_006404	protein C receptor, endothelial (EPCR)	PROCR	17172434	
DOXORUBICIN	NM_001143937;NM_002786;NM_148976	proteasome (prosome, macropain) subunit, alpha type, 1	PSMA1	17346995	
DOXORUBICIN	NM_002787	proteasome (prosome, macropain) subunit, alpha type, 2	PSMA2	17346995	
DOXORUBICIN	NM_002788;NM_152132	proteasome (prosome, macropain) subunit, alpha type, 3	PSMA3	17346995	

DOXORUBICIN	NM_001102667;NM_001102668;NM_002789	proteasome (prosome, macropain) subunit, alpha type, 4	PSMA4	17346995	
DOXORUBICIN	NM_002790	proteasome (prosome, macropain) subunit, alpha type, 5	PSMA5	17346995	
DOXORUBICIN	NM_002791	proteasome (prosome, macropain) subunit, alpha type, 6	PSMA6	17346995	
DOXORUBICIN	NM_002792	proteasome (prosome, macropain) subunit, alpha type, 7	PSMA7	17346995	
DOXORUBICIN	NM_002794	proteasome (prosome, macropain) subunit, beta type, 2	PSMB2	17346995	
DOXORUBICIN	NM_002795	proteasome (prosome, macropain) subunit, beta type, 3	PSMB3	17346995	
DOXORUBICIN	NM_002799	proteasome (prosome, macropain) subunit, beta type, 7	PSMB7	17346995	
DOXORUBICIN	NM_000314	phosphatase and tensin homolog	PTEN	11707646, 15548710, 16438844, 17330857, 17359293, 17935137, 17935137,16438844,17359293	
DOXORUBICIN	NM_000963	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PTGS2	15501994, 16127422, 18498876	
DOXORUBICIN	NM_005607;NM_153831	PTK2 protein tyrosine kinase 2	PTK2	15870702, 16168102	
DOXORUBICIN	NM_004103;NM_173174;NM_173175;NM_173176	PTK2B protein tyrosine kinase 2 beta	PTK2B	16168102	
DOXORUBICIN	NM_006264;NM_080683;NM_080684;NM_080685	protein tyrosine phosphatase, non-receptor type 13 (APO-1/CD95 (Fas)-associated phosphatase)	PTPN13	16001973	
DOXORUBICIN	NM_001161440;NM_002842	protein tyrosine phosphatase, receptor type, H	PTPRH	16044152	
DOXORUBICIN	NM_002875;NM_133487	RAD51 homolog (RecA homolog, E. coli) (S. cerevisiae)	RAD51	10344722, 17351394	
DOXORUBICIN	NM_006788	ralA binding protein 1	RALBP1	15386349, 15950949, 16087181, 16579994, 17273774	resistance
DOXORUBICIN	NM_005855	receptor (G protein-coupled) activity modifying protein 1	RAMP1	16896004	
DOXORUBICIN	NM_000965;NM_016152	retinoic acid receptor, beta	RARB	17608728	
DOXORUBICIN	NM_000321	retinoblastoma 1	RB1	15141020, 16537896	
DOXORUBICIN	NM_002895;NM_183404	retinoblastoma-like 1 (p107)	RBL1	16537896	
DOXORUBICIN	NM_005611	retinoblastoma-like 2 (p130)	RBL2	15585644, 16537896	
DOXORUBICIN	NM_001145547;NM_032905	RNA binding motif protein 17	RBM17	16061639	resistance
DOXORUBICIN	NM_001008710;NM_001008711;NM_001008712;NM_006867	RNA binding protein with multiple splicing	RBPMS	16404146	

DOXORUBICIN	NM_002908	v-rel reticuloendotheliosis viral oncogene homolog (avian)	REL	15870702, 16404146, 17890907	
DOXORUBICIN	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	15555623, 15571967, 15823547, 15899819,	
(following) 15905586, 15911101, 16322301, 17097285, 17097285,15870702, 17542780, 17890907, 18269916, 18463201, 18463201,17542780					
DOXORUBICIN	NM_006509	v-rel reticuloendotheliosis viral oncogene homolog B	RELB	17890907	
DOXORUBICIN	NM_002927;NM_144766	regulator of G-protein signaling 13	RGS13	16404146	
DOXORUBICIN	NM_016321	Rh family, C glycoprotein	RHCG	16404146	
DOXORUBICIN	NM_002944	c-ros oncogene 1 , receptor tyrosine kinase	ROS1	16001973	
DOXORUBICIN	NM_001034	ribonucleotide reductase M2 polypeptide	RRM2	16896004	
DOXORUBICIN	NM_001001890;NM_001122607;NM_001754	runt-related transcription factor 1	RUNX1	15217836	
DOXORUBICIN	NM_001031680;NM_004350	runt-related transcription factor 3	RUNX3	15756676	
DOXORUBICIN	NM_002970	spermidine/spermine N1-acetyltransferase 1	SAT1	16322897	
DOXORUBICIN	NM_001039	sodium channel, nonvoltage-gated 1, gamma	SCNN1G	15564131	
DOXORUBICIN	NM_020974	signal peptide, CUB domain, EGF-like 2	SCUBE2	16896004	
DOXORUBICIN	NM_004892	SEC22 vesicle trafficking protein homolog B (S. cerevisiae)	SEC22B	16404146	
DOXORUBICIN	NM_000602	serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1	SERPINE1	15870702, 16705698	
DOXORUBICIN	NM_001235	serpin peptidase inhibitor, clade H (heat shock protein 47), member 1, (collagen binding protein 1)	SERPINH1	17680992	
DOXORUBICIN	NM_005983;NM_032637	S-phase kinase-associated protein 2 (p45)	SKP2	17893511	
DOXORUBICIN	NM_033125	solute carrier family 22 (organic cation/carnitine transporter), member 16	SLC22A16	15963465	
DOXORUBICIN	NM_003060	solute carrier family 22 (organic cation/carnitine transporter), member 5	SLC22A5	16283381	
DOXORUBICIN	NM_001078174;NM_001078175;NM_001078176;NM_001078177;NM_004955	solute carrier family 29 (nucleoside transporters), member 1	SLC29A1	18452103	
DOXORUBICIN	NM_018976	solute carrier family 38, member 2	SLC38A2	16044152	
DOXORUBICIN	NM_000453	solute carrier family 5 (sodium iodide symporter), member 5	SLC5A5	15671536	
DOXORUBICIN	NM_003047	solute carrier family 9 (sodium/hydrogen exchanger),	SLC9A	15729714	

		member 1	1		
DOXORUBICIN	NM_003062	slit homolog 3 (Drosophila)	SLIT3	16404146	
DOXORUBICIN	NM_001003652;NM_001135937;NM_005901	SMAD family member 2	SMAD2	18606404	
DOXORUBICIN	NM_001145102;NM_001145103;NM_001145104;NM_005902	SMAD family member 3	SMAD3	18606404	
DOXORUBICIN	NM_005359	SMAD family member 4	SMAD4	18606404	
DOXORUBICIN	NM_005904	SMAD family member 7	SMAD7	18606404	
DOXORUBICIN	NM_006306	structural maintenance of chromosomes 1A	SMC1A	15489221	
DOXORUBICIN	NM_000454	superoxide dismutase 1, soluble	SOD1	16579640	
DOXORUBICIN	NM_000636;NM_001024465;NM_001024466	superoxide dismutase 2, mitochondrial	SOD2	14660625,10969820, 18384434	
DOXORUBICIN	NM_005633	son of sevenless homolog 1 (Drosophila)	SOS1	16001973	
DOXORUBICIN	NM_003109;NM_138473	Sp1 transcription factor	SP1	17108358, 17124180	
DOXORUBICIN	NM_003118	secreted protein, acidic, cysteine-rich (osteonectin)	SPARC	15870702	
DOXORUBICIN	NM_020126	sphingosine kinase 2	SPHK2	17974990	
DOXORUBICIN	NM_003130;NM_198901	sorcin	SRI	18423116	
DOXORUBICIN	NM_003132	spermidine synthase	SRM	16322899	
DOXORUBICIN	NM_017857	slingshot homolog 3 (Drosophila)	SSH3	16404146	
DOXORUBICIN	NM_021978	suppression of tumorigenicity 14 (colon carcinoma)	ST14	16322899	
DOXORUBICIN	NM_007315;NM_139266	signal transducer and activator of transcription 1, 91kDa	STAT1	16001973, 17072862	
DOXORUBICIN	NM_005419	signal transducer and activator of transcription 2, 113kDa	STAT2	16001973	
DOXORUBICIN	NM_003150;NM_139276;NM_213662	signal transducer and activator of transcription 3 (acute-phase response factor)	STAT3	16001973, 17920763	
DOXORUBICIN	NM_013233	serine threonine kinase 39 (STE20/SPS1 homolog, yeast)	STK39	16322899	
DOXORUBICIN	NM_001145454;NM_005563;NM_203399;NM_203401	stathmin 1	STMN1	16458935	
DOXORUBICIN	NM_004177	syntaxin 3	STX3	16322897	
DOXORUBICIN	NM_001001522;NM_003186	transgelin	TAGLN	15870702	
DOXORUBICIN	NM_001136139;NM_003200	transcription factor 3 (E2A immunoglobulin enhancer binding factors E12/E47)	TCF3	16886622	
DOXORUBICIN	NM_198253;NM_198255	telomerase reverse transcriptase	TERT	16077987, 18396642, 18560228	
DOXORUBICIN	NM_003225	trefoil factor 1	TFF1	16579640	
DOXORUBICIN	NM_000660	transforming growth factor, beta 1	TGFB1	17418594, 18606404	

DOXORUBICIN	NM_004613;NM_198951	transglutaminase 2 (C polypeptide, protein-glutamine-gamma-glutamyltransferase)	TGM2	15870702, 17073438	
DOXORUBICIN	NM_000361	thrombomodulin	THBD	17172434	
DOXORUBICIN	NM_003246	thrombospondin 1	THBS1	16962673	
DOXORUBICIN	NM_018271	threonine synthase-like 2 (S. cerevisiae)	THNSL 2	16896004	
DOXORUBICIN	NM_022037;NM_022173	TIA1 cytotoxic granule-associated RNA binding protein	TIA1	16404146	
DOXORUBICIN	NM_021025	T-cell leukemia homeobox 3	TLX3	16404146	
DOXORUBICIN	NM_021109	thymosin beta 4, X-linked	TMSB4 X	16364925	
DOXORUBICIN	NM_000594	tumor necrosis factor (TNF superfamily, member 2)	TNF	12908082, 15823547, 15899819, 16001973, 17651020	
DOXORUBICIN	NM_003844	tumor necrosis factor receptor superfamily, member 10a	TNFRSF10A	16098063,17437844, 16364925, 17437844, 17437844,15897917	
DOXORUBICIN	NM_003842;NM_147187	tumor necrosis factor receptor superfamily, member 10b	TNFRSF10B	16364925, 17922852,15897917, 17922852,16098063, 17922852,16705698	
DOXORUBICIN	NM_001065	tumor necrosis factor receptor superfamily, member 1A	TNFRSF1A	17651020	
DOXORUBICIN	NM_001066	tumor necrosis factor receptor superfamily, member 1B	TNFRSF1B	17651020	
DOXORUBICIN	NM_001039664;NM_003790;NM_148965;NM_148966;NM_148967;NM_148970	tumor necrosis factor receptor superfamily, member 25	TNFRSF25	16705698	
DOXORUBICIN	NM_003810	tumor necrosis factor (ligand) superfamily, member 10	TNFSF10	16364925, 19106633	
DOXORUBICIN	NM_014765	translocase of outer mitochondrial membrane 20 homolog (yeast)	TOMM20	16322897	
DOXORUBICIN	NM_001067	topoisomerase (DNA) II alpha 170kDa	TOP2A	11470519, 15239142, 15486187, 15753397, 15765123, 16969495, 17351394	
DOXORUBICIN	NM_001068	topoisomerase (DNA) II beta 180kDa	TOP2B	16239602, 16957942	
DOXORUBICIN	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	15141020,17124180, 15489221, 15578696,	
(following) 15671536,19106633, 15763944, 15781256, 15823547, 15823547,15601469,16211088, 15939500, 16001973,16404146,15939500,17959036, 16168113, 16432175, 16537896,15781256,17959036,17339365,17912235,16108013,10969820,12082016,15555623,15601469,17285121,19074854,17088865,15763944,15671536, 16826403, 17079232, 17085670, 17088865, 17124180, 17285121, 17369602,15578696, 17555331, 17608641, 17653088, 17682292, 17893511, 17912235, 17959036, 18269916, 18510171,					

18698031, 19074854, 19106633					
DOXORUBICIN	NM_001126240;NM_001126241;NM_001126242;NM_005427	tumor protein p73	TP73	17716971	
DOXORUBICIN	NM_000365;NM_001159287	triosephosphate isomerase 1	TPI1	18309519	
DOXORUBICIN	NM_016292	TNF receptor-associated protein 1	TRAP1	17680992	
DOXORUBICIN	NM_001656;NM_033227;NM_033228	tripartite motif-containing 23	TRIM23	16404146	
DOXORUBICIN	NM_005762	tripartite motif-containing 28	TRIM28	17079232	
DOXORUBICIN	NM_001003827;NM_021616;NM_130389;NM_130390	tripartite motif-containing 34	TRIM34	16404146	
DOXORUBICIN	-	-	TRP53	16013437	
DOXORUBICIN	NM_000370	tocopherol (alpha) transfer protein	TTPA	16404146	
DOXORUBICIN	NM_006000	tubulin, alpha 4a	TUBA4A	16322897	
DOXORUBICIN	NM_178014	tubulin, beta	TUBB	16579640	
DOXORUBICIN	NM_006087	tubulin, beta 4	TUBB4	16322897	
DOXORUBICIN	NM_001071	thymidylate synthetase	TYMS	10482907, 16168113	
DOXORUBICIN	NM_003358	UDP-glucose ceramide glucosyltransferase	UGCG	16404146, 18245173	
DOXORUBICIN	NM_021139	UDP glucuronosyltransferase 2 family, polypeptide B4	UGT2B4	16404146	
DOXORUBICIN	NM_003364;NM_181597	uridine phosphorylase 1	UPP1	18510171	
DOXORUBICIN	NM_006004	ubiquinol-cytochrome c reductase hinge protein	UQCRH	18510171	
DOXORUBICIN	NM_000376;NM_001017535	vitamin D (1,25- dihydroxyvitamin D3) receptor	VDR	17716971	
DOXORUBICIN	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	16900372, 17431384, 17498666, 17627616, 17627616,17498666, 17912235, 18494554	
DOXORUBICIN	NM_001167	X-linked inhibitor of apoptosis	XIAP	11911975, 11911975,16211302, 12948851, 14501052,15897917, 15359644, 15911101, 17521628, 18071906	
DOXORUBICIN	NM_006887	zinc finger protein 36, C3H type-like 2	ZFP36L2	16322897	
DOXORUBICIN	NM_022470;NM_152240	zinc finger, matrin type 3	ZMAT3	16439685	
DOXORUBICIN	NM_003453;NM_197968	zinc finger, MYM-type 2	ZMYM2	16579640	
DOXORUBICIN	NM_006963	zinc finger protein 22 (KOX 15)	ZNF22	16404146	

DOXORUBICIN	NM_024762	zinc finger protein 552	ZNF552	16896004	
EPIRUBICIN	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	12576456	resistance
EPIRUBICIN	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	12576456, 12657726	resistance
EPIRUBICIN	NM_004827	ATP-binding cassette, sub-family G (WHITE), member 2	ABCG2	12576456	resistance
EPIRUBICIN	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	14503796	
EPIRUBICIN	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	16188142	resistance
EPIRUBICIN	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	14503796, 15996160	death pathway
EPIRUBICIN	NM_001270	chromodomain helicase DNA binding protein 1	CHD1	-	
EPIRUBICIN	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	18768436	
EPIRUBICIN	NM_001005862;NM_004448	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)	ERBB2	18768436	
EPIRUBICIN	NM_001005915;NM_001982	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)	ERBB3	18768436	
EPIRUBICIN	NM_022110	FK506 binding protein like	FKBPL	14503796	
EPIRUBICIN	NM_005980	S100 calcium binding protein P	S100P	18636193	
EPIRUBICIN	NM_000636;NM_001024465;NM_001024466	superoxide dismutase 2, mitochondrial	SOD2	9569045	
EPIRUBICIN	NM_001067	topoisomerase (DNA) II alpha 170kDa	TOP2A	18465341	target
MITOXANTRONE	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	15239124	resistance
MITOXANTRONE	NM_004827	ATP-binding cassette, sub-family G (WHITE), member 2	ABCG2	15239124, 15640379, 15695404, 15703302, 15875186,17032904, 16636798, 17032904	resistance
MITOXANTRONE	NM_130847	angiomotin like 1	AMOTL1	16044152	
MITOXANTRONE	NM_001166	baculoviral IAP repeat-containing 2	BIRC2	15359644	
MITOXANTRONE	NM_001165;NM_182962	baculoviral IAP repeat-containing 3	BIRC3	12948851	
MITOXANTRONE	-	-	C4ORF28	16044152	
MITOXANTRONE	NM_007359	cancer susceptibility candidate 3	CASC3	16044152	
MITOXANTRONE	NM_032982;NM_032983	caspase 2, apoptosis-related cysteine peptidase	CASP2	14757846	

MITOXANTRONE	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	12948851	
MITOXANTRONE	NM_001226;NM_032992	caspase 6, apoptosis-related cysteine peptidase	CASP6	12948851	
MITOXANTRONE	NM_001227;NM_033338;NM_033339;NM_033340	caspase 7, apoptosis-related cysteine peptidase	CASP7	12948851	
MITOXANTRONE	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	12948851	
MITOXANTRONE	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	12948851	
MITOXANTRONE	NM_030809	cysteine-serine-rich nuclear protein 2	CSRNP2	16044152	
MITOXANTRONE	NM_001141969;NM_001141970;NM_001350	death-domain associated protein	DAXX	12948851	
MITOXANTRONE	NM_019887;NM_138929	diablo homolog (Drosophila)	DIABLO	12948851	
MITOXANTRONE	NM_001144774;NM_001144775;NM_001144776;NM_001144777;NM_021952	ELAV (embryonic lethal, abnormal vision, Drosophila)-like 4 (Hu antigen D)	ELAVL4	16044152	
MITOXANTRONE	NM_021814	ELOVL family member 5, elongation of long chain fatty acids (FEN1/Elo2, SUR4/Elo3-like, yeast)	ELOVL5	16044152	
MITOXANTRONE	NM_001135554;NM_001135555;NM_001431	erythrocyte membrane protein band 4.1-like 2	EPB41L2	16044152	
MITOXANTRONE	NM_000875	insulin-like growth factor 1 receptor	IGF1R	15499378	
MITOXANTRONE	NM_024337	iroquois homeobox 1	IRX1	16044152	
MITOXANTRONE	NM_000426;NM_001079823	laminin, alpha 2	LAMA2	16044152	
MITOXANTRONE	NM_001143944;NM_181336	LEM domain containing 2	LEMD2	16044152	
MITOXANTRONE	NM_001161572;NM_001161573;NM_001161574;NM_012323;NM_152878	v-maf musculoaponeurotic fibrosarcoma oncogene homolog F (avian)	MAFF	16044152	
MITOXANTRONE	NM_001145336;NM_001145337;NM_001145339;NM_001145340;NM_002392;NM_006878;NM_006879;NM_006881;NM_006882	Mdm2 p53 binding protein homolog (mouse)	MDM2	17575151	variant allelic / resistance
MITOXANTRONE	NM_002583	PRKC, apoptosis, WT1, regulator	PAWR	12948851	
MITOXANTRONE	NM_000965;NM_016152	retinoic acid receptor, beta	RARB	17608728	altered by mitox
MITOXANTRONE	NM_002890;NM_022650	RAS p21 protein activator (GTPase activating protein) 1	RASA1	16044152	
MITOXANTRONE	NM_001145547;NM_032905	RNA binding motif protein 17	RBM17	16061639	resistance
MITOXANTRONE	NM_021244	Ras-related GTP binding D	RRAGD	16044152	

MITOXANTRONE	NM_003014	secreted frizzled-related protein 4	SFRP4	16044152	
MITOXANTRONE	NM_032379;NM_032943;NM_206927;NM_206928;NM_206929;NM_206930	synaptotagmin-like 2	SYTL2	16044152	
MITOXANTRONE	NM_145274	transmembrane protein 99	TMEM99	16044152	
MITOXANTRONE	NM_001067	topoisomerase (DNA) II alpha 170kDa	TOP2A	-	target
MITOXANTRONE	NM_001167	X-linked inhibitor of apoptosis	XIAP	12948851, 15359644	
BLEOMYCIN	NM_001166	baculoviral IAP repeat-containing 2	BIRC2	10815900	
BLEOMYCIN	NM_000386	bleomycin hydrolase	BLMH	12082022	resistance
BLEOMYCIN	NM_001752	catalase	CAT	10751631	unrelated
BLEOMYCIN	NM_000234	ligase I, DNA, ATP-dependent	LIG1	-	unrelated
BLEOMYCIN	NM_002311;NM_013975	ligase III, DNA, ATP-dependent	LIG3	-	resistance
BLEOMYCIN	NM_000963	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PTGS2	18695918	
BLEOMYCIN	NM_003745	suppressor of cytokine signaling 1	SOCS1	17374387	resistance
BLEOMYCIN	NM_006297	X-ray repair complementing defective repair in Chinese hamster cells 1	XRCC1	12082022	resistance
BLEOMYCIN	NM_021141	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining)	XRCC5	12384553	
MITOMYCIN	NM_000691;NM_001135167;NM_001135168	aldehyde dehydrogenase 3 family, memberA1	ALDH3A1	15905174	resistance
MITOMYCIN	NM_000484;NM_001136016;NM_001136129;NM_001136130;NM_001136131;NM_201413;NM_201414	amyloid beta (A4) precursor protein	APP	12760830	
MITOMYCIN	NM_001675;NM_182810	activating transcription factor 4 (tax-responsive enhancer element B67)	ATF4	12760830	
MITOMYCIN	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	15793875	
MITOMYCIN	NM_001202;NM_130850;NM_130851	bone morphogenetic protein 4	BMP4	12760830	
MITOMYCIN	NM_031966	cyclin B1	CCNB1	12760830	
MITOMYCIN	NM_000611;NM_001127223;NM_001127225;NM_001127226;NM_001127227;NM_203329;NM_203330;NM_203331	CD59 molecule, complement regulatory protein	CD59	17045307	
MITOMYCIN	NM_001785	cytidine deaminase	CDA	18728667	
MITOMYCIN	NM_001964	early growth response 1	EGR1	12760830	

MITOMYCIN	NM_004431	EPH receptor A2	EPHA2	12760830	
MITOMYCIN	-	-	GRP58	-	sensitivity
MITOMYCIN	NM_000852	glutathione S-transferase pi 1	GSTP1	15239142	resistance
MITOMYCIN	NM_002117	major histocompatibility complex, class I, C	HLA-C	12760830	
MITOMYCIN	NM_000234	ligase I, DNA, ATP-dependent	LIG1	12760830	
MITOMYCIN	NM_012325	microtubule-associated protein, RP/EB family, member 1	MAPRE1	12760830	
MITOMYCIN	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	16039682	sensitivity
MITOMYCIN	NM_004995	matrix metallopeptidase 14 (membrane-inserted)	MMP14	12760830	
MITOMYCIN	NM_002505;NM_021705	nuclear transcription factor Y, alpha	NFYA	12760830	
MITOMYCIN	NM_000903;NM_001025433;NM_001025434	NAD(P)H dehydrogenase, quinone 1	NQO1	15239142	drug activation
MITOMYCIN	NM_000941	P450 (cytochrome) oxidoreductase	POR	15239142	drug activation
MITOMYCIN	NM_000311;NM_001080121;NM_001080122;NM_001080123;NM_183079	prion protein	PRNP	12760830	
MITOMYCIN	NM_000963	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PTGS2	15793875	
MITOMYCIN	NM_000321	retinoblastoma 1	RB1	15617745	
MITOMYCIN	NM_002893	retinoblastoma binding protein 7	RBBP7	12760830	
MITOMYCIN	NM_002916;NM_181573	replication factor C (activator 1) 4, 37kDa	RFC4	12760830	
MITOMYCIN	NM_001006	ribosomal protein S3A	RPS3A	12760830	
MITOMYCIN	NM_001031680;NM_004350	runt-related transcription factor 3	RUNX3	15756676	
MITOMYCIN	NM_006713	SUB1 homolog (S. cerevisiae)	SUB1	12760830	
MITOMYCIN	NM_198253;NM_198255	telomerase reverse transcriptase	TERT	-	resistance
MITOMYCIN	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	12082016	sensitivity
MITOMYCIN	NM_001113755;NM_001113756;NM_001953	thymidine phosphorylase	TYMP	18728667	
HYDROXYUREA	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	16005713	death pathway
HYDROXYUREA	-	-	C13ORF34	17374387	
HYDROXYUREA	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	16005713	death pathway
HYDROXYUREA	NM_001237	cyclin A2	CCNA2	11468187	

HYDROXYUREA	NM_031966	cyclin B1	CCNB1	11468187	
HYDROXYUREA	NM_053056	cyclin D1	CCND1	11468187	altered by HU
HYDROXYUREA	NM_001759	cyclin D2	CCND2	11468187	altered by HU
HYDROXYUREA	NM_001136017;NM_001136125;NM_001136126;NM_001760	cyclin D3	CCND3	11468187	altered by HU
HYDROXYUREA	NM_001238;NM_057182	cyclin E1	CCNE1	11468187	
HYDROXYUREA	NM_004060;NM_199246	cyclin G1	CCNG1	16005713	altered by HU
HYDROXYUREA	NM_001790;NM_022809	cell division cycle 25 homolog C (S. pombe)	CDC25C	19074854	
HYDROXYUREA	NM_018101	cell division cycle associated 8	CDCA8	17374387	
HYDROXYUREA	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	16005713	resistance
HYDROXYUREA	NM_001827	CDC28 protein kinase regulatory subunit 2	CKS2	17374387	
HYDROXYUREA	NM_000114;NM_207032;NM_207033;NM_207034	endothelin 3	EDN3	15020278	altered by HU
HYDROXYUREA	NM_000043;NM_152871;NM_152872;NM_152873;NM_152874;NM_152875;NM_152876;NM_152877	Fas (TNF receptor superfamily, member 6)	FAS	16005713	altered by HU
HYDROXYUREA	NM_002266	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)	KPNA2	17374387	
HYDROXYUREA	NM_003981;NM_199413;NM_199414	protein regulator of cytokinesis 1	PRC1	17374387	
HYDROXYUREA	NM_001005290;NM_001032290;NM_001032291;NM_032636	proline/serine-rich coiled-coil 1	PSRC1	17374387	
HYDROXYUREA	NM_001033	ribonucleotide reductase M1	RRM1	-	unrelated
HYDROXYUREA	NM_001034	ribonucleotide reductase M2 polypeptide	RRM2	-	resistance
HYDROXYUREA	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	16005713	death pathway
HYDROXYUREA	NM_007019;NM_181799;NM_181800;NM_181801;NM_181802;NM_181803	ubiquitin-conjugating enzyme E2C	UBE2C	17374387	
CAMPTOTHECIN	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	10692111	resistance
CAMPTOTHECIN	NM_198576	agrin	AGRN	17374387	
CAMPTOTHECIN	NM_000477	albumin	ALB	10803926, 17378599	used as a drug carrier

CAMPTOTHECIN	NM_001153	annexin A4	ANXA4	17374387	
CAMPTOTHECIN	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	15665116, 17555331	
CAMPTOTHECIN	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	10692111	
CAMPTOTHECIN	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	16061681	
CAMPTOTHECIN	NM_007294;NM_007295;NM_007296;NM_007297;NM_007298;NM_007299;NM_007300;NM_007302;NM_007303;NM_007304;NM_007305	breast cancer 1, early onset	BRCA1	10344722	
CAMPTOTHECIN	NM_000059	breast cancer 2, early onset	BRCA2	10344722	
CAMPTOTHECIN	NM_001130849;NM_001130850;NM_016289	calcium binding protein 39	CAB39	17374387	
CAMPTOTHECIN	NM_032982;NM_032983	caspase 2, apoptosis-related cysteine peptidase	CASP2	14757846	
CAMPTOTHECIN	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	16273314,16962673, 16962673	
CAMPTOTHECIN	NM_031966	cyclin B1	CCNB1	16061681	
CAMPTOTHECIN	NM_001798;NM_052827	cyclin-dependent kinase 2	CDK2	15141020	
CAMPTOTHECIN	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	11741290, 9673414,17555331	
CAMPTOTHECIN	NM_001024912;NM_001712	carcinoembryonic antigen-related cell adhesion molecule 1 (biliary glycoprotein)	CEACAM1	17374387	
CAMPTOTHECIN	NM_005760	CCAAT/enhancer binding protein (C/EBP), zeta	CEBPZ	17374387	
CAMPTOTHECIN	NM_001908;NM_147780;NM_147781;NM_147782;NM_147783	cathepsin B	CTSB	17378599	
CAMPTOTHECIN	NM_001007277;NM_004879	etoposide induced 2.4 mRNA	EI24	17374387	
CAMPTOTHECIN	NM_001429	E1A binding protein p300	EP300	10344722	
CAMPTOTHECIN	NM_014805	EPM2A (laforin) interacting protein 1	EPM2AIP1	17374387	
CAMPTOTHECIN	NM_004110;NM_024417	ferredoxin reductase	FDXR	17374387	
CAMPTOTHECIN	NM_000852	glutathione S-transferase pi 1	GSTP1	15500952, 15500952,14732228	
CAMPTOTHECIN	NM_001077442;NM_001077443;NM_004500;NM_031314	heterogeneous nuclear ribonucleoprotein C (C1/C2)	HNRNPC	16960656	
CAMPTOTHECIN	NM_000576	interleukin 1, beta	IL1B	16356833	
CAMPTOTHECIN	NM_000584	interleukin 8	IL8	16356833	
CAMPTOTHECIN	NM_002228	jun oncogene	JUN	15585644	
CAMPTOTHECIN	NM_002756;NM_145109	mitogen-activated protein kinase kinase 3	MAP2K3	17374387	

CAMPTOTHECIN	NM_005923	mitogen-activated protein kinase kinase kinase 5	MAP3K5	17374387	
CAMPTOTHECIN	NM_001135044;NM_002752;NM_139068;NM_139069;NM_139070	mitogen-activated protein kinase 9	MAPK9	15585644	
CAMPTOTHECIN	NM_001145336;NM_001145337;NM_001145339;NM_001145340;NM_002392;NM_006878;NM_006879;NM_006881;NM_006882	Mdm2 p53 binding protein homolog (mouse)	MDM2	17555331	
CAMPTOTHECIN	NM_001004720;NM_001004722;NM_003581	NCK adaptor protein 2	NCK2	17374387	
CAMPTOTHECIN	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	11741290,15585644,16962673, 15585644, 16962673	
CAMPTOTHECIN	NM_004073	polo-like kinase 3 (Drosophila)	PLK3	17374387	
CAMPTOTHECIN	NM_032192;NM_181505	protein phosphatase 1, regulatory (inhibitor) subunit 1B	PPP1R1B	16061638	
CAMPTOTHECIN	NM_003981;NM_199413;NM_199414	protein regulator of cytokinesis 1	PRC1	17374387	
CAMPTOTHECIN	NM_002875;NM_133487	RAD51 homolog (RecA homolog, E. coli) (S. cerevisiae)	RAD51	10344722	
CAMPTOTHECIN	NM_000321	retinoblastoma 1	RB1	14704340, 15585644	
CAMPTOTHECIN	NM_002895;NM_183404	retinoblastoma-like 1 (p107)	RBL1	15585644	
CAMPTOTHECIN	NM_005611	retinoblastoma-like 2 (p130)	RBL2	15585644	
CAMPTOTHECIN	NM_001006946;NM_002997	syndecan 1	SDC1	17374387	
CAMPTOTHECIN	NM_000593	transporter 1, ATP-binding cassette, sub-family B (MDR/TAP)	TAP1	17374387	
CAMPTOTHECIN	NM_014604	Tax1 (human T-cell leukemia virus type I) binding protein 3	TAX1BP3	17374387	
CAMPTOTHECIN	NM_003246	thrombospondin 1	THBS1	16962673	
CAMPTOTHECIN	NM_003811	tumor necrosis factor (ligand) superfamily, member 9	TNFSF9	17374387	
CAMPTOTHECIN	NM_003286	topoisomerase (DNA) I	TOP1	-	
CAMPTOTHECIN	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	10692111, 11741290, 17555331, 9673414, 9673414,17555331,12082016	
CAMPTOTHECIN	NM_004881;NM_147184	tumor protein p53 inducible protein 3	TP53I3	17374387	

CAMPTOTHECIN	NR_015381;NR_015381;NR_015381;NR_015381;NR_015381;NR_015381;NR_015381;NR_015381	TP53 target 1 (non-protein coding)	TP53TG1	17374387	
CAMPTOTHECIN	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	16356833	
CAMPTOTHECIN	NM_001167	X-linked inhibitor of apoptosis	XIAP	16061681, 16211302	
TOPOTECAN	NM_004827	ATP-binding cassette, sub-family G (WHITE), member 2	ABCG2	15695404, 15875186,17032904, 17032904	resistance
TOPOTECAN	NM_001668;NM_178426;NM_178427	aryl hydrocarbon receptor nuclear translocator	ARNT	15930297	
TOPOTECAN	NM_002105	H2A histone family, member X	H2AFX	16432175	
TOPOTECAN	NM_001530;NM_181054	hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	HIF1A	15930297	target
TOPOTECAN	NM_003286	topoisomerase (DNA) I	TOP1	-	target
TOPOTECAN	NM_052963	topoisomerase (DNA) I, mitochondrial	TOP1MT	-	target
TOPOTECAN	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	15930297	target
IRINOTECAN	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	12960109, 15655543, 15801936, 16815871	resistance
IRINOTECAN	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	15897249, 16815871, 18927307	resistance
IRINOTECAN	NM_000392	ATP-binding cassette, sub-family C (CFTR/MRP), member 2	ABCC2	16815871, 18981587	resistance
IRINOTECAN	NM_001105515;NM_005845	ATP-binding cassette, sub-family C (CFTR/MRP), member 4	ABCC4	15827327	resistance
IRINOTECAN	NM_004827	ATP-binding cassette, sub-family G (WHITE), member 2	ABCG2	15239142, 15695404,15655543, 15801936	resistance
IRINOTECAN	NM_032859	abhydrolase domain containing 13	ABHD13	18927307	
IRINOTECAN	NM_198834;NM_198836;NM_198837;NM_198838;NM_198839	acetyl-Coenzyme A carboxylase alpha	ACACA	18927307	
IRINOTECAN	NM_023038;NM_033274	ADAM metallopeptidase domain 19 (meltrin beta)	ADAM19	18927307	

IRINOTECAN	NM_001121;NM_016824;NM_019903	adducin 3 (gamma)	ADD3	15956246	
IRINOTECAN	NM_018269	acireductone dioxygenase 1	ADI1	18927307	
IRINOTECAN	NM_000029	angiotensinogen (serpin peptidase inhibitor, clade A, member 8)	AGT	18927307	
IRINOTECAN	NM_007202	A kinase (PRKA) anchor protein 10	AKAP10	15956246	
IRINOTECAN	NM_000032;NM_001037967;NM_001037968	aminolevulinate, delta-, synthase 2	ALAS2	15956246	
IRINOTECAN	NM_000477	albumin	ALB	18927307	
IRINOTECAN	NM_000689	aldehyde dehydrogenase 1 family, member A1	ALDH1A1	15956246	
IRINOTECAN	NM_001143668;NM_181847	adhesion molecule with Ig-like domain 2	AMIGO2	18927307	
IRINOTECAN	NM_012098	angiopoietin-like 2	ANGPTL2	17327601	
IRINOTECAN	NM_032217;NM_198889	ankyrin repeat domain 17	ANKRD17	18927307	
IRINOTECAN	NM_015199	ankyrin repeat domain 28	ANKRD28	18927307	
IRINOTECAN	NM_001003954;NM_004306	annexin A13	ANXA13	18927307	
IRINOTECAN	NM_001155;NM_004033	annexin A6	ANXA6	15956246	
IRINOTECAN	NM_001030006;NM_001282	adaptor-related protein complex 2, beta 1 subunit	AP2B1	18927307	
IRINOTECAN	NM_000038;NM_001127510;NM_001127511	adenomatous polyposis coli	APC	15956246	
IRINOTECAN	NM_001654	v-raf murine sarcoma 3611 viral oncogene homolog	ARAF	15956246	
IRINOTECAN	NM_001657	amphiregulin	AREG	15723263	
IRINOTECAN	NM_001024226;NM_001024227;NM_001024228;NM_001658	ADP-ribosylation factor 1	ARF1	18927307	
IRINOTECAN	NM_001030055;NM_001173	Rho GTPase activating protein 5	ARHGAP5	15956246	
IRINOTECAN	NM_015313	Rho guanine nucleotide exchange factor (GEF) 12	ARHGEF12	18927307	
IRINOTECAN	NM_152641	AT rich interactive domain 2 (ARID, RFX-like)	ARID2	18927307	
IRINOTECAN	NM_002892;NM_023000;NM_023001	AT rich interactive domain 4A (RBP1-like)	ARID4A	15956246	

IRINOTECAN	-	-	ARL6IP2	18927307	
IRINOTECAN	-	-	ARL7	18927307	
IRINOTECAN	NM_014154;NM_015396;NM_213654	armadillo repeat containing 8	ARMC8	18927307	
IRINOTECAN	NM_000046;NM_198709	arylsulfatase B	ARSB	18927307	
IRINOTECAN	NM_001030287;NM_001040619;NM_001674;NM_004024	activating transcription factor 3	ATF3	15956246	
IRINOTECAN	NM_001131028;NM_031482	ATG10 autophagy related 10 homolog (S. cerevisiae)	ATG10	15956246	
IRINOTECAN	NM_001697	ATP synthase, H+ transporting, mitochondrial F1 complex, O subunit	ATP5O	17327601	
IRINOTECAN	NM_001003803;NM_001003805;NM_015684	ATP synthase, H+ transporting, mitochondrial F0 complex, subunit s (factor B)	ATP5S	18927307	
IRINOTECAN	NM_001141972;NM_080650	ATP binding domain 4	ATPBD4	18927307	
IRINOTECAN	NM_000489;NM_138270	alpha thalassemia/mental retardation syndrome X-linked (RAD54 homolog, S. cerevisiae)	ATRX	18927307	
IRINOTECAN	NM_004217	aurora kinase B	AURKB	15956246	
IRINOTECAN	NM_012342	BMP and activin membrane-bound inhibitor homolog (Xenopus laevis)	BAMBI	18927307	
IRINOTECAN	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	18949393	
IRINOTECAN	NM_001024808;NM_020993	B-cell CLL/lymphoma 7A	BCL7A	15956246	
IRINOTECAN	NM_004326	B-cell CLL/lymphoma 9	BCL9	15956246	
IRINOTECAN	NM_004327;NM_021574	breakpoint cluster region	BCR	18927307	
IRINOTECAN	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	15956246, 16373703	
IRINOTECAN	-	-	BM1_06115	18927307	
IRINOTECAN	NM_181809	bone morphogenetic protein 8a	BMP8A	15956246	
IRINOTECAN	NM_033030;NM_197970	bol, boule-like (Drosophila)	BOLL	17327601	
IRINOTECAN	NM_014962;NM_181443	BTB (POZ) domain containing 3	BTBD3	18927307	
IRINOTECAN	NM_004336	budding uninhibited by benzimidazoles 1 homolog (yeast)	BUB1	15956246	
IRINOTECAN	-	-	C11ORF80	18927307	
IRINOTECAN	-	-	C14ORF118	18927307	

IRINOTECAN	-	-	C15ORF5	18927307	
IRINOTECAN	-	-	C16ORF87	18927307	
IRINOTECAN	-	-	C1ORF43	18927307	
IRINOTECAN	-	-	C5ORF28	18927307	
IRINOTECAN	-	-	C7ORF44	18927307	
IRINOTECAN	-	-	C9ORF100	18927307	
IRINOTECAN	-	-	C9ORF126	18927307	
IRINOTECAN	-	-	C9ORF25	18927307	
IRINOTECAN	NM_012295	calcineurin binding protein 1	CABIN1	18927307	
IRINOTECAN	NM_001003406;NM_021096	calcium channel, voltage-dependent, T type, alpha 1I subunit	CACNA1I	18927307	
IRINOTECAN	NM_001225;NM_033306	caspase 4, apoptosis-related cysteine peptidase	CASP4	15956246	
IRINOTECAN	NM_019083	coiled-coil domain containing 76	CCDC76	18927307	
IRINOTECAN	NM_001237	cyclin A2	CCNA2	15956246	
IRINOTECAN	NM_004701	cyclin B2	CCNB2	15956246	
IRINOTECAN	NM_001761	cyclin F	CCNF	15956246	
IRINOTECAN	NM_004354	cyclin G2	CCNG2	18927307	
IRINOTECAN	NM_001295	chemokine (C-C motif) receptor 1	CCR1	15956246	
IRINOTECAN	NM_004367;NM_031409	chemokine (C-C motif) receptor 6	CCR6	15956246	
IRINOTECAN	NM_001009186;NM_001762	chaperonin containing TCP1, subunit 6A (zeta 1)	CCT6A	18927307	
IRINOTECAN	NM_001025079;NM_001777;NM_198793	CD47 molecule	CD47	18927307	
IRINOTECAN	NM_001252	CD70 molecule	CD70	15956246	
IRINOTECAN	NM_005191	CD80 molecule	CD80	15956246	
IRINOTECAN	NM_001130829;NM_001786;NM_033379	cell division cycle 2, G1 to S and G2 to M	CDC2	15956246	
IRINOTECAN	NM_004358;NM_021872;NM_021873	cell division cycle 25 homolog B (S. pombe)	CDC25B	15956246	

IRINOTECAN	NM_003718;NM_031267	cell division cycle 2-like 5 (cholinesterase-related cell division controller)	CDC2L5	15956246	
IRINOTECAN	NM_003607;NM_014826	CDC42 binding protein kinase alpha (DMPK-like)	CDC42BPA	18927307	
IRINOTECAN	NM_001794	cadherin 4, type 1, R-cadherin (retinal)	CDH4	18927307	
IRINOTECAN	NM_003936	cyclin-dependent kinase 5, regulatory subunit 2 (p39)	CDK5R2	15956246	
IRINOTECAN	NM_001145306;NM_001259	cyclin-dependent kinase 6	CDK6	18927307	
IRINOTECAN	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	15132777	
IRINOTECAN	NM_001130851;NM_005192	cyclin-dependent kinase inhibitor 3	CDKN3	15956246	
IRINOTECAN	NM_016952	Cdon homolog (mouse)	CDON	18927307	
IRINOTECAN	NM_001813	centromere protein E, 312kDa	CENPE	15956246, 18927307	
IRINOTECAN	NM_016343	centromere protein F, 350/400ka (mitosin)	CENPF	15956246	
IRINOTECAN	-	-	CENTG2	18927307	
IRINOTECAN	NM_032142	centrosomal protein 192kDa	CEP192	18927307	
IRINOTECAN	NM_025114	centrosomal protein 290kDa	CEP290	18927307	
IRINOTECAN	NM_001025194;NM_001025195;NM_001266	carboxylesterase 1 (monocyte/macrophage serine esterase 1)	CES1	15100172, 15239142	
IRINOTECAN	NM_003869;NM_198061	carboxylesterase 2 (intestine, liver)	CES2	10728672,12171891,11716702,12171903,	
(following) 12171891,15592324,16203781,11716702, 15475733,14581373,15100172, 15592324, 15655543, 16033949, 16203781					
IRINOTECAN	*NM_024922*	*carboxylesterase 3*	CES3	15100172	
IRINOTECAN	NM_001270	chromodomain helicase DNA binding protein 1	CHD1	15956246	
IRINOTECAN	NM_001130675;NM_004362	calmegin	CLGN	18927307	
IRINOTECAN	NM_004859	clathrin, heavy chain (Hc)	CLTC	18927307	
IRINOTECAN	NM_017649;NM_199076;NM_199077	cyclin M2	CNNM2	18927307	
IRINOTECAN	NM_001130103;NM_005203;NM_080798;NM_080799;NM_080800;NM_080801;NM_080802;NM_080803;NM_080804;NM_080805;NM_080806;NM_080807;NM_080808;NM_080809;NM_080810;NM_080811;NM_080812;NM_080813;NM_080814;NM_080815	collagen, type XIII, alpha 1	COL13A1	18927307	

IRINOTECAN	NM_000092	collagen, type IV, alpha 4	COL4A4	18927307	
IRINOTECAN	NM_001848	collagen, type VI, alpha 1	COL6A1	15956246	
IRINOTECAN	NM_203495;NM_203497	COMM domain containing 6	COMMD6	15956246	
IRINOTECAN	NM_001098398;NM_004371	coatomer protein complex, subunit alpha	COPA	18927307	
IRINOTECAN	NM_001873	carboxypeptidase E	CPE	18927307	
IRINOTECAN	NM_001079846;NM_004380	CREB binding protein	CREBBP	15956246, 18927307	
IRINOTECAN	NM_016441	cysteine rich transmembrane BMP regulator 1 (chordin-like)	CRIM1	18927307	
IRINOTECAN	NM_020991;NM_022644;NM_022645	chorionic somatomammotropin hormone 2	CSH2	18927307	
IRINOTECAN	NM_001083914;NM_001329;NM_022802	C-terminal binding protein 2	CTBP2	18927307	
IRINOTECAN	NM_001902;NM_153742	cystathionase (cystathionine gamma-lyase)	CTH	18927307	
IRINOTECAN	NM_001008895;NM_003589	cullin 4A	CUL4A	18927307	
IRINOTECAN	NM_000609;NM_001033886;NM_199168	chemokine (C-X-C motif) ligand 12 (stromal cell-derived factor 1)	CXCL12	18927307	
IRINOTECAN	NM_000761	cytochrome P450, family 1, subfamily A, polypeptide 2	CYP1A2	11901092	unrelated
IRINOTECAN	*NM_000762*	*cytochrome P450, family 2, subfamily A, polypeptide 6*	CYP2A6	11901092	
IRINOTECAN	NM_000767	cytochrome P450, family 2, subfamily B, polypeptide 6	CYP2B6	11901092	
IRINOTECAN	NM_000769	cytochrome P450, family 2, subfamily C, polypeptide 19	CYP2C19	11901092	
IRINOTECAN	NM_000770	cytochrome P450, family 2, subfamily C, polypeptide 8	CYP2C8	11901092	unrelated
IRINOTECAN	NM_000771	cytochrome P450, family 2, subfamily C, polypeptide 9	CYP2C9	11901092	unrelated
IRINOTECAN	NM_000106;NM_001025161	cytochrome P450, family 2, subfamily D, polypeptide 6	CYP2D6	11901092	
IRINOTECAN	NM_000773	cytochrome P450, family 2, subfamily E, polypeptide 1	CYP2E1	11901092	
IRINOTECAN	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A4	11901092, 15100172, 15239142, 15523087,15655543	drug metabolism

IRINOTECAN	NM_000777	cytochrome P450, family 3, subfamily A, polypeptide 5	CYP3A5	15897249	drug metabolism
IRINOTECAN	NM_001142936;NM_139179	diacylglycerol lipase, beta	DAGLB	18927307	
IRINOTECAN	NM_014881	DNA cross-link repair 1A (PSO2 homolog, S. cerevisiae)	DCLRE1A	15956246	
IRINOTECAN	NM_006400	dynactin 2 (p50)	DCTN2	18927307	
IRINOTECAN	NM_000107	damage-specific DNA binding protein 2, 48kDa	DDB2	15956246	
IRINOTECAN	NM_030637	DDHD domain containing 1	DDHD1	18927307	
IRINOTECAN	NM_001039711;NM_001039712;NM_032998	death effector domain containing	DEDD	18927307	
IRINOTECAN	NM_004084	defensin, alpha 1	DEFA1	15956246	
IRINOTECAN	NM_001144823;NM_005848	DENN/MADD domain containing 4A	DENND4A	15956246	
IRINOTECAN	NM_003677	density-regulated protein	DENR	18927307	
IRINOTECAN	NM_001145208;NM_018369	DEP domain containing 1B	DEPDC1B	18927307	
IRINOTECAN	NM_022720	DiGeorge syndrome critical region gene 8	DGCR8	18927307	
IRINOTECAN	NM_176815	dihydrofolate reductase-like 1	DHFRL1	18927307	
IRINOTECAN	NM_001146114;NM_001146115;NM_015151;NM_206889;NM_206890;NM_206891	DIP2 disco-interacting protein 2 homolog A (Drosophila)	DIP2A	18927307	
IRINOTECAN	NM_006094;NM_024767;NM_182643	deleted in liver cancer 1	DLC1	18927307	
IRINOTECAN	NM_001098424;NM_004087	discs, large homolog 1 (Drosophila)	DLG1	18927307	
IRINOTECAN	NM_001934;NM_138281	distal-less homeobox 4	DLX4	18927307	
IRINOTECAN	NM_004943	dystrophia myotonica, WD repeat containing	DMWD	15956246	
IRINOTECAN	-	-	DNMT2	15956246	
IRINOTECAN	NM_001039589;NM_001384	DPH2 homolog (S. cerevisiae)	DPH2	18927307	
IRINOTECAN	NM_000110	dihydropyrimidine dehydrogenase	DPYD	15956246	
IRINOTECAN	NM_000798	dopamine receptor D5	DRD5	17327601	
IRINOTECAN	NM_004147	developmentally regulated GTP binding protein 1	DRG1	15897249	
IRINOTECAN	NM_001144769;NM_001144770;NM_001144771;NM_001723;NM_015548;NM_020388;NM_183380	dystonin	DST	18927307	
IRINOTECAN	NM_004418	dual specificity phosphatase 2	DUSP2	15956246	
IRINOTECAN	NM_001396;NM_101395;NM_13043	dual-specificity tyrosine-(Y)-phosphorylation regulated	DYRK1	15956246	

	6;NM_130437;NM_130438	kinase 1A	A		
IRINOTECAN	NM_003583;NM_006482	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 2	DYRK2	15956246	
IRINOTECAN	-	-	EBI2	15956246	
IRINOTECAN	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	15723263	
IRINOTECAN	NM_001964	early growth response 1	EGR1	15956246	
IRINOTECAN	NM_001013703	eukaryotic translation initiation factor 2 alpha kinase 4	EIF2AK4	18927307	
IRINOTECAN	NM_012155	echinoderm microtubule associated protein like 2	EML2	17327601	
IRINOTECAN	NM_001428	enolase 1, (alpha)	ENO1	18927307	
IRINOTECAN	NM_001429	E1A binding protein p300	EP300	15956246	
IRINOTECAN	NM_031308	epiplakin 1	EPPK1	18927307	
IRINOTECAN	NM_001042599;NM_005235	v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)	ERBB4	15956246	
IRINOTECAN	NM_015064;NM_178037;NM_178038;NM_178039;NM_178040	ELKS/RAB6-interacting/CAST family member 1	ERC1	18927307	
IRINOTECAN	NM_001432	epiregulin	EREG	18927307	
IRINOTECAN	NM_005239	v-ets erythroblastosis virus E26 oncogene homolog 2 (avian)	ETS2	15956246	
IRINOTECAN	NM_001987	ets variant 6	ETV6	15956246	
IRINOTECAN	NM_001037126;NM_021807	exocyst complex component 4	EXOC4	18927307	
IRINOTECAN	NM_000132;NM_019863	coagulation factor VIII, procoagulant component	F8	17327601	
IRINOTECAN	NM_001040442;NM_001130958;NM_001445	fatty acid binding protein 6, ileal	FABP6	18927307	
IRINOTECAN	-	-	FAM152A	18927307	
IRINOTECAN	NM_001040020;NM_014888	family with sequence similarity 3, member C	FAM3C	18927307	
IRINOTECAN	-	-	FAM44A	18927307	
IRINOTECAN	NM_004629	Fanconi anemia, complementation group G	FANCG	15956246	
IRINOTECAN	NM_005687	phenylalanyl-tRNA synthetase, beta subunit	FARSB	18927307	
IRINOTECAN	NM_000639	Fas ligand (TNF superfamily, member 6)	FASLG	15897249	
IRINOTECAN	NM_015962	FCF1 small subunit (SSU) processome component homolog (S. cerevisiae)	FCF1	18927307	
IRINOTECAN	NM_002006	fibroblast growth factor 2 (basic)	FGF2	15956246	

IRINOTECAN	NM_002010	fibroblast growth factor 9 (glia-activating factor)	FGF9	18927307	
IRINOTECAN	NM_002026;NM_054034;NM_212474;NM_212475;NM_212476;NM_212478;NM_212482	fibronectin 1	FN1	15956246, 18927307	
IRINOTECAN	NM_005252	v-fos FBJ murine osteosarcoma viral oncogene homolog	FOS	15956246	
IRINOTECAN	NM_001114171;NM_006732	FBJ murine osteosarcoma viral oncogene homolog B	FOSB	15956246	
IRINOTECAN	NM_032892	FERM domain containing 5	FRMD5	18927307	
IRINOTECAN	NM_001080432	fat mass and obesity associated	FTO	18927307	
IRINOTECAN	NM_001465;NM_199335	FYN binding protein (FYB-120/130)	FYB	18927307	
IRINOTECAN	-	-	G1P3	18927307	
IRINOTECAN	NM_001002295;NM_002051	GATA binding protein 3	GATA3	15956246	
IRINOTECAN	NM_004864	growth differentiation factor 15	GDF15	15956246	
IRINOTECAN	NM_001032364;NM_001032365;NM_005265;NM_013430	gamma-glutamyltransferase 1	GGT1	18927307	
IRINOTECAN	NM_000165	gap junction protein, alpha 1, 43kDa	GJA1	18927307	
IRINOTECAN	NM_000167;NM_001128127;NM_203391	glycerol kinase	GK	18927307	
IRINOTECAN	NM_006541	glutaredoxin 3	GLRX3	18927307	
IRINOTECAN	NM_006572	guanine nucleotide binding protein (G protein), alpha 13	GNA13	18927307	
IRINOTECAN	NM_181077	golgi autoantigen, golgin subfamily a, 8A	GOLGA8A	17327601	
IRINOTECAN	NM_015590;NM_182679	G patch domain containing 4	GPATCH4	18927307	
IRINOTECAN	NM_002084	glutathione peroxidase 3 (plasma)	GPX3	15956246	
IRINOTECAN	NM_002105	H2A histone family, member X	H2AFX	15956246	
IRINOTECAN	NM_001945	heparin-binding EGF-like growth factor	HBEGF	15723263	
IRINOTECAN	NM_000559	hemoglobin, gamma A	HBG1	18927307	
IRINOTECAN	NM_005334	host cell factor C1 (VP16-accessory protein)	HCFC1	18927307	
IRINOTECAN	NM_173497;NM_182765	HECT domain containing 2	HECTD2	18927307	
IRINOTECAN	NM_018063	helicase, lymphoid-specific	HELLS	18927307	
IRINOTECAN	NM_005524	hairy and enhancer of split 1, (Drosophila)	HES1	19147571	
IRINOTECAN	NM_003512	histone cluster 1, H2ac	HIST1H2AC	15956246	
IRINOTECAN	NM_003542	histone cluster 1, H4c	HIST1H	18927307	

			4C		
IRINOTECAN	NM_005514	major histocompatibility complex, class I, B	HLA-B	18927307	
IRINOTECAN	NM_002124	major histocompatibility complex, class II, DR beta 1	HLA-DRB1	18927307	
IRINOTECAN	NM_021983	major histocompatibility complex, class II, DR beta 4	HLA-DRB4	18927307	
IRINOTECAN	NM_001142556;NM_001142557;NM_012484;NM_012485	hyaluronan-mediated motility receptor (RHAMM)	HMMR	15956246	
IRINOTECAN	NM_001002032;NM_001002033;NM_016185	hematological and neurological expressed 1	HN1	18927307	
IRINOTECAN	-	-	HNRPA1	18927307	
IRINOTECAN	-	-	HNRPD	18927307	
IRINOTECAN	NM_031372	heterogeneous nuclear ribonucleoprotein D-like	HNRPDL	18927307	
IRINOTECAN	NM_000412	histidine-rich glycoprotein	HRG	15956246	
IRINOTECAN	NM_006041	heparan sulfate (glucosamine) 3-O-sulfotransferase 3B1	HS3ST3B1	18927307	
IRINOTECAN	NM_014278	heat shock 70kDa protein 4-like	HSPA4L	15956246	
IRINOTECAN	-	-	HYPK	18927307	
IRINOTECAN	NM_002166	inhibitor of DNA binding 2, dominant negative helix-loop-helix protein	ID2	15956246	
IRINOTECAN	NM_003641	interferon induced transmembrane protein 1 (9-27)	IFITM1	18927307	
IRINOTECAN	NM_000618;NM_001111283;NM_001111284;NM_001111285	insulin-like growth factor 1 (somatomedin C)	IGF1	15956246	
IRINOTECAN	-	immunoglobulin heavy constant gamma 1 (G1m marker)	IGHG1	18927307	
IRINOTECAN	NM_000576	interleukin 1, beta	IL1B	15956246	
IRINOTECAN	NM_000584	interleukin 8	IL8	15723263	
IRINOTECAN	NM_032549	IMP2 inner mitochondrial membrane peptidase-like (S. cerevisiae)	IMMP2L	18927307	
IRINOTECAN	NM_001100169;NM_001100170;NM_006839	inner membrane protein, mitochondrial (mitofilin)	IMMT	18927307	
IRINOTECAN	NM_019071;NM_198267	inhibitor of growth family, member 3	ING3	18927307	
IRINOTECAN	NM_005542;NM_198336;NM_198337	insulin induced gene 1	INSIG1	18927307	

IRINOTECAN	NM_002203	integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)	ITGA2	18927307	
IRINOTECAN	NM_001144999;NM_001145000;NM_002210	integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)	ITGAV	15956246	
IRINOTECAN	NM_000887	integrin, alpha X (complement component 3 receptor 4 subunit)	ITGAX	15956246	
IRINOTECAN	NM_014288	integrin beta 3 binding protein (beta3-endonexin)	ITGB3BP	15956246	
IRINOTECAN	NM_002228	jun oncogene	JUN	15956246	
IRINOTECAN	NM_006559	KH domain containing, RNA binding, signal transduction associated 1	KHDRBS1	18927307	
IRINOTECAN	NM_001162893;NM_001162894;NM_001162895;NM_014656	KIAA0040	KIAA0040	18927307	
IRINOTECAN	NM_015443	KIAA1267	KIAA1267	18927307	
IRINOTECAN	-	-	KIAA1333	18927307	
IRINOTECAN	NM_033395	KIAA1731	KIAA1731	18927307	
IRINOTECAN	NM_014875	kinesin family member 14	KIF14	18927307	
IRINOTECAN	NM_004235	Kruppel-like factor 4 (gut)	KLF4	18927307	
IRINOTECAN	NM_001206	Kruppel-like factor 9	KLF9	15956246	
IRINOTECAN	NM_017644	kelch-like 24 (Drosophila)	KLHL24	18927307	
IRINOTECAN	NM_001013406;NM_004912;NM_194454;NM_194455;NM_194456	KRIT1, ankyrin repeat containing	KRIT1	18927307	
IRINOTECAN	NM_000424	keratin 5	KRT5	15956246	
IRINOTECAN	NM_030915	limb bud and heart development homolog (mouse)	LBH	18927307	
IRINOTECAN	NM_006499;NM_201543;NM_201544;NM_201545	lectin, galactoside-binding, soluble, 8	LGALS8	17327601	
IRINOTECAN	-	-	LIM	18927307	
IRINOTECAN	NM_032603	lysyl oxidase-like 3	LOXL3	18927307	
IRINOTECAN	NM_024830	lysophosphatidylcholine acyltransferase 1	LPCAT1	18927307	
IRINOTECAN	NM_032773	leucine-rich repeats and calponin homology (CH) domain containing 3	LRCH3	18927307	
IRINOTECAN	NM_002343	lactotransferrin	LTF	15956246	
IRINOTECAN	NM_032860	LTV1 homolog (S. cerevisiae)	LTV1	18927307	

IRINOTECAN	NM_002358	MAD2 mitotic arrest deficient-like 1 (yeast)	MAD2L1	15956246	
IRINOTECAN	NM_002371;NM_022438;NM_022439;NM_022440	mal, T-cell differentiation protein	MAL	15956246	
IRINOTECAN	NR_002819;NR_002819;NR_002819;NR_002819;NR_002819;NR_002819	metastasis associated lung adenocarcinoma transcript 1 (non-protein coding)	MALAT1	18927307	
IRINOTECAN	NM_005434	mal, T-cell differentiation protein-like	MALL	15956246	
IRINOTECAN	NM_005923	mitogen-activated protein kinase kinase kinase 5	MAP3K5	15956246	
IRINOTECAN	NM_003618	mitogen-activated protein kinase kinase kinase kinase 3	MAP4K3	18927307	
IRINOTECAN	NM_005885	membrane-associated ring finger (C3HC4) 6	MARCH6	18927307	
IRINOTECAN	NM_002380;NM_030583	matrilin 2	MATN2	18927307	
IRINOTECAN	NM_018834;NM_199189	matrin 3	MATR3	18927307	
IRINOTECAN	NM_021038;NM_207292;NM_207293;NM_207294;NM_207295;NM_207296;NM_207297	muscleblind-like (Drosophila)	MBNL1	18927307	
IRINOTECAN	NM_001025081;NM_001025090;NM_001025092;NM_001025100;NM_001025101;NM_002385	myelin basic protein	MBP	18927307	
IRINOTECAN	NM_022132	methylcrotonoyl-Coenzyme A carboxylase 2 (beta)	MCCC2	18927307	
IRINOTECAN	NM_001112732;NM_024979	MCF.2 cell line derived transforming sequence-like	MCF2L	15956246	
IRINOTECAN	NM_005914;NM_182746	minichromosome maintenance complex component 4	MCM4	15956246	
IRINOTECAN	NM_001145336;NM_001145337;NM_001145339;NM_001145340;NM_002392;NM_006878,NM_006879;NM_006881;NM_006882	Mdm2 p53 binding protein homolog (mouse)	MDM2	15956246	
IRINOTECAN	NM_014611	MDN1, midasin homolog (yeast)	MDN1	18927307	
IRINOTECAN	NM_005121	mediator complex subunit 13	MED13	18927307	
IRINOTECAN	NM_001145785	myocyte enhancer factor 2B	MEF2B	15956246	
IRINOTECAN	NM_002412	O-6-methylguanine-DNA methyltransferase	MGMT	15239142	
IRINOTECAN	NM_012064	major intrinsic protein of lens fiber	MIP	18927307	
IRINOTECAN	NR_027350;XR_079513;XR_079513;XR_079539;XR_079539;XR_079554;XR_079554	microRNA host gene 1 (non-protein coding)	MIRHG1	18927307	
IRINOTECAN	NM_173576	mohawk homeobox	MKX	18927307	

IRINOTECAN	NM_000249	mutL homolog 1, colon cancer, nonpolyposis type 2 (E. coli)	MLH1	18949393	
IRINOTECAN	NM_004994	matrix metallopeptidase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)	MMP9	15956246	
IRINOTECAN	NM_000250	myeloperoxidase	MPO	15956246	
IRINOTECAN	NM_173496	membrane protein, palmitoylated 7 (MAGUK p55 subfamily member 7)	MPP7	18927307	
IRINOTECAN	NM_016640	mitochondrial ribosomal protein S30	MRPS30	18927307	
IRINOTECAN	NM_000251	mutS homolog 2, colon cancer, nonpolyposis type 1 (E. coli)	MSH2	15956246, 18949393	
IRINOTECAN	NM_015440	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 1-like	MTHFD1L	18927307	
IRINOTECAN	NM_006441	5,10-methenyltetrahydrofolate synthetase (5-formyltetrahydrofolate cyclo-ligase)	MTHFS	15956246	
IRINOTECAN	NM_002463	myxovirus (influenza virus) resistance 2 (mouse)	MX2	15956246	
IRINOTECAN	NM_005964	myosin, heavy chain 10, non-muscle	MYH10	18927307	
IRINOTECAN	NM_001085487	Myb-like, SWIRM and MPN domains 1	MYSM1	18927307	
IRINOTECAN	NM_153029	NEDD4 binding protein 1	N4BP1	18927307	
IRINOTECAN	NM_017940	neuroblastoma breakpoint family, member 1	NBPF1	18927307	
IRINOTECAN	NM_006153	NCK adaptor protein 1	NCK1	15956246	
IRINOTECAN	NM_003743;NM_147223;NM_147233	nuclear receptor coactivator 1	NCOA1	15956246	
IRINOTECAN	NM_006311	nuclear receptor co-repressor 1	NCOR1	18927307	
IRINOTECAN	NM_015331	nicastrin	NCSTN	19147571	
IRINOTECAN	NM_002497	NIMA (never in mitosis gene a)-related kinase 2	NEK2	15956246	
IRINOTECAN	NM_006018	niacin receptor 2	NIACR2	15956246	
IRINOTECAN	NM_002508	nidogen 1	NID1	15956246	
IRINOTECAN	NM_000903;NM_001025433;NM_001025434	NAD(P)H dehydrogenase, quinone 1	NQO1	18927307	
IRINOTECAN	NM_006178	N-ethylmaleimide-sensitive factor	NSF	18927307	
IRINOTECAN	NM_005124	nucleoporin 153kDa	NUP153	18927307	
IRINOTECAN	NM_001129897;NM_016359;NM_018454	nucleolar and spindle associated protein 1	NUSAP1	18927307	
IRINOTECAN	NM_002547	oligophrenin 1	OPHN1	18927307	
IRINOTECAN	NM_003999	oncostatin M receptor	OSMR	15956246	

IRINOTECAN	NM_018440	phosphoprotein associated with glycosphingolipid microdomains 1	PAG1	18927307	
IRINOTECAN	NM_000919;NM_138766;NM_138821;NM_138822	peptidylglycine alpha-amidating monooxygenase	PAM	18927307	
IRINOTECAN	NM_175854	PAN3 poly(A) specific ribonuclease subunit homolog (S. cerevisiae)	PAN3	18927307	
IRINOTECAN	NM_016734	paired box 5	PAX5	18927307	
IRINOTECAN	NM_001135254;NM_002584;NM_013945	paired box 7	PAX7	18927307	
IRINOTECAN	-	-	PCAF	18927307	
IRINOTECAN	NM_032151	pterin-4 alpha-carbinolamine dehydratase/dimerization cofactor of hepatocyte nuclear factor 1 alpha (TCF1) 2	PCBD2	18927307	
IRINOTECAN	NM_002588;NM_032402;NM_032403	protocadherin gamma subfamily C, 3	PCDHGC3	15956246	
IRINOTECAN	NM_001037339;NM_001037340;NM_001037341;NM_002600	phosphodiesterase 4B, cAMP-specific (phosphodiesterase E4 dunce homolog, Drosophila)	PDE4B	15956246	
IRINOTECAN	NM_173582	phosphoglucomutase 2-like 1	PGM2L1	18927307	
IRINOTECAN	NM_007350	pleckstrin homology-like domain, family A, member 1	PHLDA1	18927307	
IRINOTECAN	NR_003700;NR_003700;NR_003700;NR_003700	phosphatidylinositol 4-kinase, catalytic, alpha pseudogene 2	PI4KAP2	15956246	
IRINOTECAN	NM_178517	phosphatidylinositol glycan anchor biosynthesis, class W	PIGW	18927307	
IRINOTECAN	NM_000930;NM_033011	plasminogen activator, tissue	PLAT	18927307	
IRINOTECAN	NM_001134478;NM_153268	phosphatidylinositol-specific phospholipase C, X domain containing 2	PLCXD2	18927307	
IRINOTECAN	NM_001143821;NM_019012	pleckstrin homology domain containing, family A member 5	PLEKHA5	18927307	
IRINOTECAN	NM_024927	pleckstrin homology domain containing, family H (with MyTH4 domain) member 3	PLEKHH3	15956246	
IRINOTECAN	NM_005030	polo-like kinase 1 (Drosophila)	PLK1	15956246	
IRINOTECAN	NM_006622	polo-like kinase 2 (Drosophila)	PLK2	15956246	
IRINOTECAN	NM_004073	polo-like kinase 3 (Drosophila)	PLK3	15956246	
IRINOTECAN	NM_021127	phorbol-12-myristate-13-acetate-induced protein 1	PMAIP1	15956246	
IRINOTECAN	NM_006813	proline-rich nuclear receptor coactivator 1	PNRC1	18927307	
IRINOTECAN	NM_015100;NM_145796;NM_207177	pogo transposable element with ZNF domain	POGZ	18927307	

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IRINOTECAN	NM_016218	polymerase (DNA directed) kappa	POLK	18927307	
IRINOTECAN	NM_000941	P450 (cytochrome) oxidoreductase	POR	15239142	
IRINOTECAN	NM_003620	protein phosphatase 1D magnesium-dependent, delta isoform	PPM1D	18927307	
IRINOTECAN	NM_000944;NM_001130691;NM_001130692	protein phosphatase 3 (formerly 2B), catalytic subunit, alpha isoform	PPP3CA	18927307	
IRINOTECAN	NM_001142353;NM_001142354;NM_021132	protein phosphatase 3 (formerly 2B), catalytic subunit, beta isoform	PPP3CB	15956246	
IRINOTECAN	NM_006251;NM_206907	protein kinase, AMP-activated, alpha 1 catalytic subunit	PRKAA1	18927307	
IRINOTECAN	NM_002737	protein kinase C, alpha	PRKCA	15723263	
IRINOTECAN	NM_002738;NM_212535	protein kinase C, beta	PRKCB	15723263	
IRINOTECAN	NM_006254;NM_212539	protein kinase C, delta	PRKCD	15723263	
IRINOTECAN	NM_002740	protein kinase C, iota	PRKCI	15723263	
IRINOTECAN	NM_001145848;NM_001145849;NM_001145850;NM_001145851;NM_001145852;NM_006017	prominin 1	PROM1	15956246	
IRINOTECAN	NM_002784	pregnancy specific beta-1-glycoprotein 9	PSG9	17327601	
IRINOTECAN	NM_004878	prostaglandin E synthase	PTGES	15956246	
IRINOTECAN	NM_005607;NM_153831	PTK2 protein tyrosine kinase 2	PTK2	18927307	
IRINOTECAN	NM_003463	protein tyrosine phosphatase type IVA, member 1	PTP4A1	18927307	
IRINOTECAN	NM_006264;NM_080683;NM_080684;NM_080685	protein tyrosine phosphatase, non-receptor type 13 (APO-1/CD95 (Fas)-associated phosphatase)	PTPN13	15956246	
IRINOTECAN	NM_012411;NM_015967	protein tyrosine phosphatase, non-receptor type 22 (lymphoid)	PTPN22	15956246	
IRINOTECAN	NM_001040712;NM_002839;NM_130391;NM_130392;NM_130393	protein tyrosine phosphatase, receptor type, D	PTPRD	15956246	
IRINOTECAN	NM_002841	protein tyrosine phosphatase, receptor type, G	PTPRG	18927307	
IRINOTECAN	NM_002846	protein tyrosine phosphatase, receptor type, N	PTPRN	15956246	
IRINOTECAN	NM_005052	ras-related C3 botulinum toxin substrate 3 (rho family, small GTP binding protein Rac3)	RAC3	15956246	
IRINOTECAN	NM_002874	RAD23 homolog B (S. cerevisiae)	RAD23B	15956246	
IRINOTECAN	NM_002877;NM_133509;NM_133510	RAD51-like 1 (S. cerevisiae)	RAD51L1	18927307	

IRINOTECAN	NM_002890;NM_022650	RAS p21 protein activator (GTPase activating protein) 1	RASA1	18927307	
IRINOTECAN	NM_000321	retinoblastoma 1	RB1	15132777	
IRINOTECAN	NM_005057	retinoblastoma binding protein 5	RBBP5	15956246	
IRINOTECAN	NM_002895;NM_183404	retinoblastoma-like 1 (p107)	RBL1	15956246	
IRINOTECAN	NM_001143941;NM_001143942;NM_153020	RNA binding motif protein 24	RBM24	18927307	
IRINOTECAN	-	-	RBPSUH	18927307	
IRINOTECAN	NM_021111	reversion-inducing-cysteine-rich protein with kazal motifs	RECK	18927307	
IRINOTECAN	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	15161687, 16685529	
IRINOTECAN	NM_001128617;NM_031922	RALBP1 associated Eps domain containing 1	REPS1	18927307	
IRINOTECAN	NM_002915;NM_181558	replication factor C (activator 1) 3, 38kDa	RFC3	15956246	
IRINOTECAN	NM_002922	regulator of G-protein signaling 1	RGS1	15956246	
IRINOTECAN	NM_015668	regulator of G-protein signaling 22	RGS22	18927307	
IRINOTECAN	NM_021205	ras homolog gene family, member U	RHOU	18927307	
IRINOTECAN	-	-	RNF12	18927307	
IRINOTECAN	NM_000968	ribosomal protein L4	RPL4	18927307	
IRINOTECAN	NM_001001890;NM_001122607;NM_001754	runt-related transcription factor 1	RUNX1	15956246	
IRINOTECAN	NM_017654	sterile alpha motif domain containing 9	SAMD9	18927307	
IRINOTECAN	NM_015474	SAM domain and HD domain 1	SAMHD1	18927307	
IRINOTECAN	-	-	SCD4	18927307	
IRINOTECAN	NM_002999	syndecan 4	SDC4	15956246	
IRINOTECAN	NM_001077206;NM_001077207;NM_001077208;NM_014933;NM_016211	SEC31 homolog A (S. cerevisiae)	SEC31A	18927307	
IRINOTECAN	NM_006379	sema domain, immunoglobulin domain (ig), short basic domain, secreted, (semaphorin) 3C	SEMA3C	18927307	
IRINOTECAN	NM_001100409;NM_015571	SUMO1/sentrin specific peptidase 6	SENP6	18927307	
IRINOTECAN	NM_001136528;NM_001136529;NM_001136530;NM_006216	serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 2	SERPINE2	17327601	
IRINOTECAN	NM_031459	sestrin 2	SESN2	15956246	
IRINOTECAN	NM_015048	SET domain containing 1B	SETD1	18927307	

			B		
IRINOTECAN	NM_001080517	SET domain containing 5	SETD5	18927307	
IRINOTECAN	NM_006142	stratifin	SFN	16373703	
IRINOTECAN	NM_001145444;NM_001145445;NM_020706	splicing factor, arginine/serine-rich 15	SFRS15	18927307	
IRINOTECAN	-	-	SGK	15956246, 18927307	
IRINOTECAN	NM_152524	shugoshin-like 2 (S. pombe)	SGOL2	18927307	
IRINOTECAN	NM_004696	solute carrier family 16, member 4 (monocarboxylic acid transporter 5)	SLC16A4	15956246	
IRINOTECAN	NM_194255	solute carrier family 19 (folate transporter), member 1	SLC19A1	18927307	
IRINOTECAN	NM_030631	solute carrier family 25 (mitochondrial oxodicarboxylate carrier), member 21	SLC25A21	18927307	
IRINOTECAN	NM_021194	solute carrier family 30 (zinc transporter), member 1	SLC30A1	18927307	
IRINOTECAN	NM_001130012;NM_004785	solute carrier family 9 (sodium/hydrogen exchanger), member 3 regulator 2	SLC9A3R2	15956246	
IRINOTECAN	NM_001145102;NM_001145103;NM_001145104;NM_005902	SMAD family member 3	SMAD3	18927307	
IRINOTECAN	NM_015295	structural maintenance of chromosomes flexible hinge domain containing 1	SMCHD1	18927307	
IRINOTECAN	NM_001122964;NM_020463	SMEK homolog 2, suppressor of mek1 (Dictyostelium)	SMEK2	18927307	
IRINOTECAN	NM_018225	smu-1 suppressor of mec-8 and unc-52 homolog (C. elegans)	SMU1	18927307	
IRINOTECAN	NM_020429;NM_181349	SMAD specific E3 ubiquitin protein ligase 1	SMURF1	18927307	
IRINOTECAN	-	-	SNAG1	15956246	
IRINOTECAN	NM_003090	small nuclear ribonucleoprotein polypeptide A'	SNRPA1	18927307	
IRINOTECAN	NM_003109;NM_138473	Sp1 transcription factor	SP1	18927307	
IRINOTECAN	NM_003121	Spi-B transcription factor (Spi-1/PU.1 related)	SPIB	15956246	
IRINOTECAN	NM_007271	serine/threonine kinase 38	STK38	15956246	
IRINOTECAN	NM_006282	serine/threonine kinase 4	STK4	15956246, 18927307	
IRINOTECAN	NM_001017389;NM_001017390	sulfotransferase family, cytosolic, 1A, phenol-preferring, member 4	SULT1A4	15956246	
IRINOTECAN	NM_032184	synapse defective 1, Rho GTPase, homolog 2 (C. elegans)	SYDE2	18927307	

IRINOTECAN	NM_001135805;NM_001135806;NM_005639	synaptotagmin I	SYT1	18927307	
IRINOTECAN	NM_003184	TAF2 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 150kDa	TAF2	15956246	
IRINOTECAN	NM_003192	tubulin folding cofactor C	TBCC	15956246	
IRINOTECAN	NM_003205;NM_207036;NM_207037;NM_207038;NM_207040	transcription factor 12	TCF12	18927307	
IRINOTECAN	NM_030756	transcription factor 7-like 2 (T-cell specific, HMG-box)	TCF7L2	18927307	
IRINOTECAN	NM_005653	transcription factor CP2	TFCP2	18927307	
IRINOTECAN	NM_001032281;NM_006287	tissue factor pathway inhibitor (lipoprotein-associated coagulation inhibitor)	TFPI	18927307	
IRINOTECAN	NM_001128148;NM_003234	transferrin receptor (p90, CD71)	TFRC	18927307	
IRINOTECAN	NM_001099691;NM_003236	transforming growth factor, alpha	TGFA	15723263	
IRINOTECAN	NM_000358	transforming growth factor, beta-induced, 68kDa	TGFBI	18927307	
IRINOTECAN	NM_053055	thioesterase superfamily member 4	THEM4	18927307	
IRINOTECAN	NM_024838	threonine synthase-like 1 (S. cerevisiae)	THNSL1	18927307	
IRINOTECAN	NM_005119	thyroid hormone receptor associated protein 3	THRAP3	18927307	
IRINOTECAN	NM_006288	Thy-1 cell surface antigen	THY1	15956246	
IRINOTECAN	NM_052932	transmembrane protein 123	TMEM123	18927307	
IRINOTECAN	NM_015012	transmembrane protein 41B	TMEM41B	15956246	
IRINOTECAN	NM_021109	thymosin beta 4, X-linked	TMSB4X	16364925	
IRINOTECAN	NM_007115	tumor necrosis factor, alpha-induced protein 6	TNFAIP6	15956246	
IRINOTECAN	NM_005749	transducer of ERBB2, 1	TOB1	15956246	
IRINOTECAN	NM_016272	transducer of ERBB2, 2	TOB2	15956246	
IRINOTECAN	NM_003286	topoisomerase (DNA) I	TOP1	11914913, 15655543, 18509181	
IRINOTECAN	NM_052963	topoisomerase (DNA) I, mitochondrial	TOP1MT	-	
IRINOTECAN	NM_001067	topoisomerase (DNA) II alpha 170kDa	TOP2A	15239142, 15956246	
IRINOTECAN	NM_005802	topoisomerase I binding, arginine/serine-rich	TOPORS	15956246	

IRINOTECAN	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	16373703	
IRINOTECAN	NM_001135733;NM_033285	tumor protein p53 inducible nuclear protein 1	TP53INP1	18927307	
IRINOTECAN	NM_000367	thiopurine S-methyltransferase	TPMT	18927307	
IRINOTECAN	NM_007030	tubulin polymerization promoting protein	TPPP	18927307	
IRINOTECAN	NM_012112	TPX2, microtubule-associated, homolog (Xenopus laevis)	TPX2	15956246	
IRINOTECAN	NM_003789	TNFRSF1A-associated via death domain	TRADD	15956246	
IRINOTECAN	NM_005658	TNF receptor-associated factor 1	TRAF1	15956246	
IRINOTECAN	NM_025195	tribbles homolog 1 (Drosophila)	TRIB1	18927307	
IRINOTECAN	NM_021643	tribbles homolog 2 (Drosophila)	TRIB2	18927307	
IRINOTECAN	NM_033017;NM_033091	tripartite motif-containing 4	TRIM4	18927307	
IRINOTECAN	NM_015163;NM_052978	tripartite motif-containing 9	TRIM9	18927307	
IRINOTECAN	NM_003318	TTK protein kinase	TTK	15956246	
IRINOTECAN	NM_001113755;NM_001113756;NM_001953	thymidine phosphorylase	TYMP	17454858	
IRINOTECAN	NM_001071	thymidylate synthetase	TYMS	10482907, 17454858	
IRINOTECAN	NM_007019;NM_181799;NM_181800;NM_181801;NM_181802;NM_181803	ubiquitin-conjugating enzyme E2C	UBE2C	15956246	
IRINOTECAN	NM_006357;NM_182678	ubiquitin-conjugating enzyme E2E 3 (UBC4/5 homolog, yeast)	UBE2E3	18927307	
IRINOTECAN	NM_058167;NM_194315;NM_194457;NM_194458	ubiquitin-conjugating enzyme E2, J2 (UBC6 homolog, yeast)	UBE2J2	18927307	
IRINOTECAN	NM_015984	ubiquitin carboxyl-terminal hydrolase L5	UCHL5	15956246	
IRINOTECAN	NM_020121	UDP-glucose ceramide glucosyltransferase-like 2	UGCGL2	18927307	
IRINOTECAN	NM_000463	UDP glucuronosyltransferase 1 family, polypeptide A1	UGT1A1	12960109, 15517893, 15523087, 15833930,17898154,15716465,15655543, 15858133, 17898154, 18478930,18300238, 18797458	
IRINOTECAN	NM_019075	UDP glucuronosyltransferase 1 family, polypeptide A10	UGT1A10	15517893, 17898154,15716465	
IRINOTECAN	NM_001072;NM_205862	UDP glucuronosyltransferase 1 family, polypeptide A6	UGT1A6	15716465	

IRINOTECAN	NM_019077	UDP glucuronosyltransferase 1 family, polypeptide A7	UGT1A7	15833930,15716465,17898154	
IRINOTECAN	NM_019076	UDP glucuronosyltransferase 1 family, polypeptide A8	UGT1A8	15833930,18	
IRINOTECAN	NM_021027	UDP glucuronosyltransferase 1 family, polypeptide A9	UGT1A9	15833930,18	
IRINOTECAN	NM_025217	UL16 binding protein 2	ULBP2	18927307	
IRINOTECAN	NM_017886	unc-51-like kinase 4 (C. elegans)	ULK4	18927307	
IRINOTECAN	NM_015306	ubiquitin specific peptidase 24	USP24	18927307	
IRINOTECAN	-	-	VDP	18927307	
IRINOTECAN	NM_013245	vacuolar protein sorting 4 homolog A (S. cerevisiae)	VPS4A	18927307	
IRINOTECAN	NM_145206	vesicle transport through interaction with t-SNAREs homolog 1A (yeast)	VTI1A	18927307	
IRINOTECAN	NM_015045	wings apart-like homolog (Drosophila)	WAPAL	18927307	
IRINOTECAN	NM_003941	Wiskott-Aldrich syndrome-like	WASL	18927307	
IRINOTECAN	NM_015726	WD repeat domain 42A	WDR42A	18927307	
IRINOTECAN	NM_016087;NM_057168	wingless-type MMTV integration site family, member 16	WNT16	18927307	
IRINOTECAN	NM_015626;NM_134265	WD repeat and SOCS box-containing 1	WSB1	18927307	
IRINOTECAN	NM_001100161;NM_001100162;NM_015024	exportin 7	XPO7	18927307	
IRINOTECAN	NM_003401;NM_022406;NM_022550	X-ray repair complementing defective repair in Chinese hamster cells 4	XRCC4	15956246	
IRINOTECAN	NM_021141	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining)	XRCC5	18927307	
IRINOTECAN	NM_005748	YY1 associated factor 2	YAF2	18927307	
IRINOTECAN	NM_005433	v-yes-1 Yamaguchi sarcoma viral oncogene homolog 1	YES1	15956246	
IRINOTECAN	NM_015642	zinc finger and BTB domain containing 20	ZBTB20	18927307	
IRINOTECAN	NM_020119;NM_024625	zinc finger CCCH-type, antiviral 1	ZC3HAV1	18927307	
IRINOTECAN	NM_173798	zinc finger, CCHC domain containing 12	ZCCHC12	18927307	
IRINOTECAN	NM_178566	zinc finger, DHHC-type containing 21	ZDHHC21	18927307	
IRINOTECAN	NM_001143823;NM_003409	zinc finger protein 161 homolog (mouse)	ZFP161	18927307	
IRINOTECAN	NM_006887	zinc finger protein 36, C3H type-like 2	ZFP36L	15956246	

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IRINOTECAN	NM_003410	zinc finger protein, X-linked	ZFX	15956246	
IRINOTECAN	NM_001032293;NM_001098507;NM_003457	zinc finger protein 207	ZNF207	18927307	
IRINOTECAN	NM_001005368;NM_006973	zinc finger protein 32	ZNF32	17327601	
IRINOTECAN	NM_001135215;NM_001135216;NM_030899;NM_145909	zinc finger protein 323	ZNF323	18927307	
IRINOTECAN	NM_022752	zinc finger protein 574	ZNF574	18927307	
IRINOTECAN	NM_144690	zinc finger protein 582	ZNF582	17327601	
IRINOTECAN	NM_024706	zinc finger protein 668	ZNF668	18927307	
IRINOTECAN	NM_032268	zinc and ring finger 1	ZNRF1	18927307	
IRINOTECAN	NM_005089	zinc finger (CCCH type), RNA-binding motif and serine/arginine rich 2	ZRSR2	17327601	
ETOPOSIDE	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	12969965, 15239124	resistance
ETOPOSIDE	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	10900222, 12067707, 15460906, 15617835, 15999103,16156793,10900222, 16156793	resistance
ETOPOSIDE	NM_000392	ATP-binding cassette, sub-family C (CFTR/MRP), member 2	ABCC2	15751272,15849751, 15849751	resistance
ETOPOSIDE	NM_001144070;NM_003786	ATP-binding cassette, sub-family C (CFTR/MRP), member 3	ABCC3	15884115	resistance
ETOPOSIDE	NM_198576	agrin	AGRN	17374387	
ETOPOSIDE	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	17935137	
ETOPOSIDE	NM_000691;NM_001135167;NM_001135168	aldehyde dehydrogenase 3 family, memberA1	ALDH3A1	15905174	
ETOPOSIDE	NM_001153	annexin A4	ANXA4	17374387	
ETOPOSIDE	NM_001657	amphiregulin	AREG	15228094	
ETOPOSIDE	NM_001675;NM_182810	activating transcription factor 4 (tax-responsive enhancer element B67)	ATF4	16298333	
ETOPOSIDE	NM_001188	BCL2-antagonist/killer 1	BAK1	15215046	
ETOPOSIDE	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	15917659	
ETOPOSIDE	NM_001191;NM_138578	BCL2-like 1	BCL2L1	11468182, 15215046, 15917659	
ETOPOSIDE	NM_004050	BCL2-like 2	BCL2L2	14973057	
ETOPOSIDE	NM_001197	BCL2-interacting killer (apoptosis-inducing)	BIK	16007125	

ETOPOSIDE	NM_001166	baculoviral IAP repeat-containing 2	BIRC2	10815900,15050749, 14970392	
ETOPOSIDE	NM_001165;NM_182962	baculoviral IAP repeat-containing 3	BIRC3	14666661, 15050749	
ETOPOSIDE	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	15917659,16382892, 16322251,16364925	
ETOPOSIDE	NM_007294;NM_007295;NM_007296;NM_007297;NM_007298;NM_007299;NM_007300;NM_007302;NM_007303;NM_007304;NM_007305	breast cancer 1, early onset	BRCA1	16417649	
ETOPOSIDE	NM_001729	betacellulin	BTC	15228094	
ETOPOSIDE	NM_001130849;NM_001130850;NM_016289	calcium binding protein 39	CAB39	17374387	
ETOPOSIDE	NM_001033952;NM_001033953;NM_001741	calcitonin-related polypeptide alpha	CALCA	16222118	
ETOPOSIDE	NM_032982;NM_032983	caspase 2, apoptosis-related cysteine peptidase	CASP2	14757846	
ETOPOSIDE	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	15215046, 16364925, 16844113, 16951922, 17935137, 18056177, 18056177,16364925,16844113,16951922	
ETOPOSIDE	NM_001227;NM_033338;NM_033339;NM_033340	caspase 7, apoptosis-related cysteine peptidase	CASP7	16298333, 18056177	
ETOPOSIDE	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	15215046, 16364925, 17935137, 18056177	
ETOPOSIDE	NM_001237	cyclin A2	CCNA2	17390037	
ETOPOSIDE	NM_004354	cyclin G2	CCNG2	18754885	
ETOPOSIDE	NM_000610;NM_001001389;NM_001001390;NM_001001391;NM_001001392	CD44 molecule (Indian blood group)	CD44	15215046	
ETOPOSIDE	NM_001798;NM_052827	cyclin-dependent kinase 2	CDK2	16417649	
ETOPOSIDE	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	14601052	
ETOPOSIDE	NM_004064	cyclin-dependent kinase inhibitor 1B (p27, Kip1)	CDKN1B	17935137	
ETOPOSIDE	NM_001024912;NM_001712	carcinoembryonic antigen-related cell adhesion molecule 1 (biliary glycoprotein)	CEACAM1	17374387	
ETOPOSIDE	NM_005760	CCAAT/enhancer binding protein (C/EBP), zeta	CEBPZ	17374387	
ETOPOSIDE	NM_001127183;NM_001127184;NM_003879	CASP8 and FADD-like apoptosis regulator	CFLAR	14601052	
ETOPOSIDE	NM_001114121;NM_001114122;NM_001274	CHK1 checkpoint homolog (S. pombe)	CHEK1	18698031	

ETOPOSIDE	NM_020313	cytokine induced apoptosis inhibitor 1	CIAPIN 1	18389626	
ETOPOSIDE	NM_000785	cytochrome P450, family 27, subfamily B, polypeptide 1	CYP27 B1	17716971	
ETOPOSIDE	NM_000762	cytochrome P450, family 2, subfamily A, polypeptide 6	CYP2A 6	8114683	unrelated
ETOPOSIDE	NM_000767	cytochrome P450, family 2, subfamily B, polypeptide 6	CYP2B 6	8114683	unrelated
ETOPOSIDE	NM_000770	cytochrome P450, family 2, subfamily C, polypeptide 8	CYP2C 8	8114683	unrelated
ETOPOSIDE	NM_000771	cytochrome P450, family 2, subfamily C, polypeptide 9	CYP2C 9	8114683	unrelated
ETOPOSIDE	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A 4	12969965, 17279585, 8114683	drug metabolism
ETOPOSIDE	NM_000777	cytochrome P450, family 3, subfamily A, polypeptide 5	CYP3A 5	12969965, 8114683	drug metabolism
ETOPOSIDE	NM_004083	DNA-damage-inducible transcript 3	DDIT3	16298333	
ETOPOSIDE	NM_001963	epidermal growth factor (beta-urogastrone)	EGF	15228094, 16969495	
ETOPOSIDE	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	15228094	
ETOPOSIDE	NM_001007277;NM_004879	etoposide induced 2.4 mRNA	EI24	17374387	
ETOPOSIDE	NM_014805	EPM2A (laforin) interacting protein 1	EPM2AI P1	17374387	
ETOPOSIDE	NM_001005862;NM_004448	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)	ERBB2	15228094	
ETOPOSIDE	NM_001005915;NM_001982	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)	ERBB3	15228094	
ETOPOSIDE	NM_001042599;NM_005235	v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)	ERBB4	15228094	
ETOPOSIDE	NM_001432	epiregulin	EREG	15228094	
ETOPOSIDE	NM_001987	ets variant 6	ETV6	15217836	
ETOPOSIDE	NM_004110;NM_024417	ferredoxin reductase	FDXR	17374387	
ETOPOSIDE	NM_002015	forkhead box O1	FOXO1	17935137	
ETOPOSIDE	NM_001455;NM_201559	forkhead box O3	FOXO3	17935137	
ETOPOSIDE	NM_001924	growth arrest and DNA-damage-inducible, alpha	GADD4 5A	19003803	

ETOPOSIDE	NM_001498	glutamate-cysteine ligase, catalytic subunit	GCLC	10900222	
ETOPOSIDE	NM_002061	glutamate-cysteine ligase, modifier subunit	GCLM	10900222	
ETOPOSIDE	NM_000561;NM_146421	glutathione S-transferase mu 1	GSTM1	15713801	
ETOPOSIDE	NM_000852	glutathione S-transferase pi 1	GSTP1	10900222, 12969965, 15999103, 15999103,10900222	
ETOPOSIDE	NM_001945	heparin-binding EGF-like growth factor	HBEGF	15228094	
ETOPOSIDE	NM_005347	heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)	HSPA5	16298333	
ETOPOSIDE	NM_000875	insulin-like growth factor 1 receptor	IGF1R	15499378	
ETOPOSIDE	NM_002756;NM_145109	mitogen-activated protein kinase kinase 3	MAP2K3	17374387	
ETOPOSIDE	NM_145185	mitogen-activated protein kinase kinase 7	MAP2K7	-	
ETOPOSIDE	NM_005923	mitogen-activated protein kinase kinase kinase 5	MAP3K5	17374387	
ETOPOSIDE	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	17935137	
ETOPOSIDE	NM_001145336;NM_001145337;NM_001145339;NM_001145340;NM_002392;NM_006878;NM_006879;NM_006881;NM_006882	Mdm2 p53 binding protein homolog (mouse)	MDM2	17575151, 17935137	resistance
ETOPOSIDE	NM_001004720;NM_001004722;NM_003581	NCK adaptor protein 2	NCK2	17374387	
ETOPOSIDE	NM_020529	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	NFKBIA	17935137	
ETOPOSIDE	NM_003889;NM_022002;NM_033013	nuclear receptor subfamily 1, group I, member 2	NR1I2	17279585	
ETOPOSIDE	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	17935137, 17935137,16844113	
ETOPOSIDE	NM_004073	polo-like kinase 3 (Drosophila)	PLK3	17374387	
ETOPOSIDE	NM_003981;NM_199413;NM_199414	protein regulator of cytokinesis 1	PRC1	17374387	
ETOPOSIDE	NM_000311;NM_001080121;NM_001080122;NM_001080123;NM_183079	prion protein	PRNP	15386405	
ETOPOSIDE	NM_000314	phosphatase and tensin homolog	PTEN	17935137	
ETOPOSIDE	NM_134424	RAD52 homolog (S. cerevisiae)	RAD52	16417649	
ETOPOSIDE	NM_001142548;NM_003579	RAD54-like (S. cerevisiae)	RAD54L	16417649	

ETOPOSIDE	NM_001145547;NM_032905	RNA binding motif protein 17	RBM17	16061639	resistance
ETOPOSIDE	NM_001001890;NM_001122607;NM_001754	runt-related transcription factor 1	RUNX1	15217836	
ETOPOSIDE	NM_001031680;NM_004350	runt-related transcription factor 3	RUNX3	15756676	
ETOPOSIDE	NM_005980	S100 calcium binding protein P	S100P	18636193	
ETOPOSIDE	NM_001006946;NM_002997	syndecan 1	SDC1	17374387	
ETOPOSIDE	NM_000593	transporter 1, ATP-binding cassette, sub-family B (MDR/TAP)	TAP1	17374387	
ETOPOSIDE	NM_014604	Tax1 (human T-cell leukemia virus type I) binding protein 3	TAX1BP3	17374387	
ETOPOSIDE	NM_001099691;NM_003236	transforming growth factor, alpha	TGFA	15228094	
ETOPOSIDE	NM_021109	thymosin beta 4, X-linked	TMSB4X	16364925	
ETOPOSIDE	NM_003844	tumor necrosis factor receptor superfamily, member 10a	TNFRSF10A	16364925	
ETOPOSIDE	NM_003842;NM_147187	tumor necrosis factor receptor superfamily, member 10b	TNFRSF10B	15964798, 16364925	
ETOPOSIDE	NM_003810	tumor necrosis factor (ligand) superfamily, member 10	TNFSF10	16364925	
ETOPOSIDE	NM_003811	tumor necrosis factor (ligand) superfamily, member 9	TNFSF9	17374387	
ETOPOSIDE	NM_001067	topoisomerase (DNA) II alpha 170kDa	TOP2A	11470519, 11531262, 11676865, 12569090, 16969495, 17575151	
ETOPOSIDE	NM_001068	topoisomerase (DNA) II beta 180kDa	TOP2B	15322234, 16239602	
ETOPOSIDE	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	12082016, 15964798, 18698031	
ETOPOSIDE	NM_004881;NM_147184	tumor protein p53 inducible protein 3	TP53I3	17374387	
ETOPOSIDE	NR_015381;NR_015381;NR_015381;NR_015381;NR_015381;NR_015381;NR_015381;NR_015381	TP53 target 1 (non-protein coding)	TP53TG1	17374387	
ETOPOSIDE	NM_001126240;NM_001126241;NM_001126242;NM_005427	tumor protein p73	TP73	17716971	
ETOPOSIDE	NM_001071	thymidylate synthetase	TYMS	15713801	
ETOPOSIDE	NM_007019;NM_181799;NM_181800;NM_181801;NM_181802;NM_181803	ubiquitin-conjugating enzyme E2C	UBE2C	17374387	

ETOPOSIDE	NM_000463	UDP glucuronosyltransferase 1 family, polypeptide A1	UGT1A1	12969965, 17151191	
ETOPOSIDE	NM_019093	UDP glucuronosyltransferase 1 family, polypeptide A3	UGT1A3	17151191	
ETOPOSIDE	NM_019076	UDP glucuronosyltransferase 1 family, polypeptide A8	UGT1A8	17151191	
ETOPOSIDE	NM_000376;NM_001017535	vitamin D (1,25- dihydroxyvitamin D3) receptor	VDR	12969965, 15713801, 17716971	
ETOPOSIDE	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	18494554	
ETOPOSIDE	NM_000553	Werner syndrome, RecQ helicase-like	WRN	10725663	
ETOPOSIDE	NM_017523;NM_199139	XIAP associated factor 1	XAF1	15843754	
ETOPOSIDE	NM_001167	X-linked inhibitor of apoptosis	XIAP	14666661	
ETOPOSIDE	NM_005431	X-ray repair complementing defective repair in Chinese hamster cells 2	XRCC2	16417649	
ETOPOSIDE	NM_001100118;NM_001100119;NM_005432	X-ray repair complementing defective repair in Chinese hamster cells 3	XRCC3	16417649	
ETOPOSIDE	NM_003401;NM_022406;NM_022550	X-ray repair complementing defective repair in Chinese hamster cells 4	XRCC4	16417649	
ETOPOSIDE	NM_021141	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining)	XRCC5	12384553	
BEXAROTENE	*NM_001121;NM_016824;NM_019903*	*adducin 3 (gamma)*	ADD3	17178900	
BEXAROTENE	NM_000024	adrenergic, beta-2-, receptor, surface	ADRB2	17178900	
BEXAROTENE	NM_001353	aldo-keto reductase family 1, member C1 (dihydrodiol dehydrogenase 1; 20-alpha (3-alpha)-hydroxysteroid dehydrogenase)	AKR1C1	17178900	
BEXAROTENE	NM_003739	aldo-keto reductase family 1, member C3 (3-alpha hydroxysteroid dehydrogenase, type II)	AKR1C3	17178900	
BEXAROTENE	NM_016201	angiomotin like 2	AMOTL2	17178900	
BEXAROTENE	NM_006407	ADP-ribosylation-like factor 6 interacting protein 5	ARL6IP5	17178900	
BEXAROTENE	NM_001673;NM_133436;NM_183356	asparagine synthetase	ASNS	17178900	
BEXAROTENE	NM_004330	BCL2/adenovirus E1B 19kDa interacting protein 2	BNIP2	17178900	

BEXAROTENE	-	-	C10ORF10	17178900	
BEXAROTENE	-	-	C10ORF116	17178900	
BEXAROTENE	NM_001806	CCAAT/enhancer binding protein (C/EBP), gamma	CEBPG	17178900	
BEXAROTENE	-	cytochrome c oxidase II	COX2	17178900	
BEXAROTENE	NM_001902;NM_153742	cystathionase (cystathionine gamma-lyase)	CTH	17178900	
BEXAROTENE	NM_004390;NM_148979	cathepsin H	CTSH	17178900	
BEXAROTENE	NM_018947	cytochrome c, somatic	CYCS	17178900	
BEXAROTENE	NM_000783;NM_057157	cytochrome P450, family 26, subfamily A, polypeptide 1	CYP26A1	17178900	
BEXAROTENE	NM_001554	cysteine-rich, angiogenic inducer, 61	CYR61	17178900	
BEXAROTENE	NM_019058	DNA-damage-inducible transcript 4	DDIT4	17178900	
BEXAROTENE	NM_004753	dehydrogenase/reductase (SDR family) member 3	DHRS3	17178900	
BEXAROTENE	NM_012242	dickkopf homolog 1 (Xenopus laevis)	DKK1	17178900	
BEXAROTENE	NM_004417	dual specificity phosphatase 1	DUSP1	17178900	
BEXAROTENE	NM_004419	dual specificity phosphatase 5	DUSP5	17178900	
BEXAROTENE	NM_004430	early growth response 3	EGR3	17178900	
BEXAROTENE	NM_005801	eukaryotic translation initiation factor 1	EIF1	17178900	
BEXAROTENE	NM_004431	EPH receptor A2	EPHA2	17178900	
BEXAROTENE	NM_002047	glycyl-tRNA synthetase	GARS	17178900	
BEXAROTENE	NM_001001994;NM_001001995;NM_001001996;NM_005278	glycoprotein M6B	GPM6B	17178900	
BEXAROTENE	NM_001010989;NM_001010990;NM_014685	homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1	HERPUD1	17178900	
BEXAROTENE	NM_002165;NM_181353	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein	ID1	17178900	
BEXAROTENE	NM_004907	immediate early response 2	IER2	17178900	
BEXAROTENE	NM_002178	insulin-like growth factor binding protein 6	IGFBP6	17178900	
BEXAROTENE	NM_000585;NM_172174	interleukin 15	IL15	17178900	
BEXAROTENE	NM_000888	integrin, beta 6	ITGB6	17178900	
BEXAROTENE	NM_004867	integral membrane protein 2A	ITM2A	17178900	
BEXAROTENE	NM_001099952;NM_002222	inositol 1,4,5-triphosphate receptor, type 1	ITPR1	17178900	
BEXAROTENE	NM_001032282;NM_005655	Kruppel-like factor 10	KLF10	17178900	
BEXAROTENE	NM_002275	keratin 15	KRT15	17178900	
BEXAROTENE	NM_000422	keratin 17	KRT17	17178900	
BEXAROTENE	NM_002318	lysyl oxidase-like 2	LOXL2	17178900	

BEXAROTENE	NM_001031804;NM_005360	v-maf musculoaponeurotic fibrosarcoma oncogene homolog (avian)	MAF	17178900	
BEXAROTENE	NM_001161572;NM_001161573;NM_001161574;NM_012323;NM_152878	v-maf musculoaponeurotic fibrosarcoma oncogene homolog F (avian)	MAFF	17178900	
BEXAROTENE	NM_006818	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 11	MLLT11	17178900	
BEXAROTENE	NM_002421	matrix metallopeptidase 1 (interstitial collagenase)	MMP1	17178900	
BEXAROTENE	NM_006636	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2, methenyltetrahydrofolate cyclohydrolase	MTHFD2	17178900	
BEXAROTENE	NM_002539	ornithine decarboxylase 1	ODC1	17178900	
BEXAROTENE	NM_022817	period homolog 2 (Drosophila)	PER2	17178900	
BEXAROTENE	NM_000930;NM_033011	plasminogen activator, tissue	PLAT	17178900	
BEXAROTENE	NM_001005376;NM_001005377;NM_002659	plasminogen activator, urokinase receptor	PLAUR	17178900	
BEXAROTENE	NM_000935;NM_182943	procollagen-lysine, 2-oxoglutarate 5-dioxygenase 2	PLOD2	17178900	
BEXAROTENE	NM_020143	partner of NOB1 homolog (S. cerevisiae)	PNO1	17178900	
BEXAROTENE	NM_006813	proline-rich nuclear receptor coactivator 1	PNRC1	17178900	
BEXAROTENE	NM_000965;NM_016152	retinoic acid receptor, beta	RARB	17178900	
BEXAROTENE	NM_000321	retinoblastoma 1	RB1	16273314	
BEXAROTENE	NM_021976	retinoid X receptor, beta	RXRB	-	
BEXAROTENE	NM_002965	S100 calcium binding protein A9	S100A9	17178900	
BEXAROTENE	NM_005063	stearoyl-CoA desaturase (delta-9-desaturase)	SCD	17178900	
BEXAROTENE	NM_003016	splicing factor, arginine/serine-rich 2	SFRS2	17178900	
BEXAROTENE	NM_005067	seven in absentia homolog 2 (Drosophila)	SIAH2	17178900	
BEXAROTENE	NM_003045	solute carrier family 7 (cationic amino acid transporter, y+ system), member 1	SLC7A1	17178900	
BEXAROTENE	NM_003486	solute carrier family 7 (cationic amino acid transporter, y+ system), member 5	SLC7A5	17178900	
BEXAROTENE	NM_001001419;NM_001001420;NM_005903	SMAD family member 5	SMAD5	17178900	
BEXAROTENE	NM_003118	secreted protein, acidic, cysteine-rich (osteonectin)	SPARC	17178900	
BEXAROTENE	NM_004613;NM_198951	transglutaminase 2 (C polypeptide, protein-glutamine-gamma-glutamyltransferase)	TGM2	17178900	
BEXAROTENE	NM_014220	transmembrane 4 L six family member 1	TM4SF1	17178900	
BEXAROTENE	NM_001015881;NM_004089;NM_19	TSC22 domain family, member 3	TSC22	17178900	

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BEXAROTENE	NM_003115	UDP-N-acteylglucosamine pyrophosphorylase 1	UAP1	17178900	
BEXAROTENE	NM_003761	vesicle-associated membrane protein 8 (endobrevin)	VAMP8	17178900	
BEXAROTENE	NM_001079539;NM_005080	X-box binding protein 1	XBP1	17178900	
CETUXIMAB	NM_001963	epidermal growth factor (beta-urogastrone)	EGF	-	
CETUXIMAB	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	-	target
CETUXIMAB	NM_001432	epiregulin	EREG	-	
TRASTUZUMAB	NM_001963	epidermal growth factor (beta-urogastrone)	EGF	-	
TRASTUZUMAB	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	-	resistance
TRASTUZUMAB	NM_001005862;NM_004448	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)	ERBB2	-	target
TRASTUZUMAB	NM_001432	epiregulin	EREG	-	
RITUXIMAB	NM_021950;NM_152866	membrane-spanning 4-domains, subfamily A, member 1	MS4A1	-	target
TOSITUMOMAB	NM_021950;NM_152866	membrane-spanning 4-domains, subfamily A, member 1	MS4A1	-	target
ALEMTUZUMAB	NM_001803	CD52 molecule	CD52	-	target
BEVACIZUMAB	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	-	target
EDRECOLOMAB	-	-	TACSTD1	-	target
GEMTUZUMAB	NM_001082618;NM_001772	CD33 molecule	CD33	-	target
AXITINIB	NM_001160030;NM_001160031;NM_002019	fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor)	FLT1	-	target
AXITINIB	NM_002020;NM_182925	fms-related tyrosine kinase 4	FLT4	-	target
AXITINIB	NM_002253	kinase insert domain receptor (a type III receptor tyrosine kinase)	KDR	-	target
AXITINIB	NM_000222;NM_001093772	v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog	KIT	-	target
AXITINIB	NM_006206	platelet-derived growth factor receptor, alpha polypeptide	PDGFRA	-	target
AXITINIB	NM_002609	platelet-derived growth factor receptor, beta	PDGFR	-	target

		polypeptide	B		
BOSUTINIB	-	-	ABL	17114238	
BOSUTINIB	NM_005157;NM_007313	c-abl oncogene 1, receptor tyrosine kinase	ABL1	-	target
BOSUTINIB	NM_004327;NM_021574	breakpoint cluster region	BCR	-	
BOSUTINIB	NM_053056	cyclin D1	CCND1	16489032	
BOSUTINIB	NM_004360	cadherin 1, type 1, E-cadherin (epithelial)	CDH1	16489032	
BOSUTINIB	NM_001098209;NM_001098210;NM_001904	catenin (cadherin-associated protein), beta 1, 88kDa	CTNNB1	16489032	
BOSUTINIB	NM_005417;NM_198291	v-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)	SRC	16489032	target
BOSUTINIB	NM_001083962;NM_003199	transcription factor 4	TCF4	16489032	
CEDIRANIB	NM_001160030;NM_001160031;NM_002019	fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor)	FLT1	-	target
CEDIRANIB	NM_002020;NM_182925	fms-related tyrosine kinase 4	FLT4	-	target
DASATINIB	NM_005157;NM_007313	c-abl oncogene 1, receptor tyrosine kinase	ABL1	-	target
DASATINIB	NM_001100108;NM_001136000;NM_001136001;NM_005158;NM_007314	v-abl Abelson murine leukemia viral oncogene homolog 2 (arg, Abelson-related gene)	ABL2	-	target ?
DASATINIB	NM_004327;NM_021574	breakpoint cluster region	BCR	-	
DASATINIB	NM_004431	EPH receptor A2	EPHA2	-	target
DASATINIB	NM_002037;NM_153047;NM_153048	FYN oncogene related to SRC, FGR, YES	FYN	-	
DASATINIB	NM_000222;NM_001093772	v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog	KIT	-	target
DASATINIB	NM_001042771;NM_005356	lymphocyte-specific protein tyrosine kinase	LCK	-	target
DASATINIB	NM_002609	platelet-derived growth factor receptor, beta polypeptide	PDGFRB	-	target
DASATINIB	NM_005417;NM_198291	v-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)	SRC	-	target
DASATINIB	NM_012448	signal transducer and activator of transcription 5B	STAT5B	-	
DASATINIB	NM_005433	v-yes-1 Yamaguchi sarcoma viral oncogene homolog 1	YES1	-	
ERLOTINIB	NM_001963	epidermal growth factor (beta-urogastrone)	EGF	-	
ERLOTINIB	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	12907618	target
ERLOTINIB	NM_001432	epiregulin	EREG	-	
GEFITINIB	NM_004827	ATP-binding cassette, sub-family G (WHITE), member	ABCG2	17938326	resistance

		2			
GEFITINIB	NM_000674;NM_001048230	adenosine A1 receptor	ADORA1	16685379	
GEFITINIB	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	17805209	
GEFITINIB	NM_001657	amphiregulin	AREG	15496427,16230376, 15723263	sensitivity/resistance
GEFITINIB	NM_020371	apoptosis, caspase activation inhibitor	AVEN	15496427	
GEFITINIB	NM_006568	cell growth regulator with ring finger domain 1	CGRRF1	16685379	
GEFITINIB	NM_001130105;NM_005713;NM_031361	collagen, type IV, alpha 3 (Goodpasture antigen) binding protein	COL4A3BP	15496427	
GEFITINIB	NM_014325	coronin, actin binding protein, 1C	CORO1C	15496427	
GEFITINIB	NM_000761	cytochrome P450, family 1, subfamily A, polypeptide 2	CYP1A2	15788367	unrelated
GEFITINIB	NM_000769	cytochrome P450, family 2, subfamily C, polypeptide 19	CYP2C19	15788367	unrelated
GEFITINIB	NM_000771	cytochrome P450, family 2, subfamily C, polypeptide 9	CYP2C9	15788367	unrelated
GEFITINIB	NM_000106;NM_001025161	cytochrome P450, family 2, subfamily D, polypeptide 6	CYP2D6	15788367	drug metabolism
GEFITINIB	NM_000774	cytochrome P450, family 2, subfamily F, polypeptide 1	CYP2F1	16685379	
GEFITINIB	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A4	15788367	drug metabolism
GEFITINIB	NM_000777	cytochrome P450, family 3, subfamily A, polypeptide 5	CYP3A5	15788367	drug metabolism
GEFITINIB	NM_004090	dual specificity phosphatase 3	DUSP3	15496427	
GEFITINIB	NM_001395	dual specificity phosphatase 9	DUSP9	16685379	
GEFITINIB	NM_005225	E2F transcription factor 1	E2F1	18347146	
GEFITINIB	NM_001963	epidermal growth factor (beta-urogastrone)	EGF	17805209, 17898861	
GEFITINIB	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	15723263, 15976335, 16361624, 17290066, 17898861, 17938326	target
GEFITINIB	NM_000121	erythropoietin receptor	EPOR	16685379	
GEFITINIB	NM_001159969;NM_001981	epidermal growth factor receptor pathway substrate 15	EPS15	16685379	
GEFITINIB	NM_001005862;NM_004448	v-erb-b2 erythroblastic leukemia viral oncogene	ERBB2	17898861	sensitivity

		homolog 2, neuro/glioblastoma derived oncogene homolog (avian)			
GEFITINIB	NM_001432	epiregulin	EREG	-	
GEFITINIB	NM_000125;NM_001122740;NM_001122741;NM_001122742	estrogen receptor 1	ESR1	16261397	
GEFITINIB	NM_020996	fibroblast growth factor 6	FGF6	16685379	
GEFITINIB	NM_001924	growth arrest and DNA-damage-inducible, alpha	GADD45A	16685379	
GEFITINIB	NM_006705	growth arrest and DNA-damage-inducible, gamma	GADD45G	16685379	
GEFITINIB	NM_002047	glycyl-tRNA synthetase	GARS	16685379	
GEFITINIB	NM_001498	glutamate-cysteine ligase, catalytic subunit	GCLC	15496427	
GEFITINIB	NM_005273	guanine nucleotide binding protein (G protein), beta polypeptide 2	GNB2	16685379	
GEFITINIB	NM_000180	guanylate cyclase 2D, membrane (retina-specific)	GUCY2D	16685379	
GEFITINIB	NM_001945	heparin-binding EGF-like growth factor	HBEGF	15723263	altered by gefitinib
GEFITINIB	NM_002038;NM_022872;NM_022873	interferon, alpha-inducible protein 6	IFI6	16685379	
GEFITINIB	NM_000598;NM_001013398	insulin-like growth factor binding protein 3	IGFBP3	-	
GEFITINIB	NM_000584	interleukin 8	IL8	15723263	altered by gefitinib
GEFITINIB	NM_001003679;NM_001003680;NM_002303	leptin receptor	LEPR	16685379	
GEFITINIB	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	17805209, 17898861	
GEFITINIB	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	17805209, 17898861	
GEFITINIB	NM_000249	mutL homolog 1, colon cancer, nonpolyposis type 2 (E. coli)	MLH1	16685379	
GEFITINIB	NM_003998	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	NFKB1	16685379	
GEFITINIB	NM_002523	neuronal pentraxin II	NPTX2	16685379	
GEFITINIB	NM_006177	neural retina leucine zipper	NRL	16685379	
GEFITINIB	NM_003999	oncostatin M receptor	OSMR	15496427	
GEFITINIB	NM_003311	pleckstrin homology-like domain, family A, member 2	PHLDA2	15496427	

GEFITINIB	NM_000314	phosphatase and tensin homolog	PTEN	-	
GEFITINIB	NM_001004128;NM_002826	quiescin Q6 sulfhydryl oxidase 1	QSOX1	16685379	altered by gefitinib
GEFITINIB	NM_016090	RNA binding motif protein 7	RBM7	15496427	
GEFITINIB	NM_002945	replication protein A1, 70kDa	RPA1	16685379	
GEFITINIB	NM_006142	stratifin	SFN	16685379	
GEFITINIB	NM_003036	v-ski sarcoma viral oncogene homolog (avian)	SKI	16685379	
GEFITINIB	NM_001099691;NM_003236	transforming growth factor, alpha	TGFA	15723263, 16230376	resistance
GEFITINIB	NM_001066	tumor necrosis factor receptor superfamily, member 1B	TNFRSF1B	16685379	
GEFITINIB	NM_001071	thymidylate synthetase	TYMS	18347146	
IMATINIB	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	15970668	resistance
IMATINIB	NM_004827	ATP-binding cassette, sub-family G (WHITE), member 2	ABCG2	15970668	resistance
IMATINIB	NM_005157;NM_007313	c-abl oncogene 1, receptor tyrosine kinase	ABL1	15329907	target
IMATINIB	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	16740780	activity altered by imatinib
IMATINIB	NM_001191;NM_138578	BCL2-like 1	BCL2L1	16960866	resistance
IMATINIB	NM_004327;NM_021574	breakpoint cluster region	BCR	15329907	
IMATINIB	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	16254145, 16254145,16166298	resistance
IMATINIB	NM_001136017;NM_001136125;NM_001136126;NM_001760	cyclin D3	CCND3	15100154	
IMATINIB	NM_001781	CD69 molecule	CD69	15100154	
IMATINIB	NM_005211	colony stimulating factor 1 receptor	CSF1R	-	target
IMATINIB	NM_001954;NM_013993;NM_013994	discoidin domain receptor tyrosine kinase 1	DDR1	-	target
IMATINIB	NM_000142;NM_022965	fibroblast growth factor receptor 3	FGFR3	14562121	
IMATINIB	-	-	FRAP1	16740780	activity altered by imatinib
IMATINIB	NM_002133	heme oxygenase (decycling) 1	HMOX1	17420286	resistance
IMATINIB	NM_000618;NM_001111283;NM_001111284;NM_001111285	insulin-like growth factor 1 (somatomedin C)	IGF1	16740780	
IMATINIB	NM_000417	interleukin 2 receptor, alpha	IL2RA	15100154	
IMATINIB	NM_000222;NM_001093772	v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog	KIT	17420286	target V560G D816V

IMATINIB	NM_001042771;NM_005356	lymphocyte-specific protein tyrosine kinase	LCK	15100154	target
IMATINIB	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	15100154	activity altered by imatinib
IMATINIB	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	15100154	activity altered by imatinib
IMATINIB	NM_003998	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	NFKB1	15100154	activity altered by imatinib
IMATINIB	NM_001007792;NM_001012331;NM_002529	neurotrophic tyrosine kinase, receptor, type 1	NTRK1	-	activity altered by imatinib
IMATINIB	NM_006206	platelet-derived growth factor receptor, alpha polypeptide	PDGFRA	17614352	target
IMATINIB	NM_002609	platelet-derived growth factor receptor, beta polypeptide	PDGFRB	-	target
IMATINIB	NM_000321	retinoblastoma 1	RB1	15100154	
IMATINIB	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	15100154	activity altered by imatinib
IMATINIB	NM_020630;NM_020975	ret proto-oncogene	RET	15709206	
IMATINIB	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	16740780	altered by *imatinib*
IMATINIB	NM_000378;NM_024424;NM_024425;NM_024426	Wilms tumor 1	WT1	15329907	resistance
LAPATINIB	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	15665275, 16091755	altered by lapatinib
LAPATINIB	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	16091755	altered by lapatinib
LAPATINIB	NM_053056	cyclin D1	CCND1	15665275	altered by lapatinib
LAPATINIB	NM_001238;NM_057182	cyclin E1	CCNE1	15665275	altered by lapatinib
LAPATINIB	NM_001798;NM_052827	cyclin-dependent kinase 2	CDK2	15665275	altered by lapatinib
LAPATINIB	NM_004064	cyclin-dependent kinase inhibitor 1B (p27, Kip1)	CDKN1B	15665275	altered by lapatinib
LAPATINIB	NM_001963	epidermal growth factor (beta-urogastrone)	EGF	-	
LAPATINIB	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	15665275	target

LAPATINIB	NM_001005862;NM_004448	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)	ERBB2	15665275, 16091755	target
LAPATINIB	NM_001432	epiregulin	EREG	-	
LAPATINIB	NM_000125;NM_001122740;NM_001122741;NM_001122742	estrogen receptor 1	ESR1	15665275	
LAPATINIB	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	16091755	altered by lapatinib
LAPATINIB	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	16091755	altered by lapatinib
LAPATINIB	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	-	resistance
LAPATINIB	-	-	PI3KCA	-	resistance
LAPATINIB	NM_000314	phosphatase and tensin homolog	PTEN	-	sensitivity
LESTAURTINIB	NM_004119	fms-related tyrosine kinase 3	FLT3	-	target
NILOTINIB	NM_005157;NM_007313	c-abl oncogene 1, receptor tyrosine kinase	ABL1	-	target
NILOTINIB	NM_004327;NM_021574	breakpoint cluster region	BCR	-	
NILOTINIB	NM_000222;NM_001093772	v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog	KIT	-	target
NILOTINIB	NM_006206	platelet-derived growth factor receptor, alpha polypeptide	PDGFRA	-	target
NILOTINIB	NM_002609	platelet-derived growth factor receptor, beta polypeptide	PDGFRB	-	target
SEMAXANIB	NM_002253	kinase insert domain receptor (a type III receptor tyrosine kinase)	KDR	-	target
SORAFENIB	NM_001188	BCL2-antagonist/killer 1	BAK1	16007148	death pathway
SORAFENIB	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	16007148	death pathway
SORAFENIB	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	16007148	altered by soraf
SORAFENIB	NM_001191;NM_138578	BCL2-like 1	BCL2L1	16007148	altered by soraf
SORAFENIB	NM_006538;NM_138621;NM_207002	BCL2-like 11 (apoptosis facilitator)	BCL2L11	16007148	death pathway
SORAFENIB	NM_001196;NM_197966;NM_197967	BH3 interacting domain death agonist	BID	16007148	
SORAFENIB	NM_004333	v-raf murine sarcoma viral oncogene homolog B1	BRAF	-	target
SORAFENIB	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	16007148	death pathway

SORAFENIB	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	16007148	
SORAFENIB	NM_018947	cytochrome c, somatic	CYCS	16007148	death pathway
SORAFENIB	NM_001433	endoplasmic reticulum to nucleus signaling 1	ERN1	-	resistance
SORAFENIB	NM_004119	fms-related tyrosine kinase 3	FLT3	-	target
SORAFENIB	NM_002020;NM_182925	fms-related tyrosine kinase 4	FLT4	-	target
SORAFENIB	NM_002253	kinase insert domain receptor (a type III receptor tyrosine kinase)	KDR	-	target
SORAFENIB	NM_000222;NM_001093772	v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog	KIT	-	target
SORAFENIB	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	-	resistance
SORAFENIB	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	-	resistance
SORAFENIB	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	16007148	altered by soraf
SORAFENIB	NM_002609	platelet-derived growth factor receptor, beta polypeptide	PDGFRB	-	target
SORAFENIB	NM_002880	v-raf-1 murine leukemia viral oncogene homolog 1	RAF1	-	target
SORAFENIB	NM_001167	X-linked inhibitor of apoptosis	XIAP	16007148	altered by soraf
SUNITINIB	NM_004333	v-raf murine sarcoma viral oncogene homolog B1	BRAF	-	
SUNITINIB	NM_005211	colony stimulating factor 1 receptor	CSF1R	-	target
SUNITINIB	NM_001160030;NM_001160031;NM_002019	fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor)	FLT1	-	target
SUNITINIB	NM_004119	fms-related tyrosine kinase 3	FLT3	-	target
SUNITINIB	NM_002020;NM_182925	fms-related tyrosine kinase 4	FLT4	-	target
SUNITINIB	NM_002253	kinase insert domain receptor (a type III receptor tyrosine kinase)	KDR	-	target
SUNITINIB	NM_000222;NM_001093772	v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog	KIT	-	target
SUNITINIB	NM_006206	platelet-derived growth factor receptor, alpha polypeptide	PDGFRA	-	target
SUNITINIB	NM_002609	platelet-derived growth factor receptor, beta polypeptide	PDGFRB	-	target
SUNITINIB	NM_002880	v-raf-1 murine leukemia viral oncogene homolog 1	RAF1	-	
SUNITINIB	NM_020630;NM_020975	ret proto-oncogene	RET	-	target

VANDETANIB	NM_001963	epidermal growth factor (beta-urogastrone)	EGF	-	
VANDETANIB	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	-	target
VANDETANIB	NM_001432	epiregulin	EREG	-	
VANDETANIB	NM_002253	kinase insert domain receptor (a type III receptor tyrosine kinase)	KDR	-	target
TEMSIROLIMUS	NM_053056	cyclin D1	CCND1	16954435	resistance?
TEMSIROLIMUS	NM_004095	eukaryotic translation initiation factor 4E binding protein 1	EIF4EBP1	16033649	altered by temsirolimus
TEMSIROLIMUS	NM_000125;NM_001122740;NM_001122741;NM_001122742	estrogen receptor 1	ESR1	16954435	
TEMSIROLIMUS	-	-	FRAP1	16033649	target
TEMSIROLIMUS	NM_000321	retinoblastoma 1	RB1	16954435	
TEMSIROLIMUS	NM_003161	ribosomal protein S6 kinase, 70kDa, polypeptide 1	RPS6KB1	16954435, 16954435,16033649	altered by temsirolimus
EVEROLIMUS	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	16033851	altered by everolimus
EVEROLIMUS	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	-	resistance
EVEROLIMUS	NM_053056	cyclin D1	CCND1	16033851	altered by everolimus
EVEROLIMUS	NM_001759	cyclin D2	CCND2	16033851	altered by everolimus
EVEROLIMUS	NM_001136017;NM_001136125;NM_001136126;NM_001760	cyclin D3	CCND3	16033851	altered by everolimus
EVEROLIMUS	NM_001130678;NM_001130679;NM_001968	eukaryotic translation initiation factor 4E	EIF4E	16033851	altered by everolimus
EVEROLIMUS	NM_004095	eukaryotic translation initiation factor 4E binding protein 1	EIF4EBP1	16033851	
EVEROLIMUS	NM_004953;NM_182917;NM_198241;NM_198242;NM_198244	eukaryotic translation initiation factor 4 gamma, 1	EIF4G1	16033851	altered by everolimus
EVEROLIMUS	-	-	FRAP1	16033851	target
EVEROLIMUS	NM_000321	retinoblastoma 1	RB1	16033851	
EVEROLIMUS	NM_001010	ribosomal protein S6	RPS6	16033851	
EVEROLIMUS	NM_003161	ribosomal protein S6 kinase, 70kDa, polypeptide 1	RPS6KB1	16033851	altered by everolimus
FLAVOPIRIDOL	NM_004323	BCL2-associated athanogene	BAG1	15972445	altered by flavopiridol

FLAVOPIRIDOL	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	12517783, 15634644, 15770523	unrelated
FLAVOPIRIDOL	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	12170773, 12517783, 15770523, 15972445	unrelated
FLAVOPIRIDOL	NM_001191;NM_138578	BCL2-like 1	BCL2L1	12517783, 15634644	altered by flavopiridol
FLAVOPIRIDOL	NM_001196;NM_197966;NM_197967	BH3 interacting domain death agonist	BID	12170773, 15634644	unrelated
FLAVOPIRIDOL	NM_001165;NM_182962	baculoviral IAP repeat-containing 3	BIRC3	12517783	altered by flavopiridol
FLAVOPIRIDOL	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	12517783, 16012789	altered by flavopiridol
FLAVOPIRIDOL	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	12170773, 12517783, 15634644, 15770523, 16012789	death pathway
FLAVOPIRIDOL	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	15634644, 16012789	unrelated
FLAVOPIRIDOL	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	12170773, 15634644	death pathway
FLAVOPIRIDOL	NM_031966	cyclin B1	CCNB1	12517783	sensitivity
FLAVOPIRIDOL	NM_053056	cyclin D1	CCND1	12517783, 15634644	sensitivity
FLAVOPIRIDOL	NM_001130829;NM_001786;NM_033379	cell division cycle 2, G1 to S and G2 to M	CDC2	12517783	target
FLAVOPIRIDOL	NM_001798;NM_052827	cyclin-dependent kinase 2	CDK2	12517783	target
FLAVOPIRIDOL	NM_000075	cyclin-dependent kinase 4	CDK4	12517783	target
FLAVOPIRIDOL	NM_004935	cyclin-dependent kinase 5	CDK5	-	
FLAVOPIRIDOL	NM_001145306;NM_001259	cyclin-dependent kinase 6	CDK6	-	
FLAVOPIRIDOL	NM_001799	cyclin-dependent kinase 7	CDK7	-	
FLAVOPIRIDOL	NM_001260	cyclin-dependent kinase 8	CDK8	-	
FLAVOPIRIDOL	NM_001261	cyclin-dependent kinase 9	CDK9	-	target
FLAVOPIRIDOL	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	15180955, 15770523	altered by flavopiridol
FLAVOPIRIDOL	NM_004064	cyclin-dependent kinase inhibitor 1B (p27, Kip1)	CDKN1B	15180955	
FLAVOPIRIDOL	NM_018947	cytochrome c, somatic	CYCS	12170773, 12170773,12517783, 15634644	death pathway
FLAVOPIRIDOL	NM_019887;NM_138929	diablo homolog (Drosophila)	DIABLO	12517783, 15634644	death pathway
FLAVOPIRIDOL	NM_001963	epidermal growth factor (beta-urogastrone)	EGF	-	

FLAVOPIRIDOL	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	-	
FLAVOPIRIDOL	NM_001432	epiregulin	EREG	-	
FLAVOPIRIDOL	NM_002105	H2A histone family, member X	H2AFX	15078984	
FLAVOPIRIDOL	NM_013247;NM_145074	HtrA serine peptidase 2	HTRA2	12517783	death pathway
FLAVOPIRIDOL	NM_001315;NM_139012;NM_139013;NM_139014	mitogen-activated protein kinase 14	MAPK14	15634644	
FLAVOPIRIDOL	NM_002750;NM_139046;NM_139047;NM_139049	mitogen-activated protein kinase 8	MAPK8	15634644	
FLAVOPIRIDOL	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	12517783, 15634644, 15972445,12517783	altered by flavopiridol
FLAVOPIRIDOL	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	12170773, 15634644, 15770523, 15972445,12517783,12170773, 16012789	
FLAVOPIRIDOL	NM_005609	phosphorylase, glycogen, muscle	PYGM	-	
FLAVOPIRIDOL	NM_000321	retinoblastoma 1	RB1	15078984, 15180955, 15297405	
FLAVOPIRIDOL	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	15180955, 15297405	unrelated
FLAVOPIRIDOL	NM_001167	X-linked inhibitor of apoptosis	XIAP	12517783, 15972445,12517783, 15972445,15385934,12517783	altered by flavopiridol
ROSCOVITINE	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	16230394, 16275999	death pathway
ROSCOVITINE	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	16230394	altered by roscovitine
ROSCOVITINE	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	16140939	death pathway
ROSCOVITINE	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	16140939	death pathway
ROSCOVITINE	NM_001130829;NM_001786;NM_033379	cell division cycle 2, G1 to S and G2 to M	CDC2	15231455,15	target
ROSCOVITINE	NM_001798;NM_052827	cyclin-dependent kinase 2	CDK2	-	target
ROSCOVITINE	NM_000075	cyclin-dependent kinase 4	CDK4	15741232	
ROSCOVITINE	NM_004935	cyclin-dependent kinase 5	CDK5	15741232	target
ROSCOVITINE	NM_001145306;NM_001259	cyclin-dependent kinase 6	CDK6	15741232	
ROSCOVITINE	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	16275999	altered by roscovitine
ROSCOVITINE	NM_018947	cytochrome c, somatic	CYCS	16140939, 16275999	death pathway
ROSCOVITINE	NM_019887;NM_138929	diablo homolog (Drosophila)	DIABLO	16275999	

ROSCOVITINE	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	16275999	altered by roscovitine
ROSCOVITINE	-	-	PDCD8	16275999	death pathway
ROSCOVITINE	NM_000321	retinoblastoma 1	RB1	14653808, 15231455, 15741232	altered by roscovitine
ROSCOVITINE	NM_003109;NM_138473	Sp1 transcription factor	SP1	14653808	altered by roscovitine
ROSCOVITINE	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	16003486,16	sensitivity
ROSCOVITINE	NM_001167	X-linked inhibitor of apoptosis	XIAP	16140939,16230394, 16275999	altered by roscovitine
AFLIBERCEPT	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	-	target
DENILEUKIN DIFTITOX	NM_000417	interleukin 2 receptor, alpha	IL2RA	-	target
DENILEUKIN DIFTITOX	NM_000878	interleukin 2 receptor, beta	IL2RB	-	target
DENILEUKIN DIFTITOX	NM_000206	interleukin 2 receptor, gamma (severe combined immunodeficiency)	IL2RG	-	target
ARSENIC TRIOXIDE	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	15979894, 15979894,14642128	resistance
ARSENIC TRIOXIDE	NM_004827	ATP-binding cassette, sub-family G (WHITE), member 2	ABCG2	17547211	resistance
ARSENIC TRIOXIDE	NM_005157;NM_007313	c-abl oncogene 1, receptor tyrosine kinase	ABL1	14633726	
ARSENIC TRIOXIDE	NM_006111	acetyl-Coenzyme A acyltransferase 2	ACAA2	15761015	
ARSENIC TRIOXIDE	NM_001116	adenylate cyclase 9	ADCY9	15761015	
ARSENIC TRIOXIDE	NM_001134647;NM_198595	actin filament associated protein 1	AFAP1	15761015	
ARSENIC TRIOXIDE	NM_005100;NM_144497	A kinase (PRKA) anchor protein 12	AKAP12	17547211	
ARSENIC	NM_001628	aldo-keto reductase family 1, member B1 (aldose	AKR1B	17547211	

TRIOXIDE		reductase)	1		
ARSENIC TRIOXIDE	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	16882451, 17077332	
ARSENIC TRIOXIDE	NM_000688;NM_199166	aminolevulinate, delta-, synthase 1	ALAS1	15725085	
ARSENIC TRIOXIDE	NM_005589	aldehyde dehydrogenase 6 family, member A1	ALDH6A1	17547211	
ARSENIC TRIOXIDE	NM_005165	aldolase C, fructose-bisphosphate	ALDOC	15725085	
ARSENIC TRIOXIDE	NM_018466	asparagine-linked glycosylation 13 homolog (S. cerevisiae)	ALG13	15761015	
ARSENIC TRIOXIDE	NM_001629	arachidonate 5-lipoxygenase-activating protein	ALOX5AP	15761015,15	
ARSENIC TRIOXIDE	NM_001149;NM_020987	ankyrin 3, node of Ranvier (ankyrin G)	ANK3	15761015	
ARSENIC TRIOXIDE	NM_001083625;NM_015208	ankyrin repeat domain 12	ANKRD12	15761015	
ARSENIC TRIOXIDE	NM_001150	alanyl (membrane) aminopeptidase	ANPEP	15949261	
ARSENIC TRIOXIDE	NM_001002857;NM_001002858;NM_001136015;NM_004039	annexin A2	ANXA2	17547211	
ARSENIC TRIOXIDE	NM_001284	adaptor-related protein complex 3, sigma 1 subunit	AP3S1	15761015	
ARSENIC TRIOXIDE	NM_020980	aquaporin 9	AQP9	15336539, 16968895	
ARSENIC TRIOXIDE	NM_015161	ADP-ribosylation factor-like 6 interacting protein 1	ARL6IP1	14703492	
ARSENIC TRIOXIDE	NM_006407	ADP-ribosylation-like factor 6 interacting protein 5	ARL6IP5	16430862, 16468075	
ARSENIC TRIOXIDE	-	-	ARL7	15725085	
ARSENIC TRIOXIDE	NM_025139	armadillo repeat containing 9	ARMC9	15761015	
ARSENIC TRIOXIDE	NM_001673;NM_133436;NM_183356	asparagine synthetase	ASNS	17547211	
ARSENIC TRIOXIDE	NM_000050;NM_054012	argininosuccinate synthetase 1	ASS1	15761015,15	
ARSENIC	NM_001001787;NM_001677	ATPase, Na+/K+ transporting, beta 1 polypeptide	ATP1B	15761015	

TRIOXIDE			1		
ARSENIC TRIOXIDE	NM_001001323;NM_001682	ATPase, Ca++ transporting, plasma membrane 1	ATP2B1	12852829,18	
ARSENIC TRIOXIDE	NM_001001485;NM_001001486;NM_001001487;NM_014382	ATPase, Ca++ transporting, type 2C, member 1	ATP2C1	-	
ARSENIC TRIOXIDE	NM_001001937;NM_004046	ATP synthase, H+ transporting, mitochondrial F1 complex, alpha subunit 1, cardiac muscle	ATP5A1	15949261	
ARSENIC TRIOXIDE	-	ATP synthase 6; ATPase subunit 6	ATP6	14703492, 15949261	
ARSENIC TRIOXIDE	NM_001105529;NM_006095	ATPase, aminophospholipid transporter (APLT), class I, type 8A, member 1	ATP8A1	15761015	
ARSENIC TRIOXIDE	NM_001184	ataxia telangiectasia and Rad3 related	ATR	16891316	
ARSENIC TRIOXIDE	NM_001185	alpha-2-glycoprotein 1, zinc-binding	AZGP1	17547211	
ARSENIC TRIOXIDE	NM_021813	BTB and CNC homology 1, basic leucine zipper transcription factor 2	BACH2	15725885	
ARSENIC TRIOXIDE	NM_012342	BMP and activin membrane-bound inhibitor homolog (Xenopus laevis)	BAMBI	15725885	
ARSENIC TRIOXIDE	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	11135700, 11775218, 15622746, 15665116, 16010437,16867262, 16020671, 16867262, 16882451, 16972261	
ARSENIC TRIOXIDE	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	11775218, 12490120,16105982,11780464,	
(following) 16818652,11589617,11135700,11775218,12845720, 15979894,16029599, 16007134,16904648,11775218, 16010437,16867262, 16818652, 16867262, 16904648,15622746,11775218, 16966277					
ARSENIC TRIOXIDE	NM_001114735;NM_004049	BCL2-related protein A1	BCL2A1	12130515	
ARSENIC TRIOXIDE	NM_001191;NM_138578	BCL2-like 1	BCL2L1	11468182, 15622746, 16105982,15665116	
ARSENIC TRIOXIDE	NM_017429	beta-carotene 15,15'-monooxygenase 1	BCMO1	15761015	
ARSENIC TRIOXIDE	NM_004327;NM_021574	breakpoint cluster region	BCR	14633726	
ARSENIC TRIOXIDE	NM_003766	beclin 1, autophagy related	BECN1	16882451	
ARSENIC	-	-	BHLHB	15761015	

TRIOXIDE			2		
ARSENIC TRIOXIDE	NM_001196;NM_197966;NM_197967	BH3 interacting domain death agonist	BID	15665116, 16972261	
ARSENIC TRIOXIDE	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	15587394, 16328441	
ARSENIC TRIOXIDE	NM_000713	biliverdin reductase B (flavin reductase (NADPH))	BLVRB	15725085	
ARSENIC TRIOXIDE	NM_003666	basic leucine zipper nuclear factor 1	BLZF1	15761015	
ARSENIC TRIOXIDE	NM_004052	BCL2/adenovirus E1B 19kDa interacting protein 3	BNIP3	15592527	
ARSENIC TRIOXIDE	NM_004331	BCL2/adenovirus E1B 19kDa interacting protein 3-like	BNIP3L	15592527	
ARSENIC TRIOXIDE	NM_001725	bactericidal/permeability-increasing protein	BPI	15761015	
ARSENIC TRIOXIDE	-	-	BRDG1	15761015	
ARSENIC TRIOXIDE	NM_017797	BTB (POZ) domain containing 2	BTBD2	15725085	
ARSENIC TRIOXIDE	NM_014962;NM_181443	BTB (POZ) domain containing 3	BTBD3	15725085	
ARSENIC TRIOXIDE	-	-	C14ORF105	15761015	
ARSENIC TRIOXIDE	-	-	C16ORF58	15761015	
ARSENIC TRIOXIDE	-	-	C5ORF13	15725085	
ARSENIC TRIOXIDE	-	-	C6ORF48	17547211	
ARSENIC TRIOXIDE	-	-	C8ORF4	15761015	
ARSENIC TRIOXIDE	NM_001005505;NM_006030	calcium channel, voltage-dependent, alpha 2/delta subunit 2	CACNA2D2	15761015	
ARSENIC TRIOXIDE	NM_021251;NM_023083;NM_023085;NM_023089	calpain 10	CAPN10	15761015	
ARSENIC TRIOXIDE	NM_004930	capping protein (actin filament) muscle Z-line, beta	CAPZB	12852829	

ARSENIC TRIOXIDE	NM_001014437;NM_001014438;NM_001751;NM_139273	cysteinyl-tRNA synthetase	CARS	12852829	
ARSENIC TRIOXIDE	NM_001230;NM_032974;NM_032977	caspase 10, apoptosis-related cysteine peptidase	CASP10	12388546	
ARSENIC TRIOXIDE	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	14668793, 15979894, 15979894,15665116,16951922, 16867262, 16951922	
ARSENIC TRIOXIDE	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	16010437, 16972261	
ARSENIC TRIOXIDE	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	16010437,17	
ARSENIC TRIOXIDE	NM_001753	caveolin 1, caveolae protein, 22kDa	CAV1	15725085	
ARSENIC TRIOXIDE	NM_001233;NM_198212	caveolin 2	CAV2	15725085, 15761015	
ARSENIC TRIOXIDE	NM_001093729;NM_024781	coiled-coil domain containing 102B	CCDC102B	15761015	
ARSENIC TRIOXIDE	NM_144718	coiled-coil domain containing 52	CCDC52	15761015	
ARSENIC TRIOXIDE	NM_004167;NM_032964;NM_032965	chemokine (C-C motif) ligand 15	CCL15	15761015	
ARSENIC TRIOXIDE	NM_002982	chemokine (C-C motif) ligand 2	CCL2	15761015	
ARSENIC TRIOXIDE	NM_005064;NM_145898	chemokine (C-C motif) ligand 23	CCL23	15761015	
ARSENIC TRIOXIDE	NM_001111045;NM_001111046;NM_001111047;NM_003914	cyclin A1	CCNA1	15761015	
ARSENIC TRIOXIDE	NM_031966	cyclin B1	CCNB1	12783709	
ARSENIC TRIOXIDE	NM_004701	cyclin B2	CCNB2	17547211	
ARSENIC TRIOXIDE	NM_053056	cyclin D1	CCND1	-	
ARSENIC TRIOXIDE	NM_001766	CD1d molecule	CD1D	15761015	
ARSENIC TRIOXIDE	NM_000610;NM_001001389;NM_001001390;NM_001001391;NM_00100	CD44 molecule (Indian blood group)	CD44	15553829	

	1392				
ARSENIC TRIOXIDE	NM_001803	CD52 molecule	CD52	15761015	
ARSENIC TRIOXIDE	NM_001252	CD70 molecule	CD70	15761015	
ARSENIC TRIOXIDE	NM_006889;NM_175862	CD86 molecule	CD86	15761015	
ARSENIC TRIOXIDE	NM_003607;NM_014826	CDC42 binding protein kinase alpha (DMPK-like)	CDC42 BPA	15761015	
ARSENIC TRIOXIDE	NM_024529	cell division cycle 73, Paf1/RNA polymerase II complex component, homolog (S. cerevisiae)	CDC73	15761015	
ARSENIC TRIOXIDE	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	12749819, 15961274	
ARSENIC TRIOXIDE	NM_000077;NM_058195;NM_058197	cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4)	CDKN2A	15191659, 16008847, 16008847,15191659	
ARSENIC TRIOXIDE	NM_004936;NM_078487	cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4)	CDKN2B	11877046,12679007, 12679007	
ARSENIC TRIOXIDE	NM_001130851;NM_005192	cyclin-dependent kinase inhibitor 3	CDKN3	17547211	
ARSENIC TRIOXIDE	NM_001805	CCAAT/enhancer binding protein (C/EBP), epsilon	CEBPE	12130515	
ARSENIC TRIOXIDE	NM_014679	centrosomal protein 57kDa	CEP57	14703492	
ARSENIC TRIOXIDE	NM_001710	complement factor B	CFB	17547211	
ARSENIC TRIOXIDE	NM_001127183;NM_001127184;NM_003879	CASP8 and FADD-like apoptosis regulator	CFLAR	16105982, 16105982,16174796	
ARSENIC TRIOXIDE	NM_001114121;NM_001114122;NM_001274	CHK1 checkpoint homolog (S. pombe)	CHEK1	16891316	
ARSENIC TRIOXIDE	NM_001005735;NM_007194;NM_145862	CHK2 checkpoint homolog (S. pombe)	CHEK2	16891316	
ARSENIC TRIOXIDE	NM_001819	chromogranin B (secretogranin 1)	CHGB	15761015	
ARSENIC TRIOXIDE	NM_001276	chitinase 3-like 1 (cartilage glycoprotein-39)	CHI3L1	15761015	
ARSENIC TRIOXIDE	NM_021615	carbohydrate (N-acetylglucosamine 6-O) sulfotransferase 6	CHST6	15761015,15	

ARSENIC TRIOXIDE	NM_014430	cell death-inducing DFFA-like effector b	CIDEB	17547211	
ARSENIC TRIOXIDE	NM_006079	Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 2	CITED2	15725085	
ARSENIC TRIOXIDE	NM_006825	cytoskeleton-associated protein 4	CKAP4	12852829	
ARSENIC TRIOXIDE	NM_001828	Charcot-Leyden crystal protein	CLC	15761015,15	
ARSENIC TRIOXIDE	NM_022570;NM_197947;NM_197948;NM_197949;NM_197950;NM_197954	C-type lectin domain family 7, member A	CLEC7A	15725085	
ARSENIC TRIOXIDE	NM_001130675;NM_004362	calmegin	CLGN	17547211	
ARSENIC TRIOXIDE	NM_178868	CKLF-like MARVEL transmembrane domain containing 8	CMTM8	15761015	
ARSENIC TRIOXIDE	NM_014515	CCR4-NOT transcription complex, subunit 2	CNOT2	15761015	
ARSENIC TRIOXIDE	NM_014900	COBL-like 1	COBLL1	15761015	
ARSENIC TRIOXIDE	NM_006438	collectin sub-family member 10 (C-type lectin)	COLEC10	15761015	
ARSENIC TRIOXIDE	NM_006837	COP9 constitutive photomorphogenic homolog subunit 5 (Arabidopsis)	COPS5	17077332	
ARSENIC TRIOXIDE	NM_001011666;NM_004904;NM_182898;NM_182899	cAMP responsive element binding protein 5	CREB5	15761015	
ARSENIC TRIOXIDE	NM_000756	corticotropin releasing hormone	CRH	15761015	
ARSENIC TRIOXIDE	NM_016441	cysteine rich transmembrane BMP regulator 1 (chordin-like)	CRIM1	15761015,16	
ARSENIC TRIOXIDE	NM_000395	colony stimulating factor 2 receptor, beta, low-affinity (granulocyte-macrophage)	CSF2RB	15070760	
ARSENIC TRIOXIDE	NM_001317;NM_022640;NM_022641	chorionic somatomammotropin hormone 1 (placental lactogen)	CSH1	15761015	
ARSENIC TRIOXIDE	NM_001077204;NM_024790	centrosome and spindle pole associated protein 1	CSPP1	15761015	
ARSENIC TRIOXIDE	NM_001127656;NM_003476	cysteine and glycine-rich protein 3 (cardiac LIM protein)	CSRP3	15725085	
ARSENIC	NM_000099	cystatin C	CST3	15725085	

TRIOXIDE					
ARSENIC TRIOXIDE	NM_001903	catenin (cadherin-associated protein), alpha 1, 102kDa	CTNNA1	15761015	
ARSENIC TRIOXIDE	NM_004390;NM_148979	cathepsin H	CTSH	15761015	
ARSENIC TRIOXIDE	NM_002996	chemokine (C-X3-C motif) ligand 1	CX3CL1	17547211	
ARSENIC TRIOXIDE	NM_000398;NM_001129819;NM_007326	cytochrome b5 reductase 3	CYB5R3	15725085	
ARSENIC TRIOXIDE	NM_000101	cytochrome b-245, alpha polypeptide	CYBA	15070760	
ARSENIC TRIOXIDE	NM_001127383;NM_024843	cytochrome b reductase 1	CYBRD1	15761015	
ARSENIC TRIOXIDE	NM_018947	cytochrome c, somatic	CYCS	16972261	
ARSENIC TRIOXIDE	NM_001042355;NM_001042412;NM_015247	cylindromatosis (turban tumor syndrome)	CYLD	15761015	
ARSENIC TRIOXIDE	NM_000499	cytochrome P450, family 1, subfamily A, polypeptide 1	CYP1A1	11678611, 12490585	
ARSENIC TRIOXIDE	NM_016593	cytochrome P450, family 39, subfamily A, polypeptide 1	CYP39A1	15761015	
ARSENIC TRIOXIDE	NM_022820;NM_057095;NM_057096	cytochrome P450, family 3, subfamily A, polypeptide 43	CYP3A43	15761015	
ARSENIC TRIOXIDE	NM_018659	cytokine-like 1	CYTL1	15761015, 15761015,15070760	
ARSENIC TRIOXIDE	NM_001141969;NM_001141970;NM_001350	death-domain associated protein	DAXX	17081986	
ARSENIC TRIOXIDE	NM_001005375;NM_020420	deleted in azoospermia 4	DAZ4	15761015	
ARSENIC TRIOXIDE	NM_014618	deleted in bladder cancer 1	DBC1	15761015	
ARSENIC TRIOXIDE	NM_004083	DNA-damage-inducible transcript 3	DDIT3	11678611, 12749819	
ARSENIC TRIOXIDE	NM_004084	defensin, alpha 1	DEFA1	15761015,15	
ARSENIC TRIOXIDE	NM_001925	defensin, alpha 4, corticostatin	DEFA4	15761015,15	
ARSENIC	NM_012242	dickkopf homolog 1 (Xenopus laevis)	DKK1	17547211	

TRIOXIDE					
ARSENIC TRIOXIDE	NM_007034	DnaJ (Hsp40) homolog, subfamily B, member 4	DNAJB4	15761015	
ARSENIC TRIOXIDE	NM_015190	DnaJ (Hsp40) homolog, subfamily C, member 9	DNAJC9	15761015	
ARSENIC TRIOXIDE	NM_001130823;NM_001379	DNA (cytosine-5-)-methyltransferase 1	DNMT1	12679007	
ARSENIC TRIOXIDE	NM_022552;NM_153759;NM_175629;NM_175630	DNA (cytosine-5-)-methyltransferase 3 alpha	DNMT3A	12679007	
ARSENIC TRIOXIDE	NM_006892;NM_175848;NM_175849;NM_175850	DNA (cytosine-5-)-methyltransferase 3 beta	DNMT3B	12679007	
ARSENIC TRIOXIDE	NM_001394;NM_057158	dual specificity phosphatase 4	DUSP4	15725085	
ARSENIC TRIOXIDE	NM_001376	dynein, cytoplasmic 1, heavy chain 1	DYNC1H1	15725085	
ARSENIC TRIOXIDE	NM_004714;NM_006483;NM_006484	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 1B	DYRK1B	15070760	
ARSENIC TRIOXIDE	-	-	EBI2	15761015	
ARSENIC TRIOXIDE	NM_005228;NM_201282;NM_201283;NM_201284	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)	EGFR	15961274	
ARSENIC TRIOXIDE	NM_001964	early growth response 1	EGR1	12749819	
ARSENIC TRIOXIDE	-	-	ELA2A	15761015	
ARSENIC TRIOXIDE	-	-	ENDOGL1	15761015	
ARSENIC TRIOXIDE	NM_001429	E1A binding protein p300	EP300	15031205	
ARSENIC TRIOXIDE	NM_001135554;NM_001135555;NM_001431	erythrocyte membrane protein band 4.1-like 2	EPB41L2	15761015	
ARSENIC TRIOXIDE	NM_000120;NM_001136018	epoxide hydrolase 1, microsomal (xenobiotic)	EPHX1	17547211	
ARSENIC TRIOXIDE	NM_000502	eosinophil peroxidase	EPX	15761015,15	
ARSENIC TRIOXIDE	NM_015576	ELKS/RAB6-interacting/CAST family member 2	ERC2	15761015	
ARSENIC	NM_016570	ERGIC and golgi 2	ERGIC	-	

TRIOXIDE			2		
ARSENIC TRIOXIDE	NM_000125;NM_001122740;NM_001122741;NM_001122742	estrogen receptor 1	ESR1	12014631	
ARSENIC TRIOXIDE	NM_001040275;NM_001040276;NM_001437	estrogen receptor 2 (ER beta)	ESR2	12014631	
ARSENIC TRIOXIDE	NM_016337	Enah/Vasp-like	EVL	15725085	
ARSENIC TRIOXIDE	NM_001993	coagulation factor III (thromboplastin, tissue factor)	F3	15761015, 16206674	
ARSENIC TRIOXIDE	NM_147189	family with sequence similarity 110, member B	FAM110B	15761015	
ARSENIC TRIOXIDE	NM_017709	family with sequence similarity 46, member C	FAM46C	15725085	
ARSENIC TRIOXIDE	NM_000136	Fanconi anemia, complementation group C	FANCC	15070760	
ARSENIC TRIOXIDE	NM_000043;NM_152871;NM_152872;NM_152873;NM_152874;NM_152875;NM_152876;NM_152877	Fas (TNF receptor superfamily, member 6)	FAS	15979894,12478894, 15979894,15382040,11135700,12452020,16029599,12126518	
ARSENIC TRIOXIDE	NM_000639	Fas ligand (TNF superfamily, member 6)	FASLG	12452020,12	
ARSENIC TRIOXIDE	NM_006329	fibulin 5	FBLN5	15761015	
ARSENIC TRIOXIDE	NM_012304	F-box and leucine-rich repeat protein 7	FBXL7	15725085	
ARSENIC TRIOXIDE	NM_015850;NM_023105;NM_023106;NM_023107;NM_023108;NM_023110;NM_023111	fibroblast growth factor receptor 1	FGFR1	15761015, 17027752	
ARSENIC TRIOXIDE	NM_000141;NM_001144913;NM_001144914;NM_001144915;NM_001144916;NM_001144917;NM_001144918;NM_001144919;NM_022970	fibroblast growth factor receptor 2	FGFR2	15761015	
ARSENIC TRIOXIDE	NM_001042729;NM_001042747;NM_005248	Gardner-Rasheed feline sarcoma viral (v-fgr) oncogene homolog	FGR	15761015	
ARSENIC TRIOXIDE	NM_001024948;NM_017737	formin binding protein 1-like	FNBP1L	15761015	
ARSENIC TRIOXIDE	NM_005252	v-fos FBJ murine osteosarcoma viral oncogene homolog	FOS	11678611, 11678611,14682389, 12749819, 14682389	
ARSENIC	NM_001102371;NM_024955	FAD-dependent oxidoreductase domain containing 2	FOXRE	15761015	

TRIOXIDE			D2		
ARSENIC TRIOXIDE	NM_002031	fyn-related kinase	FRK	15761015	
ARSENIC TRIOXIDE	NM_003088	fascin homolog 1, actin-bundling protein (Strongylocentrotus purpuratus)	FSCN1	15761015,15	
ARSENIC TRIOXIDE	NM_002032	ferritin, heavy polypeptide 1	FTH1	15725085,15	
ARSENIC TRIOXIDE	NM_001465;NM_199335	FYN binding protein (FYB-120/130)	FYB	15761015	
ARSENIC TRIOXIDE	NM_005458	gamma-aminobutyric acid (GABA) B receptor, 2	GABBR 2	15761015	
ARSENIC TRIOXIDE	NM_144618	GA binding protein transcription factor, beta subunit 2	GABPB 2	12852829	
ARSENIC TRIOXIDE	NM_001924	growth arrest and DNA-damage-inducible, alpha	GADD4 5A	11678611, 15761015,11678611	
ARSENIC TRIOXIDE	NM_000157;NM_001005741;NM_00 1005742;NM_001005749;NM_00100 5750	glucosidase, beta; acid (includes glucosylceramidase)	GBA	15761015	
ARSENIC TRIOXIDE	NM_002061	glutamate-cysteine ligase, modifier subunit	GCLM	15725085	
ARSENIC TRIOXIDE	NM_024711	GTPase, IMAP family member 6	GIMAP 6	15761015	
ARSENIC TRIOXIDE	NM_001135213;NM_001135214;NM _014776;NM_057169;NM_057170;N M_139201	G protein-coupled receptor kinase interacting ArfGAP 2	GIT2	15761015	
ARSENIC TRIOXIDE	NM_000165	gap junction protein, alpha 1, 43kDa	GJA1	15761015,15	
ARSENIC TRIOXIDE	NM_000169	galactosidase, alpha	GLA	17547211	
ARSENIC TRIOXIDE	NM_001142339;NM_002071;NM_18 2978	guanine nucleotide binding protein (G protein), alpha activating activity polypeptide, olfactory type	GNAL	15761015	
ARSENIC TRIOXIDE	NM_001039966;NM_001098201;NM _001505	G protein-coupled estrogen receptor 1	GPER	17547211	
ARSENIC TRIOXIDE	NM_005277;NM_201591;NM_20159 2	glycoprotein M6A	GPM6A	15761015	
ARSENIC TRIOXIDE	NM_004778	G protein-coupled receptor 44	GPR44	15761015	
ARSENIC	NM_018654	G protein-coupled receptor, family C, group 5, member	GPRC5	15725085	

TRIOXIDE		D	D		
ARSENIC TRIOXIDE	NM_000581;NM_201397	glutathione peroxidase 1	GPX1	16887262	
ARSENIC TRIOXIDE	NM_001146320;NM_023927	GRAM domain containing 3	GRAMD3	15070760	
ARSENIC TRIOXIDE	NM_001004056;NM_001004057;NM_182982	G protein-coupled receptor kinase 4	GRK4	15761015	
ARSENIC TRIOXIDE	NM_145740	glutathione S-transferase alpha 1	GSTA1	11678611	
ARSENIC TRIOXIDE	NM_000852	glutathione S-transferase pi 1	GSTP1	15231573, 15665116	
ARSENIC TRIOXIDE	NM_001513;NM_145870;NM_145871	glutathione transferase zeta 1	GSTZ1	15761015	
ARSENIC TRIOXIDE	NM_002105	H2A histone family, member X	H2AFX	16891316	
ARSENIC TRIOXIDE	NR_024052;NR_024052;NR_024052;NR_024052;NR_024052;NR_024052;NR_024052;NR_024052;NR_024052;NR_024052;NR_024053;NR_024053;NR_024053;NR_024053;NR_024053;NR_024053;NR_024053;NR_024053;NR_024053;NR_024053;NR_024053;NR_024053	HLA complex group 18	HCG18	15761015	
ARSENIC TRIOXIDE	NM_001525	hypocretin (orexin) receptor 1	HCRTR1	15761015	
ARSENIC TRIOXIDE	NM_000601;NM_001010931;NM_001010932;NM_001010933;NM_001010934	hepatocyte growth factor (hepapoietin A; scatter factor)	HGF	15761015	
ARSENIC TRIOXIDE	NM_001530;NM_181054	hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	HIF1A	12482858, 16330433	
ARSENIC TRIOXIDE	-	-	HIG2	15725085	
ARSENIC TRIOXIDE	NM_003521	histone cluster 1, H2bm	HIST1H2BM	15761015	
ARSENIC TRIOXIDE	NM_003542	histone cluster 1, H4c	HIST1H4C	17547211	
ARSENIC	NM_003493	histone cluster 3, H3	HIST3H	12388546	

TRIOXIDE			3		
ARSENIC TRIOXIDE	NM_000188;NM_033496;NM_033497;NM_033498;NM_033500	hexokinase 1	HK1	15761015	
ARSENIC TRIOXIDE	NM_005514	major histocompatibility complex, class I, B	HLA-B	15761015,16	
ARSENIC TRIOXIDE	NM_002117	major histocompatibility complex, class I, C	HLA-C	15761015,16	
ARSENIC TRIOXIDE	NM_019111	major histocompatibility complex, class II, DR alpha	HLA-DRA	15725085	
ARSENIC TRIOXIDE	NM_001098478;NM_001098479;NM_018950	major histocompatibility complex, class I, F	HLA-F	15725085	
ARSENIC TRIOXIDE	NM_002127	major histocompatibility complex, class I, G	HLA-G	15761015,16	
ARSENIC TRIOXIDE	NM_002131;NM_145899;NM_145901;NM_145902;NM_145903;NM_145905	high mobility group AT-hook 1	HMGA1	17547211	
ARSENIC TRIOXIDE	NM_001130688;NM_001130689;NM_002129	high-mobility group box 2	HMGB2	14703492	
ARSENIC TRIOXIDE	NM_005517	high-mobility group nucleosomal binding domain 2	HMGN2	17547211	
ARSENIC TRIOXIDE	NM_002133	heme oxygenase (decycling) 1	HMOX1	16487037, 17547211,15725085	
ARSENIC TRIOXIDE	NM_002153	hydroxysteroid (17-beta) dehydrogenase 2	HSD17B2	17547211	
ARSENIC TRIOXIDE	NM_005526	heat shock transcription factor 1	HSF1	15978632	
ARSENIC TRIOXIDE	-	-	HSP27	15665116	
ARSENIC TRIOXIDE	NM_005345	heat shock 70kDa protein 1A	HSPA1A	12749819	
ARSENIC TRIOXIDE	NM_002154	heat shock 70kDa protein 4	HSPA4	11678611, 11678611,14682389, 15665116,14682389	
ARSENIC TRIOXIDE	NM_005347	heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)	HSPA5	11678611	
ARSENIC TRIOXIDE	NM_002155	heat shock 70kDa protein 6 (HSP70B')	HSPA6	15978632	
ARSENIC TRIOXIDE	NM_001540	heat shock 27kDa protein 1	HSPB1	15761015,15	

ARSENIC TRIOXIDE	NM_001098520;NM_001098521;NM_001098522;NM_001098523;NM_006410	HIV-1 Tat interactive protein 2, 30kDa	HTATIP2	15761015	
ARSENIC TRIOXIDE	NM_002162	intercellular adhesion molecule 3	ICAM3	15761015	
ARSENIC TRIOXIDE	NM_002165;NM_181353	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein	ID1	15761015	
ARSENIC TRIOXIDE	NM_002166	inhibitor of DNA binding 2, dominant negative helix-loop-helix protein	ID2	15761015	
ARSENIC TRIOXIDE	NM_000202;NM_006123	iduronate 2-sulfatase	IDS	15761015	
ARSENIC TRIOXIDE	NM_004907	immediate early response 2	IER2	12749819	
ARSENIC TRIOXIDE	NM_005531	interferon, gamma-inducible protein 16	IFI16	15761015	
ARSENIC TRIOXIDE	NM_022168	interferon induced with helicase C domain 1	IFIH1	15761015	
ARSENIC TRIOXIDE	NM_000605	interferon, alpha 2	IFNA2	12560223, 17077332	
ARSENIC TRIOXIDE	NM_000619	interferon, gamma	IFNG	14668793, 16914093	
ARSENIC TRIOXIDE	NM_001007245;NM_001550	interferon-related developmental regulator 1	IFRD1	17547211	
ARSENIC TRIOXIDE	NM_000597	insulin-like growth factor binding protein 2, 36kDa	IGFBP2	15761015,15	
ARSENIC TRIOXIDE	NM_001553	insulin-like growth factor binding protein 7	IGFBP7	15725085	
ARSENIC TRIOXIDE	NM_001556	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta	IKBKB	-	
ARSENIC TRIOXIDE	NM_001559	interleukin 12 receptor, beta 2	IL12RB2	15761015	
ARSENIC TRIOXIDE	NM_006850;NM_181339	interleukin 24	IL24	15580305	
ARSENIC TRIOXIDE	NM_000600	interleukin 6 (interferon, beta 2)	IL6	12560223	
ARSENIC TRIOXIDE	NM_001557	interleukin 8 receptor, beta	IL8RB	15761015	
ARSENIC	NM_005540	inositol polyphosphate-5-phosphatase, 75kDa	INPP5B	15761015	

TRIOXIDE					
ARSENIC TRIOXIDE	NM_002196	insulinoma-associated 1	INSM1	15761015	
ARSENIC TRIOXIDE	NM_001031715;NM_022784	IQ motif containing H	IQCH	15761015	
ARSENIC TRIOXIDE	NM_002198	interferon regulatory factor 1	IRF1	14668793, 16914093	
ARSENIC TRIOXIDE	NM_000419	integrin, alpha 2b (platelet glycoprotein IIb of IIb/IIIa complex, antigen CD41)	ITGA2B	15761015	
ARSENIC TRIOXIDE	NM_000632;NM_001145808	integrin, alpha M (complement component 3 receptor 3 subunit)	ITGAM	16430862, 16468075	
ARSENIC TRIOXIDE	NM_002211;NM_033666;NM_033667;NM_033668;NM_033669;NM_133376	integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)	ITGB1	12852829	
ARSENIC TRIOXIDE	NM_014288	integrin beta 3 binding protein (beta3-endonexin)	ITGB3BP	17547211	
ARSENIC TRIOXIDE	NM_000889	integrin, beta 7	ITGB7	15761015	
ARSENIC TRIOXIDE	NM_004867	integral membrane protein 2A	ITM2A	15725085	
ARSENIC TRIOXIDE	NM_002228	jun oncogene	JUN	12749819	
ARSENIC TRIOXIDE	NM_005354	jun D proto-oncogene	JUND	15761015, 17077332	
ARSENIC TRIOXIDE	NM_000238;NM_172056;NM_172057	potassium voltage-gated channel, subfamily H (eag-related), member 2	KCNH2	15070760, 15213294	
ARSENIC TRIOXIDE	NM_138444	potassium channel tetramerisation domain containing 12	KCTD12	15761015	
ARSENIC TRIOXIDE	NR_022006;NR_022006;NR_022006;NR_022006;NR_022006;NR_022006;NR_022006	KIAA0087	KIAA0087	15761015	
ARSENIC TRIOXIDE	NM_020947	KIAA1609	KIAA1609	15761015	
ARSENIC TRIOXIDE	NM_017596	kinesin family member 21B	KIF21B	15761015	
ARSENIC TRIOXIDE	NM_000899;NM_003994	KIT ligand	KITLG	15761015	
ARSENIC	NM_003597	Kruppel-like factor 11	KLF11	15761015	

TRIOXIDE					
ARSENIC TRIOXIDE	NM_001730	Kruppel-like factor 5 (intestinal)	KLF5	15761015	
ARSENIC TRIOXIDE	NM_005554	keratin 6A	KRT6A	15949261	
ARSENIC TRIOXIDE	NM_001032998;NM_003937	kynureninase (L-kynurenine hydrolase)	KYNU	15761015	
ARSENIC TRIOXIDE	NM_002293	laminin, gamma 1 (formerly LAMB2)	LAMC1	12852829	
ARSENIC TRIOXIDE	NM_001014987;NM_001014988;NM_001014989;NM_014387	linker for activation of T cells	LAT	15761015	
ARSENIC TRIOXIDE	NM_002308;NM_009587	lectin, galactoside-binding, soluble, 9	LGALS9	15761015	
ARSENIC TRIOXIDE	NM_001008530;NM_005606	legumain	LGMN	15725085	
ARSENIC TRIOXIDE	NM_005780	lipoma HMGIC fusion partner	LHFP	15761015,15	
ARSENIC TRIOXIDE	NM_014368;NM_199160	LIM homeobox 6	LHX6	15761015	
ARSENIC TRIOXIDE	NM_001013253;NM_001013254;NM_001013255;NM_002339	lymphocyte-specific protein 1	LSP1	15761015	
ARSENIC TRIOXIDE	NM_145867	leukotriene C4 synthase	LTC4S	15761015	
ARSENIC TRIOXIDE	NM_001161572;NM_001161573;NM_001161574;NM_012323;NM_152878	v-maf musculoaponeurotic fibrosarcoma oncogene homolog F (avian)	MAFF	16487037	
ARSENIC TRIOXIDE	NM_002359;NM_032711	v-maf musculoaponeurotic fibrosarcoma oncogene homolog G (avian)	MAFG	16487037	
ARSENIC TRIOXIDE	NM_002360	v-maf musculoaponeurotic fibrosarcoma oncogene homolog K (avian)	MAFK	16487037	
ARSENIC TRIOXIDE	NM_005907	mannosidase, alpha, class 1A, member 1	MAN1A1	15761015	
ARSENIC TRIOXIDE	NM_000240	monoamine oxidase A	MAOA	15761015	
ARSENIC TRIOXIDE	NM_002756;NM_145109	mitogen-activated protein kinase kinase 3	MAP2K3	16818652	
ARSENIC TRIOXIDE	NM_003010	mitogen-activated protein kinase kinase 4	MAP2K4	15978632	

ARSENIC TRIOXIDE	NM_002758	mitogen-activated protein kinase kinase 6	MAP2K6	16818652	
ARSENIC TRIOXIDE	NM_003980	microtubule-associated protein 7	MAP7	15761015	
ARSENIC TRIOXIDE	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	15580305, 15961274, 16328441, 16328441,15961274, 17050201	
ARSENIC TRIOXIDE	NM_001315;NM_139012;NM_139013;NM_139014	mitogen-activated protein kinase 14	MAPK14	16818652,17	
ARSENIC TRIOXIDE	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	15580305, 15961274, 16328441, 16328441,15961274, 17050201	
ARSENIC TRIOXIDE	NM_002749;NM_139032;NM_139033;NM_139034	mitogen-activated protein kinase 7	MAPK7	15580305	
ARSENIC TRIOXIDE	NM_002750;NM_139046;NM_139047;NM_139049	mitogen-activated protein kinase 8	MAPK8	15580305, 15961274, 16646077, 16818652	
ARSENIC TRIOXIDE	NM_001135044;NM_002752;NM_139068;NM_139069;NM_139070	mitogen-activated protein kinase 9	MAPK9	15580305, 16818652	
ARSENIC TRIOXIDE	NM_001005415;NM_001005416;NM_016496	membrane-associated ring finger (C3HC4) 2	MARCH2	15761015	
ARSENIC TRIOXIDE	-	-	MASK	17547211	
ARSENIC TRIOXIDE	NM_001112732;NM_024979	MCF.2 cell line derived transforming sequence-like	MCF2L	12852829	
ARSENIC TRIOXIDE	NM_004526	minichromosome maintenance complex component 2	MCM2	17547211	
ARSENIC TRIOXIDE	NM_002395	malic enzyme 1, NADP(+)-dependent, cytosolic	ME1	15725085	
ARSENIC TRIOXIDE	NM_032390	MKI67 (FHA domain) interacting nucleolar phosphoprotein	MKI67IP	14703492	
ARSENIC TRIOXIDE	NM_002421	matrix metallopeptidase 1 (interstitial collagenase)	MMP1	15761015	
ARSENIC TRIOXIDE	NM_001127891;NM_004530	matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)	MMP2	15553829,16624393, 16624393	
ARSENIC TRIOXIDE	NM_001032278;NM_024302	matrix metallopeptidase 28	MMP28	15761015	
ARSENIC TRIOXIDE	NM_004994	matrix metallopeptidase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)	MMP9	15949266, 16624393	
ARSENIC TRIOXIDE	NM_005373	myeloproliferative leukemia virus oncogene	MPL	15761015	

ARSENIC TRIOXIDE	NM_000250	myeloperoxidase	MPO	12130515	
ARSENIC TRIOXIDE	NM_016065	mitochondrial ribosomal protein S16	MRPS16	14703492	
ARSENIC TRIOXIDE	NM_005098	musculin (activated B-cell factor-1)	MSC	15761015	
ARSENIC TRIOXIDE	NM_012228	methionine sulfoxide reductase B2	MSRB2	15725085	
ARSENIC TRIOXIDE	NM_175617	metallothionein 1E	MT1E	15725085	
ARSENIC TRIOXIDE	NM_005950	metallothionein 1G	MT1G	15725085	
ARSENIC TRIOXIDE	NM_005951	metallothionein 1H	MT1H	15725085	
ARSENIC TRIOXIDE	NR_001447;NR_001447;NR_001447;NR_001447;NR_001447;NR_001447	metallothionein 1L (gene/pseudogene)	MT1L	15725085	
ARSENIC TRIOXIDE	-	metallothionein 1 pseudogene 2	MT1P2	15725085	
ARSENIC TRIOXIDE	NM_005952	metallothionein 1X	MT1X	15725085	
ARSENIC TRIOXIDE	NM_005953	metallothionein 2A	MT2A	11678611, 11678611,15725085,14682389, 14682389	
ARSENIC TRIOXIDE	NM_004689	metastasis associated 1	MTA1	12478894	
ARSENIC TRIOXIDE	NM_001008528;NM_001008529;NM_198530	matrix-remodelling associated 7	MXRA7	17547211	
ARSENIC TRIOXIDE	NM_001080416;NM_001144755	v-myb myeloblastosis viral oncogene homolog (avian)-like 1	MYBL1	15725085	
ARSENIC TRIOXIDE	NM_002467	v-myc myelocytomatosis viral oncogene homolog (avian)	MYC	11714746,12903512,12903497, 11775218, 11775218,12903512,11714746, 15622746, 15761015	
ARSENIC TRIOXIDE	NM_005378	v-myc myelocytomatosis viral related oncogene, neuroblastoma derived (avian)	MYCN	12478894	
ARSENIC TRIOXIDE	NM_001130158;NM_001161819;NM_012223	myosin IB	MYO1B	15761015,15	
ARSENIC TRIOXIDE	NM_012330	MYST histone acetyltransferase (monocytic leukemia) 4	MYST4	15761015	

ARSENIC TRIOXIDE	NM_153029	NEDD4 binding protein 1	N4BP1	15761015	
ARSENIC TRIOXIDE	NM_001079691;NM_052818	NEDD4 binding protein 2-like 1	N4BP2L1	15761015	
ARSENIC TRIOXIDE	NM_005967	NGFI-A binding protein 2 (EGR1 binding protein 2)	NAB2	15761015	
ARSENIC TRIOXIDE	NM_014903	neuron navigator 3	NAV3	15761015	
ARSENIC TRIOXIDE	NM_000265	neutrophil cytosolic factor 1	NCF1	15070760, 15761015,15070760	
ARSENIC TRIOXIDE	NM_000433;NM_001127651	neutrophil cytosolic factor 2	NCF2	15070760	
ARSENIC TRIOXIDE	-	NADH dehydrogenase, subunit 4 (complex I)	ND4	14703492	
ARSENIC TRIOXIDE	NM_006656	sialidase 3 (membrane sialidase)	NEU3	15070760	
ARSENIC TRIOXIDE	NM_003204	nuclear factor (erythroid-derived 2)-like 1	NFE2L1	16487037	
ARSENIC TRIOXIDE	NM_020529	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	NFKBIA	12560223	
ARSENIC TRIOXIDE	NM_004556	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, epsilon	NFKBIE	12560223	
ARSENIC TRIOXIDE	NM_000269;NM_198175	non-metastatic cells 1, protein (NM23A) expressed in	NME1	12452020, 12478894	
ARSENIC TRIOXIDE	NM_002517	neuronal PAS domain protein 1	NPAS1	15761015	
ARSENIC TRIOXIDE	NM_002523	neuronal pentraxin II	NPTX2	15761015	
ARSENIC TRIOXIDE	NM_000176;NM_001018074;NM_001018075;NM_001018076;NM_001018077;NM_001020825;NM_001024094	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)	NR3C1	17081986	
ARSENIC TRIOXIDE	NM_005013	nucleobindin 2	NUCB2	17547211	
ARSENIC TRIOXIDE	NM_024815	nudix (nucleoside diphosphate linked moiety X)-type motif 18	NUDT18	15761015	
ARSENIC TRIOXIDE	NM_020401	nucleoporin 107kDa	NUP107	17547211	

ARSENIC TRIOXIDE	NM_015311	obscurin-like 1	OBSL1	15761015	
ARSENIC TRIOXIDE	NM_002552;NM_181741;NM_181742	origin recognition complex, subunit 4-like (yeast)	ORC4L	15761015	
ARSENIC TRIOXIDE	NM_001017956;NM_001017957;NM_001017958;NM_006812	osteosarcoma amplified 9, endoplasmic reticulum associated protein	OS9	17547211	
ARSENIC TRIOXIDE	NM_000917;NM_001017962;NM_001142595;NM_001142596	prolyl 4-hydroxylase, alpha polypeptide I	P4HA1	15725085	
ARSENIC TRIOXIDE	NM_000437	platelet-activating factor acetylhydrolase 2, 40kDa	PAFAH2	15761015	
ARSENIC TRIOXIDE	NM_152911;NM_207127;NM_207128	polyamine oxidase (exo-N4-amino)	PAOX	15761015	
ARSENIC TRIOXIDE	NM_024897;NM_198406	progestin and adipoQ receptor family member VI	PAQR6	15725085	
ARSENIC TRIOXIDE	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	16328441, 16328441,16646077	
ARSENIC TRIOXIDE	NM_002583	PRKC, apoptosis, WT1, regulator	PAWR	16966277	
ARSENIC TRIOXIDE	NM_002592;NM_182649	proliferating cell nuclear antigen	PCNA	12783709, 16029599	
ARSENIC TRIOXIDE	NM_006200	proprotein convertase subtilisin/kexin type 5	PCSK5	15761015	
ARSENIC TRIOXIDE	NM_014456;NM_145341	programmed cell death 4 (neoplastic transformation inhibitor)	PDCD4	17259349	
ARSENIC TRIOXIDE	NM_001111307;NM_001111308;NM_001111309;NM_006202	phosphodiesterase 4A, cAMP-specific (phosphodiesterase E2 dunce homolog, Drosophila)	PDE4A	15070760	
ARSENIC TRIOXIDE	NM_001037339;NM_001037340;NM_001037341;NM_002600	phosphodiesterase 4B, cAMP-specific (phosphodiesterase E4 dunce homolog, Drosophila)	PDE4B	15761015	
ARSENIC TRIOXIDE	NM_001002810;NM_001002811;NM_001002812;NM_014644;NM_022359	phosphodiesterase 4D interacting protein	PDE4DIP	15761015	
ARSENIC TRIOXIDE	NM_005451;NM_203352;NM_213636	PDZ and LIM domain 7 (enigma)	PDLIM7	15761015	
ARSENIC TRIOXIDE	NM_002613;NM_031268	3-phosphoinositide dependent protein kinase-1	PDPK1	14633726	
ARSENIC TRIOXIDE	NM_178140	PDZ domain containing 2	PDZD2	15761015	
ARSENIC	NM_000442	platelet/endothelial cell adhesion molecule	PECAM	15761015	

TRIOXIDE			1		
ARSENIC TRIOXIDE	NM_003630	peroxisomal biogenesis factor 3	PEX3	15761015	
ARSENIC TRIOXIDE	NM_002630	progastricsin (pepsinogen C)	PGC	17547211	
ARSENIC TRIOXIDE	NM_002632	placental growth factor	PGF	17547211	
ARSENIC TRIOXIDE	NM_003311	pleckstrin homology-like domain, family A, member 2	PHLDA 2	15761015	
ARSENIC TRIOXIDE	NM_032634;NM_152850	phosphatidylinositol glycan anchor biosynthesis, class O	PIGO	15761015	
ARSENIC TRIOXIDE	-	-	PIK4CA	12852829	
ARSENIC TRIOXIDE	NM_001018109;NM_003662	pirin (iron-binding nuclear protein)	PIR	15761015	
ARSENIC TRIOXIDE	NM_004571	PBX/knotted 1 homeobox 1	PKNOX 1	15761015	
ARSENIC TRIOXIDE	NM_001005376;NM_001005377;NM_002659	plasminogen activator, urokinase receptor	PLAUR	15761015	
ARSENIC TRIOXIDE	NM_016274	pleckstrin homology domain containing, family O member 1	PLEKH O1	15761015	
ARSENIC TRIOXIDE	NM_005761	plexin C1	PLXNC 1	15761015	
ARSENIC TRIOXIDE	NM_002675;NM_033238;NM_033239;NM_033240;NM_033244;NM_033246;NM_033247;NM_033249;NM_033250	promyelocytic leukemia	PML	15748426, 15748426,16891316, 16330433, 17081986	
ARSENIC TRIOXIDE	-	-	PPGB	15725085	
ARSENIC TRIOXIDE	NM_006347	peptidylprolyl isomerase H (cyclophilin H)	PPIH	17547211	
ARSENIC TRIOXIDE	NM_002709;NM_206876	protein phosphatase 1, catalytic subunit, beta isoform	PPP1C B	12852829	
ARSENIC TRIOXIDE	NM_006093	proteoglycan 3	PRG3	15761015	
ARSENIC TRIOXIDE	NM_002738;NM_212535	protein kinase C, beta	PRKCB	15725085	
ARSENIC	NM_016644	proline rich 16	PRR16	15761015	

TRIOXIDE					
ARSENIC TRIOXIDE	NM_002769	protease, serine, 1 (trypsin 1)	PRSS1	15761015	
ARSENIC TRIOXIDE	NM_002798	proteasome (prosome, macropain) subunit, beta type, 6	PSMB6	12852829	
ARSENIC TRIOXIDE	NM_004159;NM_148919	proteasome (prosome, macropain) subunit, beta type, 8 (large multifunctional peptidase 7)	PSMB8	15725085	
ARSENIC TRIOXIDE	NM_000959;NM_001039585	prostaglandin F receptor (FP)	PTGFR	15761015	
ARSENIC TRIOXIDE	NM_016077	peptidyl-tRNA hydrolase 2	PTRH2	14703492	
ARSENIC TRIOXIDE	NM_004219	pituitary tumor-transforming 1	PTTG1	17547211	
ARSENIC TRIOXIDE	NM_001015508;NM_013357	purine-rich element binding protein G	PURG	15761015	
ARSENIC TRIOXIDE	NM_012293	peroxidasin homolog (Drosophila)	PXDN	15761015	
ARSENIC TRIOXIDE	NM_004163	RAB27B, member RAS oncogene family	RAB27B	15761015	
ARSENIC TRIOXIDE	NM_001126103;NM_001126104;NM_013277	Rac GTPase activating protein 1	RACGAP1	17547211	
ARSENIC TRIOXIDE	NM_001100397;NM_007023	Rap guanine nucleotide exchange factor (GEF) 4	RAPGEF4	15761015	
ARSENIC TRIOXIDE	NM_000964;NM_001024809;NM_001145301;NM_001145302	retinoic acid receptor, alpha	RARA	15748426,16891316, 16330433	
ARSENIC TRIOXIDE	NM_007211	Ras association (RalGDS/AF-6) domain family (N-terminal) member 8	RASSF8	15761015	
ARSENIC TRIOXIDE	NM_002139	RNA binding motif protein, X-linked	RBMX	12852829	
ARSENIC TRIOXIDE	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	16105982,16174796, 16174796	
ARSENIC TRIOXIDE	NM_001042681;NM_001042682;NM_012102	arginine-glutamic acid dipeptide (RE) repeats	RERE	15761015	
ARSENIC TRIOXIDE	NM_002914;NM_181471	replication factor C (activator 1) 2, 40kDa	RFC2	17547211	
ARSENIC TRIOXIDE	NM_002923	regulator of G-protein signaling 2, 24kDa	RGS2	12852829	

ARSENIC TRIOXIDE	NM_006397	ribonuclease H2, subunit A	RNASEH2A	17547211	
ARSENIC TRIOXIDE	NM_014746	ring finger protein 144A	RNF144A	15761015	
ARSENIC TRIOXIDE	NM_001134337;NM_001134338;NM_007219	ring finger protein 24	RNF24	15761015	
ARSENIC TRIOXIDE	NM_005977;NM_183043;NM_183044	ring finger protein (C3H2C3 type) 6	RNF6	15761015	
ARSENIC TRIOXIDE	NM_002941;NM_133631	roundabout, axon guidance receptor, homolog 1 (Drosophila)	ROBO1	15725085	
ARSENIC TRIOXIDE	NM_000985;NM_001035006	ribosomal protein L17	RPL17	12852829	
ARSENIC TRIOXIDE	NM_000980	ribosomal protein L18a	RPL18A	15725085	
ARSENIC TRIOXIDE	NM_000978	ribosomal protein L23	RPL23	14703492	
ARSENIC TRIOXIDE	NM_000971	ribosomal protein L7	RPL7	12852829	
ARSENIC TRIOXIDE	NM_001019;NM_001030009	ribosomal protein S15a	RPS15A	14703492	
ARSENIC TRIOXIDE	NM_003161	ribosomal protein S6 kinase, 70kDa, polypeptide 1	RPS6KB1	14633726	
ARSENIC TRIOXIDE	NM_001042576;NM_004587	ribosome binding protein 1 homolog 180kDa (dog)	RRBP1	15761015	
ARSENIC TRIOXIDE	NM_015659	ribosomal L1 domain containing 1	RSL1D1	15761015	
ARSENIC TRIOXIDE	NM_001005861;NM_002958	RYK receptor-like tyrosine kinase	RYK	15761015	
ARSENIC TRIOXIDE	NM_002966	S100 calcium binding protein A10	S100A10	15949261	
ARSENIC TRIOXIDE	NM_002964	S100 calcium binding protein A8	S100A8	15761015,15	
ARSENIC TRIOXIDE	NM_002965	S100 calcium binding protein A9	S100A9	15761015	
ARSENIC TRIOXIDE	NM_015265	SATB homeobox 2	SATB2	15761015	
ARSENIC TRIOXIDE	NM_138967	secretory carrier membrane protein 5	SCAMP5	15761015	

ARSENIC TRIOXIDE	NM_002411	secretoglobin, family 2A, member 2	SCGB2A2	15761015	
ARSENIC TRIOXIDE	NM_021626	serine carboxypeptidase 1	SCPEP1	15725085	
ARSENIC TRIOXIDE	NM_021920	secretin	SCT	15761015	
ARSENIC TRIOXIDE	NM_002998	syndecan 2	SDC2	15761015,12852829,15725085	
ARSENIC TRIOXIDE	NM_002999	syndecan 4	SDC4	15761015	
ARSENIC TRIOXIDE	NM_003005	selectin P (granule membrane protein 140kDa, antigen CD62)	SELP	16206674	
ARSENIC TRIOXIDE	NM_030666	serpin peptidase inhibitor, clade B (ovalbumin), member 1	SERPINB1	15761015	
ARSENIC TRIOXIDE	NM_014755	SERTA domain containing 2	SERTAD2	15725085	
ARSENIC TRIOXIDE	NM_001039465;NM_006925	splicing factor, arginine/serine-rich 5	SFRS5	14703492	
ARSENIC TRIOXIDE	NM_003026	SH3-domain GRB2-like 2	SH3GL2	15761015	
ARSENIC TRIOXIDE	NM_001245;NM_198845;NM_198846	sialic acid binding Ig-like lectin 6	SIGLEC6	15761015	
ARSENIC TRIOXIDE	NM_007163	solute carrier family 14 (urea transporter), member 2	SLC14A2	15761015	
ARSENIC TRIOXIDE	NM_005073	solute carrier family 15 (oligopeptide transporter), member 1	SLC15A1	15761015	
ARSENIC TRIOXIDE	NM_004171	solute carrier family 1 (glial high affinity glutamate transporter), member 2	SLC1A2	17547211	
ARSENIC TRIOXIDE	NM_002555;NM_183233	solute carrier family 22, member 18	SLC22A18	15725085	
ARSENIC TRIOXIDE	NM_006516	solute carrier family 2 (facilitated glucose transporter), member 1	SLC2A1	17064664	
ARSENIC TRIOXIDE	NM_080546	solute carrier family 44, member 1	SLC44A1	15761015	
ARSENIC TRIOXIDE	NM_017842	solute carrier family 48 (heme transporter), member 1	SLC48A1	15761015,16	
ARSENIC TRIOXIDE	NM_178498	solute carrier family 5 (sodium/glucose cotransporter), member 12	SLC5A12	15761015	

ARSENIC TRIOXIDE	NM_004211	solute carrier family 6 (neurotransmitter transporter, glycine), member 5	SLC6A5	15761015	
ARSENIC TRIOXIDE	NM_001145044;NM_013272	solute carrier organic anion transporter family, member 3A1	SLCO3A1	15761015	
ARSENIC TRIOXIDE	NM_001003688;NM_005900	SMAD family member 1	SMAD1	15761015	
ARSENIC TRIOXIDE	NM_001002800;NM_005496	structural maintenance of chromosomes 4	SMC4	17547211	
ARSENIC TRIOXIDE	NM_000454	superoxide dismutase 1, soluble	SOD1	16867262	
ARSENIC TRIOXIDE	NM_018419	SRY (sex determining region Y)-box 18	SOX18	15761015	
ARSENIC TRIOXIDE	NM_007017;NM_178424	SRY (sex determining region Y)-box 30	SOX30	15761015	
ARSENIC TRIOXIDE	NM_003107	SRY (sex determining region Y)-box 4	SOX4	15725085	
ARSENIC TRIOXIDE	NM_003109;NM_138473	Sp1 transcription factor	SP1	11714746, 15761015	
ARSENIC TRIOXIDE	NM_001130438;NM_003127	spectrin, alpha, non-erythrocytic 1 (alpha-fodrin)	SPTAN1	12852829	
ARSENIC TRIOXIDE	NM_175039;NM_175040	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 4	ST6GALNAC4	17547211	
ARSENIC TRIOXIDE	NM_015136	stabilin 1	STAB1	15761015	
ARSENIC TRIOXIDE	NM_007315;NM_139266	signal transducer and activator of transcription 1, 91kDa	STAT1	14668793, 16914093	
ARSENIC TRIOXIDE	NM_001009181;NM_003154	statherin	STATH	15761015	
ARSENIC TRIOXIDE	NM_001128204;NM_001128205;NM_001128206;NM_015170	sulfatase 1	SULF1	15725085	
ARSENIC TRIOXIDE	NM_015551	sushi domain containing 5	SUSD5	15761015	
ARSENIC TRIOXIDE	NM_001135774;NM_003490;NM_133633	synapsin III	SYN3	15761015	
ARSENIC TRIOXIDE	NM_003698	synaptojanin 2	SYNJ2	12852829	
ARSENIC	NM_001083962;NM_003199	transcription factor 4	TCF4	15761015	

TRIOXIDE					
ARSENIC TRIOXIDE	NR_001566;NR_001566;NR_001566;NR_001566;NR_001566;NR_001566	telomerase RNA component	TERC	11714746	
ARSENIC TRIOXIDE	NM_003218;NM_017489	telomeric repeat binding factor (NIMA-interacting) 1	TERF1	16129045	
ARSENIC TRIOXIDE	NM_005652	telomeric repeat binding factor 2	TERF2	16129045	
ARSENIC TRIOXIDE	NM_198253;NM_198255	telomerase reverse transcriptase	TERT	11714746,16966277, 15761015, 15761015,16129045,11714746,16966277,16285558, 15996315	
ARSENIC TRIOXIDE	NM_003222	transcription factor AP-2 gamma (activating enhancer binding protein 2 gamma)	TFAP2C	15761015	
ARSENIC TRIOXIDE	NM_003225	trefoil factor 1	TFF1	12014631	
ARSENIC TRIOXIDE	NM_001024847;NM_003242	transforming growth factor, beta receptor II (70/80kDa)	TGFBR2	12852829	
ARSENIC TRIOXIDE	NM_003254	TIMP metallopeptidase inhibitor 1	TIMP1	16624393	
ARSENIC TRIOXIDE	NM_003255	TIMP metallopeptidase inhibitor 2	TIMP2	16624393	
ARSENIC TRIOXIDE	NM_015444	transmembrane protein 158	TMEM158	15761015	
ARSENIC TRIOXIDE	NM_000594	tumor necrosis factor (TNF superfamily, member 2)	TNF	12560223	
ARSENIC TRIOXIDE	NM_006290	tumor necrosis factor, alpha-induced protein 3	TNFAIP3	17547211	
ARSENIC TRIOXIDE	NM_001077654;NM_014350	tumor necrosis factor, alpha-induced protein 8	TNFAIP8	17547211	
ARSENIC TRIOXIDE	NM_001066	tumor necrosis factor receptor superfamily, member 1B	TNFRSF1B	15761015	
ARSENIC TRIOXIDE	NM_001039664;NM_003790;NM_148965;NM_148966;NM_148967;NM_148970	tumor necrosis factor receptor superfamily, member 25	TNFRSF25	15761015	
ARSENIC TRIOXIDE	NM_001561	tumor necrosis factor receptor superfamily, member 9	TNFRSF9	16010437	
ARSENIC TRIOXIDE	NM_003808;NM_172087;NM_172088	tumor necrosis factor (ligand) superfamily, member 13	TNFSF13	15761015	

ARSENIC TRIOXIDE	NM_001244	tumor necrosis factor (ligand) superfamily, member 8	TNFSF8	15761015	
ARSENIC TRIOXIDE	NM_001067	topoisomerase (DNA) II alpha 170kDa	TOP2A	16884364	
ARSENIC TRIOXIDE	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	11714746,14682389, 11714746,15622746, 11775218, 15979894,12490120,16467208	
ARSENIC TRIOXIDE	NM_022112	tumor protein p53 regulated apoptosis inducing protein 1	TP53AIP1	15031205, 16467208	
ARSENIC TRIOXIDE	NM_001076787;NM_006034	tumor protein p53 inducible protein 11	TP53I11	12883691, 15225615, 15761015	
ARSENIC TRIOXIDE	NM_001126240;NM_001126241;NM_001126242;NM_005427	tumor protein p73	TP73	15031205, 16467208	
ARSENIC TRIOXIDE	NM_003295	tumor protein, translationally-controlled 1	TPT1	15949261	
ARSENIC TRIOXIDE	NM_013293	transformer 2 alpha homolog (Drosophila)	TRA2A	15761015	
ARSENIC TRIOXIDE	NM_147200;NM_147686	TRAF3 interacting protein 2	TRAF3IP2	15761015	
ARSENIC TRIOXIDE	NM_006470	tripartite motif-containing 16	TRIM16	15725085	
ARSENIC TRIOXIDE	NM_004237	thyroid hormone receptor interactor 13	TRIP13	17547211	
ARSENIC TRIOXIDE	NM_001136035;NM_001142554;NM_017722	TRM1 tRNA methyltransferase 1 homolog (S. cerevisiae)	TRMT1	15725085	
ARSENIC TRIOXIDE	NM_001015881;NM_004089;NM_198057	TSC22 domain family, member 3	TSC22D3	17081986	
ARSENIC TRIOXIDE	NM_017931	tetratricopeptide repeat domain 38	TTC38	15761015	
ARSENIC TRIOXIDE	NM_006472	thioredoxin interacting protein	TXNIP	15725085	
ARSENIC TRIOXIDE	NM_001071	thymidylate synthetase	TYMS	17547211	
ARSENIC TRIOXIDE	NM_007019;NM_181799;NM_181800;NM_181801;NM_181802;NM_181803	ubiquitin-conjugating enzyme E2C	UBE2C	17547211	
ARSENIC	NM_003338	ubiquitin-conjugating enzyme E2D 1 (UBC4/5	UBE2D	15761015	

TRIOXIDE		homolog, yeast)	1		
ARSENIC TRIOXIDE	NM_004181	ubiquitin carboxyl-terminal esterase L1 (ubiquitin thiolesterase)	UCHL1	15725085	
ARSENIC TRIOXIDE	NM_003355	uncoupling protein 2 (mitochondrial, proton carrier)	UCP2	15761015	
ARSENIC TRIOXIDE	NM_001025366;NM_001025367;NM_001025368;NM_001025369;NM_001025370;NM_001033756;NM_003376	vascular endothelial growth factor A	VEGFA	12482858, 15949266, 16928304	
ARSENIC TRIOXIDE	NM_004666	vanin 1	VNN1	15761015	
ARSENIC TRIOXIDE	NM_018256	WD repeat domain 12	WDR12	15725085	
ARSENIC TRIOXIDE	NM_025222	WD repeat domain 82	WDR82	15761015	
ARSENIC TRIOXIDE	NM_018639	WD repeat and SOCS box-containing 2	WSB2	15725085	
ARSENIC TRIOXIDE	NM_000378;NM_024424;NM_024425;NM_024426	Wilms tumor 1	WT1	16966277	
ARSENIC TRIOXIDE	NM_001167	X-linked inhibitor of apoptosis	XIAP	16105982,16	
ARSENIC TRIOXIDE	NM_001469	X-ray repair complementing defective repair in Chinese hamster cells 6	XRCC6	15761015	
ARSENIC TRIOXIDE	NM_003407	zinc finger protein 36, C3H type, homolog (mouse)	ZFP36	12749819	
ARSENIC TRIOXIDE	NM_004926	zinc finger protein 36, C3H type-like 1	ZFP36L1	15725085	
ARSENIC TRIOXIDE	NM_003453;NM_197968	zinc finger, MYM-type 2	ZMYM2	17027752	
ARSENIC TRIOXIDE	NM_018102;NM_199441	zinc finger protein 334	ZNF334	15761015	
ARSENIC TRIOXIDE	NM_001007094;NM_003421	zinc finger protein 37A	ZNF37A	15761015	
ARSENIC TRIOXIDE	NM_001077349;NM_033196	zinc finger protein 682	ZNF682	15761015	
ARSENIC TRIOXIDE	NM_001142305;NM_016643	zinc finger protein 771	ZNF771	15761015	
ARSENIC	NM_001005413;NM_007057;NM_03	ZW10 interactor	ZWINT	17547211	

TRIOXIDE	2997				
BORTEZOMIB	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	15781649	unrelated
BORTEZOMIB	NM_001160;NM_013229;NM_181861;NM_181868;NM_181869	apoptotic peptidase activating factor 1	APAF1	16024631	death pathway
BORTEZOMIB	NM_001188	BCL2-antagonist/killer 1	BAK1	16024631	death pathway
BORTEZOMIB	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	16024631	death pathway
BORTEZOMIB	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	15781649, 16022909, 16024631	altered by bortezomib
BORTEZOMIB	NM_001191;NM_138578	BCL2-like 1	BCL2L1	12893773, 15543232, 15781649, 16024631	altered by bortezomib
BORTEZOMIB	NM_006538;NM_138621;NM_207002	BCL2-like 11 (apoptosis facilitator)	BCL2L11	16024631	death pathway
BORTEZOMIB	NM_001196;NM_197966;NM_197967	BH3 interacting domain death agonist	BID	12893773	death pathway
BORTEZOMIB	NM_001166	baculoviral IAP repeat-containing 2	BIRC2	12893773, 15543232, 15781649, 16024631	altered by bortezomib
BORTEZOMIB	NM_001165;NM_182962	baculoviral IAP repeat-containing 3	BIRC3	12893773, 16024631	altered by bortezomib
BORTEZOMIB	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	16373703	
BORTEZOMIB	NM_001216	carbonic anhydrase IX	CA9	16061869	altered by bortezomib
BORTEZOMIB	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	12893773, 15735676, 16024631, 16675587, 17121930	death pathway
BORTEZOMIB	NM_001227;NM_033338;NM_033339;NM_033340	caspase 7, apoptosis-related cysteine peptidase	CASP7	16024631	death pathway
BORTEZOMIB	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	12893773, 15735676, 16024631	death pathway
BORTEZOMIB	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	12893773, 15735676, 16024631	death pathway
BORTEZOMIB	NM_053056	cyclin D1	CCND1	12893773, 15781649	sensitivity
BORTEZOMIB	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	12893773, 15543232	
BORTEZOMIB	NM_004064	cyclin-dependent kinase inhibitor 1B (p27, Kip1)	CDKN1B	15543232	

BORTEZOMIB	NM_001127183;NM_001127184;NM_003879	CASP8 and FADD-like apoptosis regulator	CFLAR	12893773, 16024631	altered by bortezomib
BORTEZOMIB	NM_018947	cytochrome c, somatic	CYCS	12893773, 16024631	death pathway
BORTEZOMIB	NM_000761	cytochrome P450, family 1, subfamily A, polypeptide 2	CYP1A2	15764713	drug metabolism
BORTEZOMIB	NM_000769	cytochrome P450, family 2, subfamily C, polypeptide 19	CYP2C19	15764713	drug metabolism
BORTEZOMIB	NM_000771	cytochrome P450, family 2, subfamily C, polypeptide 9	CYP2C9	15764713	drug metabolism
BORTEZOMIB	NM_000106;NM_001025161	cytochrome P450, family 2, subfamily D, polypeptide 6	CYP2D6	15764713	drug metabolism
BORTEZOMIB	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A4	15764713	drug metabolism
BORTEZOMIB	NM_004083	DNA-damage-inducible transcript 3	DDIT3	16024631	altered by bortezomib
BORTEZOMIB	NM_004401;NM_213566	DNA fragmentation factor, 45kDa, alpha polypeptide	DFFA	15735676	
BORTEZOMIB	NM_019887;NM_138929	diablo homolog (Drosophila)	DIABLO	12893773, 16024631	death pathway
BORTEZOMIB	NM_001530;NM_181054	hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)	HIF1A	16061869	altered by bortezomib
BORTEZOMIB	-	-	HSP27	-	resistance
BORTEZOMIB	NM_005347	heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)	HSPA5	16024631	altered by bortezomib
BORTEZOMIB	NM_013247;NM_145074	HtrA serine peptidase 2	HTRA2	16024631	death pathway
BORTEZOMIB	NM_002228	jun oncogene	JUN	15735676	altered by bortezomib
BORTEZOMIB	NM_002755	mitogen-activated protein kinase kinase 1	MAP2K1	12893773	
BORTEZOMIB	NM_003010	mitogen-activated protein kinase kinase 4	MAP2K4	15735676	
BORTEZOMIB	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	12893773	altered by bortezomib
BORTEZOMIB	NM_001315;NM_139012;NM_139013;NM_139014	mitogen-activated protein kinase 14	MAPK14	12893773	altered by bortezomib
BORTEZOMIB	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	12893773	altered by bortezomib
BORTEZOMIB	NM_002750;NM_139046;NM_139047;NM_139049	mitogen-activated protein kinase 8	MAPK8	12893773	altered by bortezomib
BORTEZOMIB	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	12893773	resistance

BORTEZOMIB	NM_003998	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	NFKB1	12893773, 16230421, 17164350	resistance
BORTEZOMIB	NM_020529	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	NFKBIA	15543232	altered by bortezomib
BORTEZOMIB	NM_001001716;NM_002503	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, beta	NFKBIB	15543232	altered by bortezomib
BORTEZOMIB	NM_004556	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, epsilon	NFKBIE	15543232	
BORTEZOMIB	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	12893773, 15735676	altered by bortezomib
BORTEZOMIB	-	-	PDCD8	12893773, 16024631	
BORTEZOMIB	NM_021127	phorbol-12-myristate-13-acetate-induced protein 1	PMAIP1	16024631	death pathway
BORTEZOMIB	NM_002793	proteasome (prosome, macropain) subunit, beta type, 1	PSMB1	-	target resistance
BORTEZOMIB	NM_002794	proteasome (prosome, macropain) subunit, beta type, 2	PSMB2	-	target resistance
BORTEZOMIB	NM_001130725;NM_001144932;NM_002797	proteasome (prosome, macropain) subunit, beta type, 5	PSMB5	-	target resistance
BORTEZOMIB	NM_002807	proteasome (prosome, macropain) 26S subunit, non-ATPase, 1	PSMD1	-	target ?
BORTEZOMIB	NM_002808	proteasome (prosome, macropain) 26S subunit, non-ATPase, 2	PSMD2	-	target ?
BORTEZOMIB	NM_002880	v-raf-1 murine leukemia viral oncogene homolog 1	RAF1	12893773	altered by bortezomib
BORTEZOMIB	NM_000321	retinoblastoma 1	RB1	12893773	
BORTEZOMIB	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	12893773, 16061869, 16230421, 17164350	resistance
BORTEZOMIB	NM_006142	stratifin	SFN	16373703	
BORTEZOMIB	NM_003150;NM_139276;NM_213662	signal transducer and activator of transcription 3 (acute-phase response factor)	STAT3	17164350	altered by bortezomib
BORTEZOMIB	NM_000594	tumor necrosis factor (TNF superfamily, member 2)	TNF	16230421	
BORTEZOMIB	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	15543232, 16061869, 16373703	unrelated
BORTEZOMIB	NM_021138	TNF receptor-associated factor 2	TRAF2	16024631	
BORTEZOMIB	NM_001167	X-linked inhibitor of apoptosis	XIAP	12893773, 15543232, 16024631	altered by bortezomib

CELECOXIB	NM_001105515;NM_005845	ATP-binding cassette, sub-family C (CFTR/MRP), member 4	ABCC4	18690847	
CELECOXIB	NM_001023587;NM_005688	ATP-binding cassette, sub-family C (CFTR/MRP), member 5	ABCC5	18690847	
CELECOXIB	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	14654083, 16123214, 17270149	altered by celecoxib
CELECOXIB	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	14654083	
CELECOXIB	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	14654083	
CELECOXIB	NM_001191;NM_138578	BCL2-like 1	BCL2L1	14654083	
CELECOXIB	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	16004971,16123214,17270149,16707021, 17270149	altered by celecoxib
CELECOXIB	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	16123214	death pathway
CELECOXIB	NM_053056	cyclin D1	CCND1	15489888, 17270149	altered by celecoxib
CELECOXIB	NM_001127183;NM_001127184;NM_003879	CASP8 and FADD-like apoptosis regulator	CFLAR	-	resistance
CELECOXIB	NM_001278	conserved helix-loop-helix ubiquitous kinase	CHUK	15489888	
CELECOXIB	NM_000103;NM_031226	cytochrome P450, family 19, subfamily A, polypeptide 1	CYP19A1	15964185	altered by celecoxib
CELECOXIB	NM_001927	desmin	DES	18089846	
CELECOXIB	NM_004864	growth differentiation factor 15	GDF15	18089846	
CELECOXIB	NM_000852	glutathione S-transferase pi 1	GSTP1	18089846	
CELECOXIB	NM_000576	interleukin 1, beta	IL1B	16357062	altered by celecoxib
CELECOXIB	NM_000600	interleukin 6 (interferon, beta 2)	IL6	16702388	altered by celecoxib
CELECOXIB	NM_002755	mitogen-activated protein kinase kinase 1	MAP2K1	16123214	
CELECOXIB	NM_030662	mitogen-activated protein kinase kinase 2	MAP2K2	16123214	
CELECOXIB	NM_021960;NM_182763	myeloid cell leukemia sequence 1 (BCL2-related)	MCL1	14654083	
CELECOXIB	NM_002417	antigen identified by monoclonal antibody Ki-67	MKI67	16507397	
CELECOXIB	NM_003998	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	NFKB1	15489888	
CELECOXIB	NM_020529	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	NFKBIA	15489888	

CELECOXIB	NM_002507	nerve growth factor receptor (TNFR superfamily, member 16)	NGFR	17447067	
CELECOXIB	NM_001159995;NM_001159996;NM_001159999;NM_001160001;NM_001160008;NM_004495;NM_013956;NM_013957;NM_013958;NM_013959;NM_013960;NM_013961;NM_013962;NM_013964	neuregulin 1	NRG1	16357062	altered by celecoxib
CELECOXIB	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	16123214	altered by celecoxib
CELECOXIB	NM_002613;NM_031268	3-phosphoinositide dependent protein kinase-1	PDPK1	-	target
CELECOXIB	NM_000963	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PTGS2	15489888, 16004971, 16507397, 18089846	target
CELECOXIB	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	15489888, 16685529, 17097285	altered by celecoxib
CELECOXIB	NM_000351	steroid sulfatase (microsomal), isozyme S	STS	16178010	
CELECOXIB	NM_003167	sulfotransferase family, cytosolic, 2A, dehydroepiandrosterone (DHEA)-preferring, member 1	SULT2A1	15483193, 17239972	altered by celecoxib
CELECOXIB	NM_000594	tumor necrosis factor (TNF superfamily, member 2)	TNF	15489888, 16702388	
CELECOXIB	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	16507397	
COLCHICINE	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	15342794, 15725475, 16007523	resistance
COLCHICINE	NM_004996;NM_019862;NM_019898;NM_019899;NM_019900	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ABCC1	12067707	resistance
COLCHICINE	NM_000611;NM_001127223;NM_001127225;NM_001127226;NM_001127227;NM_203329;NM_203330;NM_203331	CD59 molecule, complement regulatory protein	CD59	17045307	
COLCHICINE	NM_001025076;NM_001025077;NM_001083591;NM_006561	CUG triplet repeat, RNA binding protein 2	CUGBP2	11478917	
COLCHICINE	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A4	16007523,16	drug metabolism
COLCHICINE	NM_001556	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta	IKBKB	17029595	

COLCHICINE	NM_002228	jun oncogene	JUN	12221076	death pathway / survival
COLCHICINE	NM_002750;NM_139046;NM_139047;NM_139049	mitogen-activated protein kinase 8	MAPK8	12221076	death pathway / survival
COLCHICINE	NM_001135044;NM_002752;NM_139068;NM_139069;NM_139070	mitogen-activated protein kinase 9	MAPK9	12221076	death pathway / survival
COLCHICINE	NM_000243	Mediterranean fever	MEFV	-	
COLCHICINE	NM_001136022;NM_004554	nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 4	NFATC4	17044076	
COLCHICINE	NM_003998	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	NFKB1	15744361	
COLCHICINE	NM_020529	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	NFKBIA	17029595	
COLCHICINE	NM_000176;NM_001018074;NM_001018075;NM_001018076;NM_001018077;NM_001020825;NM_001024094	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)	NR3C1	15744361	
COLCHICINE	NM_004103;NM_173174;NM_173175;NM_173176	PTK2B protein tyrosine kinase 2 beta	PTK2B	11478917	
COLCHICINE	NM_006788	ralA binding protein 1	RALBP1	15386349	unrelated
COLCHICINE	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	15744361	
COLCHICINE	NM_000353	tyrosine aminotransferase	TAT	15744361	altered by colchicine
COLCHICINE	NM_000546;NM_001126112;NM_001126113;NM_001126114;NM_001126115;NM_001126116;NM_001126117	tumor protein p53	TP53	12221076	cell death
COLCHICINE	NM_030773	tubulin, beta 1	TUBB1	-	target
COLCHICINE	NM_001069	tubulin, beta 2A	TUBB2A	-	target
OBLIMERSEN	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	11095261, 15867202	target
OBLIMERSEN	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	16675587	
OBLIMERSEN	-	-	IGH-6	15867202	
TEGAFUR	NM_001785	cytidine deaminase	CDA	18537153	
TEGAFUR	NM_000762	cytochrome P450, family 2, subfamily A, polypeptide 6	CYP2A6	11376561, 12172220,11376561, 15980104	target

TEGAFUR	NM_000110	dihydropyrimidine dehydrogenase	DPYD	18537153	
TIPIFARNIB	NM_000927	ATP-binding cassette, sub-family B (MDR/TAP), member 1	ABCB1	15122075	resistance
TIPIFARNIB	NM_017460	cytochrome P450, family 3, subfamily A, polypeptide 4	CYP3A4	15122075	
TIPIFARNIB	NM_000777	cytochrome P450, family 3, subfamily A, polypeptide 5	CYP3A5	15122075	
TIPIFARNIB	NM_000463	UDP glucuronosyltransferase 1 family, polypeptide A1	UGT1A1	15122075	
VORINOSTAT	NM_001014431;NM_001014432;NM_005163	v-akt murine thymoma viral oncogene homolog 1	AKT1	15781658, 16144943	
VORINOSTAT	NM_001188	BCL2-antagonist/killer 1	BAK1	15781658, 16144943	death pathway
VORINOSTAT	NM_004324;NM_138761;NM_138763;NM_138764;NM_138765	BCL2-associated X protein	BAX	15781658, 15897598	death pathway
VORINOSTAT	NM_000633;NM_000657	B-cell CLL/lymphoma 2	BCL2	15897598, 16144943,15897598	resistance
VORINOSTAT	NM_001114735;NM_004049	BCL2-related protein A1	BCL2A1	15897598	resistance
VORINOSTAT	NM_001191;NM_138578	BCL2-like 1	BCL2L1	12893773, 16144943,15897598	resistance
VORINOSTAT	NM_006538;NM_138621;NM_207002	BCL2-like 11 (apoptosis facilitator)	BCL2L11	16144943	death pathway
VORINOSTAT	NM_001196;NM_197966;NM_197967	BH3 interacting domain death agonist	BID	12893773, 17410615, 17410615,15897598	death pathway
VORINOSTAT	NM_001166	baculoviral IAP repeat-containing 2	BIRC2	12893773, 16377638	
VORINOSTAT	NM_001165;NM_182962	baculoviral IAP repeat-containing 3	BIRC3	12893773, 15897598, 16377638	altered by vorinostat
VORINOSTAT	NM_001012270;NM_001012271;NM_001168	baculoviral IAP repeat-containing 5	BIRC5	16144943,17410615, 17410615, 18156316	altered by vorinostat
VORINOSTAT	NM_032982;NM_032983	caspase 2, apoptosis-related cysteine peptidase	CASP2	15897598	death pathway
VORINOSTAT	NM_004346;NM_032991	caspase 3, apoptosis-related cysteine peptidase	CASP3	12893773, 15781658, 15897598, 17410615	death pathway
VORINOSTAT	NM_001227;NM_033338;NM_033339;NM_033340	caspase 7, apoptosis-related cysteine peptidase	CASP7	15897598	death pathway
VORINOSTAT	NM_001080124;NM_001080125;NM_001228;NM_033355;NM_033356;NM_033358	caspase 8, apoptosis-related cysteine peptidase	CASP8	12893773, 15781658, 15897598, 17410615	death pathway
VORINOSTAT	NM_001229;NM_032996	caspase 9, apoptosis-related cysteine peptidase	CASP9	12893773, 15897598	death pathway
VORINOSTAT	NM_053056	cyclin D1	CCND1	12893773, 17431121,12893773	altered by vorinostat

VORINOSTAT	NM_000389;NM_078467	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CDKN1A	12893773, 16144943,17431121,15897598,12893773,14707268, 17431121	altered by vorinostat
VORINOSTAT	NM_004064	cyclin-dependent kinase inhibitor 1B (p27, Kip1)	CDKN1B	16144943,17431121, 17431121	altered by vorinostat
VORINOSTAT	NM_001127183;NM_001127184;NM_003879	CASP8 and FADD-like apoptosis regulator	CFLAR	12893773, 15897598	resistance
VORINOSTAT	NM_018947	cytochrome c, somatic	CYCS	12893773, 15781658	death pathway
VORINOSTAT	NM_000499	cytochrome P450, family 1, subfamily A, polypeptide 1	CYP1A1	15713371	altered by vorinostat
VORINOSTAT	NM_000104	cytochrome P450, family 1, subfamily B, polypeptide 1	CYP1B1	15713371	altered by vorinostat
VORINOSTAT	NM_019887;NM_138929	diablo homolog (Drosophila)	DIABLO	12893773	death pathway
VORINOSTAT	NM_001005862;NM_004448	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)	ERBB2	16144943	altered by vorinostat
VORINOSTAT	NM_004964	histone deacetylase 1	HDAC1	15930892	target
VORINOSTAT	NM_001527	histone deacetylase 2	HDAC2	-	target
VORINOSTAT	NM_003883	histone deacetylase 3	HDAC3	15930892	target
VORINOSTAT	NM_006044	histone deacetylase 6	HDAC6	15930892	target
VORINOSTAT	NM_018486	histone deacetylase 8	HDAC8	-	target
VORINOSTAT	NM_003493	histone cluster 3, H3	HIST3H3	17431121	altered by vorinostat
VORINOSTAT	NM_013247;NM_145074	HtrA serine peptidase 2	HTRA2	16026644	death pathway
VORINOSTAT	NM_002755	mitogen-activated protein kinase kinase 1	MAP2K1	12893773, 15781658	
VORINOSTAT	NM_002745;NM_138957	mitogen-activated protein kinase 1	MAPK1	12893773, 15781658	
VORINOSTAT	NM_001315;NM_139012;NM_139013;NM_139014	mitogen-activated protein kinase 14	MAPK14	12893773	altered by vorinostat
VORINOSTAT	NM_001040056;NM_001109891;NM_002746	mitogen-activated protein kinase 3	MAPK3	12893773, 15781658	
VORINOSTAT	NM_002750;NM_139046;NM_139047;NM_139049	mitogen-activated protein kinase 8	MAPK8	12893773, 15781658, 15964800	altered by vorinostat
VORINOSTAT	NM_003998	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	NFKB1	12893773	altered by vorinostat
VORINOSTAT	NM_001618	poly (ADP-ribose) polymerase 1	PARP1	12893773, 16377638, 17431121,15897598	altered by vorinostat

VORINOSTAT	-	-	PDCD8	12893773, 15781658, 16026644	death pathway
VORINOSTAT	NM_002880	v-raf-1 murine leukemia viral oncogene homolog 1	RAF1	12893773, 16144943,12893773	altered by vorinostat
VORINOSTAT	NM_000965;NM_016152	retinoic acid receptor, beta	RARB	16832676	
VORINOSTAT	NM_000321	retinoblastoma 1	RB1	12893773, 14707268, 15897598	altered by vorinostat
VORINOSTAT	NM_001145138;NM_021975	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	RELA	12893773, 15964800	altered by vorinostat
VORINOSTAT	NM_000594	tumor necrosis factor (TNF superfamily, member 2)	TNF	16377638	
VORINOSTAT	NM_003810	tumor necrosis factor (ligand) superfamily, member 10	TNFSF 10	17410615	
VORINOSTAT	NM_001167	X-linked inhibitor of apoptosis	XIAP	12893773, 15964800, 16144943,17410615, 17410615	altered by vorinostat

Table 2

Chemical	Target Genes	Target Genes List	Found Targets	Found Targets List (with fold-changes)	Avg Abs(FC)	Avg Abs(FC) UP-REG	Score
Nucleotides							
Nucleotides >> Antimetabolites							
Nucleotides >> Antimetabolites >> Folic acid							
METHOTREXATE *(Abitrexate, Antifolan, Arbitrexate, Emtexate, Folex, Ledertrexate, Metatrexan, Methotrate, Mexate, Rheumatrex, Trexall)*	35	ABCB1 ABCC1 ABCC2 ABCC4 ABCG2 ALB ALPI ATIC CD4 CD68 CD8A CYP3A4 DHFR DKK1 GSTM1 ICAM1 IL8 MMP3 MTHFR MTR NAT1 ODC1 PARP1 PRC1 RB1 SELE SLC19A1 SLC46A1 TAGLN TIMP1 TYMS UBE2C VDR WISP1 WNT5A	19 (10+9) (54.3%)	ABCC1 (7.70) ABCC2 (4.39, 5.45) ABCC4 (2.34) ATIC (3.75) NAT1 (2.39) PARP1 (2.68) PRC1 (3.44) TYMS (3.69) UBE2C (9.47) WNT5A (28.92) ABCB1 (-3.59) CD68 (-3.38) CYP3A4 (-7.84) DKK1 (-16.44) ICAM1 (-8.24) IL8 (-16.97) SLC19A1 (-3.24) TIMP1 (-4.76) VDR (-6.07)	7.36	6.93	197
PEMETREXED *(Alimta)*	8	DHFR FPGS GART GGH RBM17 SLC19A1 TYMP TYMS	4 (2+2) (50.0%)	GART (2.18) TYMS (3.69) SLC19A1 (-3.24) TYMP (-3.83, -5.95)	3.50	2.94	73
Nucleotides >> Antimetabolites >> Purine							
FLUDARABINE *(Fludara, Fludura)*	25	ADA AKT1 ARNT BCL2 CCNA2 CCND1 CCNE1 CDKN1B CYCS DIABLO ERK HIF1A HIST3H3 HIST4H4 MAP2K1 MAP2K2 MAPK1 MAPK3 MCL1 PDCD8 POLA1 RRM1 STAT1 VEGFA XIAP	6 (4+2) (24.0%)	CCNA2 (5.27) CCNE1 (5.62) HIST3H3 (2.04) VEGFA (2.60) CCND1 (-2.52) MCL1 (-3.34)	3.56	3.88	62
Nucleotides >> Antimetabolites >> Pyrimidine							
FLUOROURACIL *(5 FU, Fluorouracil, Adrucil, Arumel, Carac, Carzonal, Effluderm, Efudex, Efudix, Efurix, FU, Fluoroblastin, Fluoroplex, Fluracil, Fluracilum, Fluri, Fluril, Fluro, Uracil, Ftoruracil, Kecimeton, Phthoruracil, Phtoruracil, Queroplex, Timazin, URF, Ulup)*	132	ABCB1 ABCC1 ABCG2 ACADL ADSS AIFM1 AMFR AMT ANGPTL2 AREG ATP5O BARX2 BAX BBS4 BCL2 BDH1 BECN1 BIRC5 BNIP3 BNIP3L BOLL BTG3 BUB3 C13ORF34 CA12 CASP2 CASP3 CASP7 CASP8 CASP9 CCND3 CCNE2 CCNF CCNG2 CDCA8 CDKN1A CDKN1C CIDEB CKS2 CTNND2 CTTN CYR61 DPYD DRD5 DTYMK E2F3 EGFR EIF2B2 EIF3S3 EML2 ERBB2 ERBB4 ERCC1 ERCC2 ERP29 F3 F8 FANCG FAS FEN1 FGF7	64 (35+29) (48.5%)	ABCC1 (7.70) ADSS (3.13, 3.02) BECN1 (2.18) CA12 (21.62, 17.07, 11.24, 25.25) CASP2 (2.27) CASP3 (2.14) CASP8 (8.85, 2.67) CCNE2 (3.25) CCNF (2.52) CDCA8 (2.55) CTNND2 (3.12, 2.44) CTTN (2.13) DTYMK (2.69, 2.60) E2F3 (2.71) EML2 (4.55) FEN1 (2.79, 2.41) FOXO3 (2.21) GOLGA8A (8.56) GSTP1 (3.00) KPNA2 (2.49) LTB4DH (18.28) MED13L (6.09) MELK (6.04) MKI67 (5.91) NDUFA10 (2.42) NKAIN1 (22.33) PARP1 (2.68) PCDHA5 (2.75) PRC1 (3.44) RAD23B (2.57, 2.55, 4.15) RNF34	7.06	5.18	137

		FOXO3 GADD45A GAMT GFRA1 GOLGA8A GSTP1 GSTT1 HINT1 HIST1H1D HNRPC IGFBP4 IL8RA IRAK1 JMJD2B KIAA1467 KIF3A KPNA2 KRAS LGALS8 LMNB1 LTB4DH M6PR MALT1 MAPK13 MAPT MED13L MELK METRN MKI67 MYC NDUFA10 NKAIN1 NUCKS1 PARP1 PCDHA5 PDAP1 PGR PPP3CA PRC1 PRNP PSCD3 PSG9 PSRC1 RAD23B RAMP1 RNF34 RPL3 RRM2 RTKN SCUBE2 SERPINE2 SFN SNAPC1 TERF2 THNSL2 TMSB4X TMSL8 TNFRSF10B TP53 TYMP TYMS UBE2C UPP1 UPRT UXT WBSCR1 XAF1 ZNF32 ZNF552 ZNF582 ZRSR2		(2.18, 2.49, 2.45) RRM2 (3.30, 3.47) TYMS (3.69) UBE2C (**9.47**) ZNF552 (**8.76**, 2.45) ABCB1 (-3.59) ACADL (-**19.18**) AMFR (**-5.37**) ANGPTL2 (-2.89, -3.89) AREG (**-119.30**) BTG3 (-**7.01**) CDKN1A (**-7.85**, -4.44) CDKN1C (**-7.69**) CYR61 (-3.69, -2.81, -3.06) DPYD (-2.82, -4.07, -4.30) EGFR (-**12.64**) ERBB4 (-3.94, -3.33) F3 (-3.63) F8 (-3.51, -2.90) FAS (**-5.93**) FGF7 (-2.01, -3.09, -3.61) GAMT (-3.39, -2.43) GFRA1 (**-5.66**) IGFBP4 (-2.66) IL8RA (**-5.26**) LGALS8 (-2.28) PGR (**-11.29**) PPP3CA (-2.42) PRNP (-3.95) TMSB4X (-2.05) TMSL8 (**-11.70**) TNFRSF10B (-2.25) TYMP (-3.83, **-5.95**) UPP1 (-3.24, -2.71, -2.28)			
CAPECITABINE *(Xeloda)*	5	CES1 CES2 CES3 DPYD TYMS	4 (3+1) (80.0%)	CES1 (**13.90**) CES3 (**10.19**) TYMS (3.69) DPYD (-2.82, -4.07, -4.30)	7.88	9.26	555
GEMCITABINE *(DDFC, DFDC, GEO, Gemcin, Gemcitabina, Gemcitabine, HCl, Gemcitabine hydrochloride, Gemcitabinum, Gemtro, Gemzar)*	12	BAX BCL2 CASP3 CDKN1A CMPK PARP1 PDPK1 RBM17 RRM1 SLC29A1 TP53 TYMS	4 (3+1) (33.3%)	CASP3 (2.14) PARP1 (2.68) TYMS (3.69) CDKN1A (**-7.85**, -4.44)	3.66	2.84	70
DNA							
DNA >> Alkylating agents							
DNA >> Alkylating agents >> Nitrogen mustards							
CYCLOPHOSPHAMIDE *(ASTA, Asta B 518, CP, CPA, CTX, CY, Clafen, Claphene, Cyclophosphamid, Cyclophosphamide Monohydrate, Cyclophosphamide Sterile, Cyclophosphamidum, Cyclophosphan, Cyclophosphane, Cyclophosphoramide, Cyclostin, Cyklofosfamid, Cytophosphan, Cytoxan, Cytoxan, Lyoph, EndoxanEndoxan, R,*	56	ABCB1 ABCC1 ABCG2 AMFR BAG1 BBS4 BCL2 BECN1 BTG3 BUB3 CA12 CASP3 CASP9 CDKN1B CTNNBIP1 CTNND2 CYP2B6 E2F3 EGFR EIF1AX EIF4EBP1 ERBB2 ERBB4 ESR1 ESR2 GAMT GFRA1 GSTA1 GTF3C1 IGFBP4 ILF3 IRS1 JMJD2B KIAA1467 KIF3A MAPK14 MAPT MED13L MELK METRN MGMT MKI67 NAIP NKAIN1 PGR PLOD1 PLOD3 RAMP1 RRM2 SCUBE2 SRM ST14 STK39 THNSL2 TP53 ZNF552	29 (17+12) (51.8%)	ABCC1 (**7.70**) BECN1 (2.18) CA12 (**21.62**, **17.07**, **11.24**, **25.25**) CASP3 (2.14) CTNND2 (3.12, 2.44) CYP2B6 (**10.92**, 3.17) E2F3 (2.71) GSTA1 (**16.89**) ILF3 (3.78) MED13L (**6.09**) MELK (**6.04**) MKI67 (**5.91**) NKAIN1 (**22.33**) RRM2 (3.30, 3.47) ST14 (2.22) STK39 (**6.44**, **6.78**) ZNF552 (**8.76**, 2.45) ABCB1 (-3.59) AMFR (**-5.37**) BTG3 (**-7.01**) CTNNBIP1 (-**7.17**) EGFR (**-12.64**) ERBB4 (-3.94, -3.33) GAMT (-3.39, -2.43) GFRA1 (**-5.66**) IGFBP4 (-2.66) IRS1 (**-13.62**) PGR (-**11.29**) PLOD1 (-2.05)	6.89	7.19	218

Endoxan-Asta, Endoxana, Endoxanal, Endoxane, Enduxan, Genoxal, Hexadrin Lyophilized, Cytoxan, Mitoxan, Neosar, Procytox, Rcra, Waste, Number, U058, Revimmune, Semdoxan, Sendoxan, Senduxan, Zyklophosphamid)							
IFOSFAMIDE *(Cyfos, Holoxan, 1000, IFEX, Ifex/Mesnex Kit, Ifosfamide/Mesna Kit, Isoendoxan, Mitoxana, Naxamide)*	10	BCL2 CASP9 CYP2A6 CYP2B6 CYP3A4 CYP3A5 DNMT1 GSTM1 GSTP1 GSTT1	5 (3+2) (50.0%)	CYP2B6 (**10.92**, 3.17) DNMT1 (2.20) GSTP1 (3.00) CYP3A4 (**-7.84**) CYP3A5 (**-34.94**)	11.00	4.08	122
MELPHALAN *(Alkeran, L-PAM, L-Phenylalanine mustard, L-Sarcolysin, L-Sarcolysine, L-Sarkolysin, Levofalan, Melfalan, Mephalan, Phenylalanine mustard, Phenylalanine nitrogen mustard, Sarcolysine,* Sarkolysin)	9	ABCC1 BIRC5 CASP2 CASP3 CDA GSTA1 GSTP1 MGMT MGST2	5 (5+0) (55.6%)	ABCC1 (**7.70**) CASP2 (2.27) CASP3 (2.14) GSTA1 (**16.89**) GSTP1 (3.00)	6.40	6.40	355
DNA >> Alkylating agents >> Nitrosoureas							
CARMUSTINE *(Becenun, Bi CNU, BiCNU, Carmubris, Gliadel, Gliadel Wafer, Nitrumon)*	230	ABCB1 ABCC1 ACTC1 ACTG2 ACTN1 ADAM15 ADAMTS4 ADCYAP1 ADRA1B AGT AGTRL1 AKT2 ALAD ALOX15B AMH APC2 AQP8 ARGBP2 ARPC2 ARTN ASMTL ATP1A3 ATP4B ATP5D ATP6V0C ATXN2L AVPR1A B4GALT5 BAIAP2 BAIAP3 BCL10 BCL2 BCL2L1 BECN1 BICD1 BLK BMP7 BRF1 CA6 CALB2 CCL2 CD151 CD68 CD79A CD80 CDC25C CDK8 CDKN1A CDX4 CEACAM3 CEBPB CHEK1 CHRM4 CHRNB3 CHRNG CKM CLTCL1 CNTNAP1 COL9A1 COX6A2 CRABP1 CRAT CRYBB1 CST5 CTF1 CTNNAL1 CYP19A1 DHX16 DNASE1L2 DVL1 ECM2 EEF1G EIF2B1 EIF6 EPHX1 ESRRA EZH2 FBN1 FKBP1A FNTA FOXJ1 FTH1 FTL	106 (50+56) (46.1%)	ABCC1 (**7.70**) AGT (3.57) AKT2 (2.40, 3.07, 2.01) ALAD (4.21) AMH (2.39) AQP8 (3.03) B4GALT5 (2.55, 2.84) BAIAP3 (2.18) BECN1 (2.18) BICD1 (**13.67**) BLK (3.63) CDC25C (**8.00**) CDK8 (2.39) CEACAM3 (2.96, 2.75) CHEK1 (4.69) CKM (**20.86**) CLTCL1 (**5.12**) CRABP1 (3.09) CYP19A1 (2.64) DHX16 (2.71) DVL1 (2.75, 2.21) EIF2B1 (2.16) EPHX1 (4.56) EZH2 (4.80) FNTA (3.94) FTH1 (2.42, 2.32, 2.35) FTL (3.51, 4.41, 3.40) GCM1 (2.70) GOLGA2 (2.44, 2.57) GPR37 (2.96) GRB7 (2.78) GSR (**10.75**, **10.84**) GSTA1 (**16.89**) GSTP1 (3.00) HNF1A (3.45) INPPL1 (2.26) KCNH2 (4.05) MAP4K2 (2.72) MAPK10 (3.15) MAT1A (**6.12**) MDK (**17.02**) MED1 (2.44) NPAS1 (4.81) PRC1 (3.44) PTPN3 (2.46, 2.03) RAD51 (4.60) SLCO1A2 (2.31) SMPD2	5.24	4.73	102

		FYN GABRA2 GABRA6 GAMT GAST GCM1 GDI1 GDI2 GFAP GHSR GNRHR GOLGA2 GOLGA4 GP1BB GPR25 GPR32 GPR37 GPR65 GRB7 GRN GSR GSTA1 GSTM1 GSTM3 GSTP1 GTF2F1 H2AFX HADHSC HAGH HCFC1 HMGN2 HNF1A HOXA4 ICAM5 IDS IER3 IKBKG INPPL1 INSIG1 INSL3 IRS1 ISLR ITGA3 ITIH1 KCNH2 KIF5A KRT17 KRT31 LAD1 LAIR1 LAMB3 LMX1B LOXL1 LRCH4 LRMP MAD1L1 MAP4K2 MAPK10 MAT1A MDK MED1 MGAT3 MGMT MSR1 MUC2 MVD MYBPH MYD88 MYOD1 MYOG NDUFC1 NKX2-2 NPAS1 NPBWR2 NRTN OMP PAEP PAX8 PBX2 PCBD1 PCDHGC3 PCOLCE PCYT1A PFKFB2 PFKM PFN1 PIK3R3 PMS2L11 POLR2E PPM1G PRC1 PRL PRM2 PSCD1 PTPN3 PZP RAD23A RAD51 RAD9 RCN1 RGR RIT2 RNASE4 SEPT5 SFPQ SGCA SHMT2 SHOX SIAT1 SLC10A1 SLC16A2 SLC30A3 SLC6A2 SLCO1A2 SMARCD1 SMPD2 SNAPC1 SNAPC3 SNCG SNRPB2 SOCS1 SPEG SPRR2B SRP14 SRY ST8SIA1 STAM STS STX1B STXBP2 TAC1 TCF21 TEGT TLE3 TNFRSF11B TP53 TRAF1 TSPAN4 TUBB TUBG1 UGT8 UPF1 VGF WIPF1 YWHAH ZBTB17 ZYX		(2.55) SNCG (2.23) UGT8 (**5.58**, **9.40**) ABCB1 (-3.59) ACTG2 (**-9.33**) ACTN1 (-2.46, -2.62) ADAMTS4 (-3.13, **-5.12**) ADRA1B (**-7.78**) ALOX15B (**-17.05**) ATP1A3 (**-5.85**) BAIAP2 (-4.34, -2.72, -3.14) BCL10 (-2.16, -3.00) BMP7 (**-16.37**, -4.33) BRF1 (-3.38) CALB2 (**-5.76**) CCL2 (**-8.86**) CD151 (-2.41) CD68 (-3.38) CDKN1A (**-7.85**, -4.44) COX6A2 (-2.12) CRAT (-3.15) CST5 (-2.40) CTNNAL1 (**-5.85**) FBN1 (-2.95) FKBP1A (**-5.05**) FOXJ1 (**-5.38**, -2.05) FYN (-2.59) GAMT (-3.39, -2.43) GDI2 (-2.36) GPR65 (-2.59) GSTM3 (-3.01) HOXA4 (**-8.73**) IER3 (-4.31) IRS1 (**-13.62**) KRT17 (**-5.21**) LAIR1 (-2.82) LAMB3 (**-23.74**) LOXL1 (-2.57) MAD1L1 (-2.73) MGAT3 (**-12.97**) MSR1 (-2.93, -2.73) MYBPH (-4.47) MYD88 (-2.51) NRTN (**-7.31**) PAX8 (**-5.65**) PCOLCE (-3.31) PZP (-2.82) RCN1 (-2.52, -2.24) RNASE4 (-2.13) SGCA (**-17.29**) SLC16A2 (**-6.80**) SNRPB2 (-2.25) SOCS1 (**-5.85**, **-5.20**) SPEG (**-5.28**) ST8SIA1 (**-6.37**) TCF21 (**-20.30**) TSPAN4 (-3.44, -3.61) WIPF1 (-2.18, -3.58) ZYX (-3.12)			
FOTEMUSTINE *(Muphoran)*	2	MGMT TXNRD1	1 (1+0) (50.0%)	TXNRD1 (**12.56**)	12.56	12.56	627
DNA >> Alkylating agents >> Platinum							
CARBOPLATIN *(Paraplatin, Paraplatin-AQ)*	11	ALB BAX BCL2 BCL2L12 BIRC2 CASP3 CASP9 DCT FAS PARP1 RBM17	4 (3+1) (36.4%)	BCL2L12 (4.27) CASP3 (2.14) PARP1 (2.68) FAS (**-5.93**)	3.76	3.03	82
CISPLATIN *(Abiplatin, Biocisplatinum, Briplatin,*	11 1	A2M ABCB1 ABCC1 ABCC2 ABCC5 AKT1 AKT2 AKT3 ALB APEX1	54 (27+27) (48.6%)	ABCC1 (**7.70**) ABCC2 (4.39, **5.45**) ABCC5 (4.30, **6.53**) AKT2 (2.40, 3.07, 2.01)	5.10	4.46	108

Carboquone, Cis Pt II, Cismaplat, Cisplatine, Cisplatyl, Citoplationo, Lederplatin, Neoplatin, Plastin, Platamine, Platiblastin, Platidiam, Platinex, Platinol, Platinol-AQ, Platinoxan, Randa)		AXL BAX BCL2 BCL2L1 BCL2L12 BIRC2 BIRC3 BIRC5 CASP2 CASP3 CASP8 CASP9 CAT CDKN1A CFLAR CLU CNTF CREBBP CYCS CYP3A4 DIABLO DPYD EDN2 EGFR EP300 ERBB2 ERCC1 ERCC2 ETV4 FADD FANCG FAS FASLG FGFR3 FOSL1 GDF15 GSTM1 GSTM3 GSTP1 GSTT1 GUK1 HIF1A HSPE1 HTRA2 IFITM1 IGFBP3 IL4R ITGA9 ITGB4 JUN KRT19 KRT4 LASS4 MCM2 MED1 MGMT MMP10 MMP15 MMP16 MRPS27 MT1A MT2A MT3 MVP NAIP NCOA3 NOTCH4 NR1I2 NTHL1 PARP1 PCNA PDIA3 PFDN5 PGK1 PMAIP1 PRNP PTEN PTGS2 PTK2 RB1 RHOC RPL36 RPS5 RUNX3 SFN SLC31A1 SOCS1 SPINT2 TF TP53 TP73 TRAM1 TRAP1 TUBA1A TXN TYMS VEGFA XIAP XPA XRCC1 ZFP36L1		BCL2L12 (4.27) CASP2 (2.27) CASP3 (2.14) CASP8 (**8.85**, 2.67) CREBBP (2.11, 2.52) ETV4 (2.09) GSTP1 (3.00) HSPE1 (**5.96**) KRT4 (**8.00**) LASS4 (**5.10**) MCM2 (3.39) MED1 (2.44) NCOA3 (3.29, 4.36, 3.16) NR1I2 (3.23) PARP1 (2.68) PMAIP1 (**12.40**) PTK2 (2.54) SLC31A1 (2.02, 2.41) SPINT2 (**6.04**) TF (**9.84**, **8.91**) TXN (4.58, **5.09**) TYMS (3.69) VEGFA (2.60) A2M (-4.77) ABCB1 (-3.59) AKT3 (-3.90, -3.96) BIRC3 (-2.84) CAT (-3.31) CDKN1A (-**7.85**, -4.44) CYP3A4 (**-7.84**) DPYD (-2.82, -4.07, -4.30) EDN2 (-3.91) EGFR (**-12.64**) FAS (**-5.93**) FGFR3 (**-8.75**) GSTM3 (-3.01) IL4R (-4.02) ITGA9 (-2.21) JUN (-2.62) MMP10 (-2.05) MT1A (**-7.47**) MT2A (**-8.59**, **-9.15**) MVP (-2.25) NOTCH4 (-2.63, -3.15) PFDN5 (-2.17) PRNP (-3.95) PTEN (-2.30, -2.56) PTGS2 (-**36.04**, **-32.79**) SOCS1 (**-5.85**, -5.20) TRAM1 (-3.53)			
OXALIPLATIN *(DACPLAT, Eloxatin, Elplat, Foloxatine, Transplatin)*	17	BCL2 BCL2L1 BIRC5 CCNA2 CCNB1 CCNE1 CDC2 CDK2 CDKN1B EGFR ERCC1 ERCC2 GSTP1 IL8RA MYC RB1 TYMS	8 (6+2) (47.1%)	CCNA2 (**5.27**) CCNB1 (3.17) CCNE1 (**5.62**) CDC2 (2.92) GSTP1 (3.00) TYMS (3.69) EGFR (**-12.64**) IL8RA (**-5.26**)	5.20	3.95	139
DNA >> Alkylating agents >> Alkyl sulfonates							
BUSULFAN *(Busulfex, Citosulfan, Leucosulfan, Mablin, Mielevcin, Mielosan, Mielucin, Milecitan, Mileran, Misulban, Mitosan, Mitostan, Myeleukon, Myeloleukon, Myelosan, Mylecytan, Myleran, Myleran Tablets)*	5	GSTA1 GSTM1 GSTP1 MGMT MGST2	2 (2+0) (40.0%)	GSTA1 (**16.89**) GSTP1 (3.00)	9.95	9.95	397
DNA >> Alkylating agents >> Hydrazines							
PROCARBAZINE *(Matulane, Nathulane, Natulan, Natulan hydrochloride, Natulanar, Natunalar)*	1	MGMT	-	-	-	-	-
DNA >> Alkylating agents >> Triazenes							

DACARBAZINE *(Deticene)*	22	APEX1 BIRC5 CASP3 CASP8 CD38 CD69 CYP1A1 CYP1A2 EPO IFNA1 IFNA2 IL8 IRF1 MAP3K1 MAPK1 MAPK3 MCL1 MGMT POLA2 SLC2A1 TNFSF10 VEGFA	9 (5+4) (40.9%)	CASP3 (2.14) CASP8 (**8.85**, 2.67) MAP3K1 (2.06, 2.62) SLC2A1 (**22.83**) VEGFA (2.60) IL8 (**-16.97**) IRF1 (-2.23) MCL1 (-3.34) TNFSF10 (-**7.51**)	7.30	7.13	162
TEMOZOLOMIDE *(Temodal, Temodar)*	10	AGT DCT MGMT MPG PARP1 PMAIP1 POLB POLI POLL TP53	3 (3+0) (30.0%)	AGT (3.57) PARP1 (2.68) PMAIP1 (**12.40**)	6.21	6.21	186
DNA >> Alkylating agents >> Aziridines							
THIOTEPA *(Thioplex, Thiotepa)*	5	GSTA1 GSTA2 GSTM1 GSTP1 MGMT	3 (3+0) (60.0%)	GSTA1 (**16.89**) GSTA2 (**15.07**, **16.53**) GSTP1 (3.00)	11.90	11.90	713
DNA >> Alkylating agents >> Other							
ECTEINASCIDIN 743 *(Trabectedin, ET-743, Yondelis)*	4	CCNA2 CCNB1 CCNB2 E2F1	4 (4+0) (100.0%)	CCNA2 (**5.27**) CCNB1 (3.17) CCNB2 (4.19) E2F1 (2.45)	3.77	3.77	376
DNA >> Spindle poisons / Mitotic inhibitors							
DNA >> Spindle poisons / Mitotic inhibitors >> Taxanes							
DOCETAXEL *(Taxotere)*	33	ABCB1 ABCC1 ABCC2 BCL2 BCL2L1 BIRC5 CASP3 CFLAR CYP19A1 CYP1B1 CYP3A4 ERBB2 GSTP1 HIF1A HRAS IL6 MAPK1 MAPK3 MDM2 PAR1 PARP1 PGR POR PTGS2 RAF1 RB1 SKP2 TNF TNFRSF10B TP53 TUBB TUBB1 VEGFA	15 (7+8) (45.5%)	ABCC1 (**7.70**) ABCC2 (4.39, **5.45**) CASP3 (2.14) CYP19A1 (2.64) GSTP1 (3.00) PARP1 (2.68) VEGFA (2.60) ABCB1 (-3.59) CYP1B1 (-3.87) CYP3A4 (**-7.84**) HRAS (-2.10) IL6 (**-39.79**) PGR (-**11.29**) PTGS2 (**-36.04**, -**32.79**) TNFRSF10B (-2.25)	8.72	3.67	77
PACLITAXEL *(Epitaxol, LipoPac, Onxol, Paxceed, Paxene, Taxol, Taxol A, Vascular Wrap, Xorane)*	129	ABCB1 ABCC1 ABCC2 AIFM1 AKR1C2 AKT1 AKT2 AKT3 AMFR APAF1 ARR3 ASPM AURKA BAD BAX BBS4 BCL2 BCL2L1 BECN1 BID BIRC2 BIRC3 BIRC5 BMP7 BTG3 C7ORF23 CA12 CALCA CASP3 CASP7 CASP8 CASP9 CAV1 CCNB1 CCND1 CD46 CD47 CDKN1A CFLAR CLU CTCF CTNND2 CTSL1 CXCR4 CXCR6 CXCR7 CYCS CYP19A1 CYP2C8 CYP3A4 DIABLO E2F3 EGFR ERBB4 FAS FASLG FDPS FTH1 FTL FURIN FXYD3 GADD45A GAMT GFRA1 GSTM1 GSTM5 GSTP1 GSTT1 HIF1A ICAM1 IFI30 IGFBP4 ITGB5 JMJD2B JUN KIAA1467 KIF3A KRT13 MAPK1 MAPK14 MAPK3 MAPK8 MAPK9 MAPT	65 (31+34) (50.4%)	ABCC1 (**7.70**) ABCC2 (4.39, **5.45**) AKT2 (2.40, 3.07, 2.01) ASPM (**5.55**, **8.12**) AURKA (4.00) BECN1 (2.18) CA12 (**21.62**, **17.07**, **11.24**, **25.25**) CASP3 (2.14) CASP8 (**8.85**, 2.67) CCNB1 (3.17) CTNND2 (3.12, 2.44) CYP19A1 (2.64) E2F3 (2.71) FTH1 (2.42, 2.32, 2.35) FTL (3.51, 4.41, 3.40) GSTP1 (3.00) MED1 (2.44) MED13L (**6.09**) MELK (**6.04**) NAT1 (2.39) NCOA3 (3.29, 4.36, 3.16) NKAIN1 (**22.33**) NR1I2 (3.23) PARP1 (2.68) PRC1 (3.44) RRM2 (3.30, 3.47) S100P (**41.69**) TOP2A (**5.88**) TYMS (3.69) VEGFA (2.60) ZNF552 (**8.76**, 2.45) ABCB1 (-3.59) AKT3 (-3.90, -3.96) AMFR (**-5.37**) BIRC3 (-2.84) BMP7 (**-16.37**, -4.33) BTG3 (**-7.01**) CAV1 (**-22.26**, -**24.68**) CCND1 (-2.52) CD47 (**-6.41**, **-16.99**) CDKN1A (-	6.54	6.14	147

		MCL1 MDM2 MED1 MED13L MELK METRN MMP9 MT1E MT2A MYC NAT1 NCOA3 NFKB1 NFKBIA NKAIN1 NR1I2 PARP1 PDPK1 PMP22 POR PRC1 PTEN PTGS2 RAMP1 RB1 RBL2 RELA RFX5 RPL23A RPLP1 RRM2 RTKN S100P SCUBE2 TFF1 THNSL2 TNFRSF10B TOP2A TP53 TUBB TUBB1 TYMS VEGFA XIAP ZNF552		7.85, -4.44) CXCR4 (-2.72) CXCR6 (-2.50) CYP3A4 (-7.84) EGFR (-12.64) ERBB4 (-3.94, -3.33) FAS (-5.93) FURIN (-2.72) FXYD3 (-2.65) GAMT (-3.39, -2.43) GFRA1 (-5.66) GSTM5 (-3.70, -6.54) ICAM1 (-8.24) IGFBP4 (-2.66) JUN (-2.62) MAPK8 (-2.06) MCL1 (-3.34) MMP9 (-10.90) MT1E (-15.67) MT2A (-8.59, -9.15) NFKBIA (-4.00) PMP22 (-6.22) PTEN (-2.30, -2.56) PTGS2 (-36.04, -32.79) TNFRSF10B (-2.25)			
DNA >> Spindle poisons / Mitotic inhibitors >> Vinca Alkaloids							
VINBLASTINE *(Nincaluicolflastine, Rozevin, Velban, Velbe, Vinblastin, Vinblastina, Vinblastine Sulfate, Vinblastinum, Vincaleucoblastin, Vincaleucoblastine, Vincaleukoblastine, Vincoblastine)*	13	ABCB1 ABCC1 ABCC2 CASP2 IKBKB JUN MAPK8 MAPK9 NFATC4 NFKBIA TNFRSF10B TP53 TUBB2A	9 (4+5) (69.2%)	ABCC1 (7.70) ABCC2 (4.39, 5.45) CASP2 (2.27) IKBKB (2.08, 2.59, 3.48) ABCB1 (-3.59) JUN (-2.62) MAPK8 (-2.06) NFKBIA (-4.00) TNFRSF10B (-2.25)	3.57	4.40	135
VINCRISTINE *(Marqibo, Onco TCS, Oncovin, Vincasar, Vincasar PFS, Vincrex, Vincristine Sulfate PFS, Vinkristin)*	70	ABCB1 ABCC1 ABCC2 AKT1 APAF1 APOA1 ASPM AURKA BAD BAX BCL2 CASP1 CASP10 CASP2 CASP3 CASP4 CASP5 CASP6 CASP7 CASP8 CASP9 CAT CEBPB CES1 CFTR CYC1 E2F1 EGFR FADD FAIM2 GAPDH GSTM1 GULP1 HRAS IAPP IGF1 IGF1R IL6 LMNA LMNB1 MAP2K4 MAP3K7 MAPK1 MDM2 MEF2A MGMT MYC NFKB1 P11 PCAF PRC1 PRNP PTK2B PTPN13 RARB RBM17 RELA ROS1 RUNX3 SLC2A1 SOS1 STAT1 STAT2 STAT3 TNF TP53 TUBB2A TYMS VDR XBP1	31 (16+15) (44.3%)	ABCC1 (7.70) ABCC2 (4.39, 5.45) ASPM (5.55, 8.12) AURKA (4.00) CASP2 (2.27) CASP3 (2.14) CASP8 (8.85, 2.67) CES1 (13.90) E2F1 (2.45) GULP1 (21.16, 15.15) MAP3K7 (3.78) PRC1 (3.44) RARB (2.96) SLC2A1 (22.83) TYMS (3.69) XBP1 (2.26) ABCB1 (-3.59) CASP1 (-4.93) CASP4 (-2.29, -2.55) CASP5 (-2.47) CAT (-3.31) EGFR (-12.64) HRAS (-2.10) IGF1 (-5.82, -4.31, -5.16, -5.25) IL6 (-39.79) LMNA (-2.45) PCAF (-4.52, -6.85) PRNP (-3.95) PTPN13 (-3.49) ROS1 (-5.49) VDR (-6.07)	6.79	6.69	152
VINFLUNINE	1	TUBB1	-	-	-	-	-
VINDESINE *(DAVA, Eldesine, Eldisine)*	1	TUBB1	-	-	-	-	-
VINORELBINE *(Navelbine, Navelbine Base)*	3	RBM17 SLC29A1 TUBB2A	-	-	-	-	-
DNA >> Spindle poisons / Mitotic inhibitors >> Other							
EPOTHILONES	17	BAX BCL2 BCL2L1 BIRC3 MCL1 TUBA1 TUBA2	3 (0+3)	BIRC3 (-2.84) MCL1 (-3.34) TUBB4 (-4.61)	3.66	0.00	0

		TUBA3 TUBA6 TUBA8 TUBB1 TUBB2A TUBB2C TUBB3 TUBB4 TUBB4Q XIAP	(17.6%)				
DNA >> Cytotoxic / Antitumor antibiotics							
DNA >> Cytotoxic / Antitumor antibiotics >> Anthracyclines							
DOXORUBICIN *(ADM, Adriablastin, Adriamycin, Adriamycin PFS, Adriamycin RDF, Adriamycin Semiquinone, Adriblastin, Adriblastina, Caelyx, DM2, Doxil, Doxo, Myocet, RDF Rubex, Resmycin, Rubex)*	444	ABCB1 ABCB1A ABCB4 ABCB5 ABCC1 ABCC3 ABCG2 ADAM19 ADAMTS5 AHCY AIFM1 AKR1A1 AKR1C2 AKR1C3 AKT1 AKT2 AKT3 ALB AMFR ANGPT1 AP4E1 APAF1 API5 APOA1 APP ARHGEF1 ARHGEF17 ARL6IP5 ATF4 ATM ATP6V0E1 AZGP1 B4GALT1 BACH1 BAD BAG1 BAK1 BAX BBS12 BBS4 BCL2 BCL2A1 BCL2L1 BCL2L11 BCL2L12 BECN1 BID BIK BIRC2 BIRC3 BIRC5 BIRC6 BIRC7 BIRC8 BTG1 BTG2 BTG3 BUB1B BUB3 C21ORF87 C5ORF13 C7ORF23 CA12 CABC1 CALD1 CAPN6 CASP1 CASP10 CASP2 CASP3 CASP4 CASP5 CASP6 CASP7 CASP8 CASP9 CBR1 CCL2 CCNA2 CCNB1 CCND1 CCND2 CCNE1 CD44 CDC2 CDC25C CDK10 CDK2 CDKN1A CDKN1B CDKN2A CEBPB CENPA CES1 CFLAR CFTR CHEK1 CHEK2 CHUK CISH CLDN1 CLIP1 CLPTM1 CLU COL18A1 COX2 CPT1A CREBBP CRISP2 CRYAA CRYAB CSPG4 CTGF CTNNBIP1 CTNND2 CTSB CTSD CTSG CXCL6 CYC1 CYCS CYP1A1 CYP27B1 CYP2B6 DDEF1 DDIT3 DEK DGKI DHPS DIABLO DKK2 DNAJA1 DNMT1 DPP4 DSPP DTYMK E2F1 E2F3 ECHS1 ECOP EDN1 EFNB3 EGF EGFR EGR1 EHMT2 EIF1AX EIF2A EIF4EBP1 EP300 EPHA2 ERAP1 ERBB2 ERBB3 ERBB4 ESR1 ESR2 ETV6 F3 F7 FADD FAIM2 FAS FASLG FCGR3A FDFT1	198 (97÷101) (44.6%)	ABCC1 (7.70) ABCC3 (8.66) AKR1C3 (3.54) AKT2 (2.40, 3.07, 2.01) ATM (2.79) BCL2L11 (3.13) BCL2L12 (4.27) BECN1 (2.18) BIK (3.06) BUB1B (12.77) CA12 (21.62, 17.07, 11.24, 25.25) CABC1 (3.10) CASP2 (2.27) CASP3 (2.14) CASP8 (8.85, 2.67) CBR1 (6.01) CCNA2 (5.27) CCNB1 (3.17) CCNE1 (5.62) CDC2 (2.92) CDC25C (8.00) CDKN2A (16.18, 9.22) CENPA (3.86) CES1 (13.90) CHEK1 (4.69) CHEK2 (2.55) CLIP1 (2.08) CPT1A (2.21) CREBBP (2.11, 2.52) CTNND2 (3.12, 2.44) CYP2B6 (10.92, 3.17) DEK (2.71) DNMT1 (2.20) DTYMK (2.69, 2.60) E2F1 (2.45) E2F3 (2.71) EGF (16.93) EHMT2 (4.08, 2.31, 2.75) ERBB3 (2.54, 3.81, 4.45) ETV6 (2.09) FOXO3 (2.21) FTL (3.51, 4.41, 3.40) G6PD (5.12) GSTA1 (16.89) GSTP1 (3.00) GULP1 (21.16, 15.15) HCRTR1 (2.33) HDAC1 (6.44) HFE (3.86, 3.08) HSAJ2425 (2.32) HSPA9 (2.34) HSPB1 (4.23, 3.70, 3.27) HSPD1 (3.65, 5.01) IKBKB (2.08, 2.59, 3.48) ILF3 (3.78) KCNH2 (4.05) KRT18 (3.49, 2.64, 3.00, 2.48) LY75 (4.92) MAD2L1 (3.87) MAP3K7 (3.78) MDK (17.02) MED13L (6.09) MELK (6.04) MLL (2.05, 2.04) MME (3.38, 4.93) MRPS18A (2.34) NKAIN1 (22.33) NOLC1 (2.54, 2.56) OXTR (4.19) PARP1 (2.68) PDCD5 (3.33) PMAIP1 (12.40) PRKDC (2.47, 2.93) PROC (27.80) PSMB7 (2.15) PTK2 (2.54) PTPRH (42.24) RAD51 (4.60) RARB (2.96) RHOG (3.15) RRM2 (3.30, 3.47) SMAD3 (4.63, 3.78) SOD1 (2.68, 2.37) SSH3 (3.00, 3.18) ST14 (2.22) STK39 (6.44, 6.78)	5.97	5.64	123

FHL2 FKBP5 FKBP8 FN1 FOLR1 FOS FOXJ1 FOXO1 FOXO3 FSHB FTL FTMT FUT4 G6PD GADD45G GAMT GAPDH GATA1 GDF15 GFI1B GFRA1 GLO1 GNRHR GP9 GPX1 GSK3B GSTA1 GSTA4 GSTP1 GTF3C1 GULP1 H2AFX HBG2 HCRTR1 HDAC1 HFE HGF HIF1A HIST1H2BC HLA-DQB1 HLA-DRB4 HMP19 HNRNPM HRAS HS3ST1 HSAJ2425 HSP90AA1 HSPA4 HSPA5 HSPA8 HSPA9 HSPB1 HSPD1 HTRA1 HUWE1 IAPP IFNA1 IGF1 IGF1R IGFBP4 IKBKB IKBKG IL6 IL8 ILF3 IRS1 JAG2 JMJD2B JUN KCNH2 KCNJ13 KCNJ16 KDSR KHSRP KIAA1467 KIF3A KLF2 KRT18 LGALS3 LIG4 LIMA1 LMNA LMNB1 LY75 MAD2L1 MAP2K1 MAP2K2 MAP2K3 MAP2K4 MAP2K6 MAP3K7 MAP3K8 MAPK1 MAPK14 MAPK3 MAPK8 MAPK9 MAPT MCL1 MDH2 MDK MDM2 MED13L MEF2A MELK METAP2 METRN MFGE8 MGMT MLL MLLT3 MME MMP1 MMP2 MRPS18A MSH6 MT1G MT1L MT2A MTR MTSS1 MVP MYC NAIP NBN NDUFB7 NFKB1 NFKB2 NFKBIA NID1 NKAIN1 NMBR NOLC1 NOS2 NR4A1 OR12D2 OR2F1 OXTR P11 P2RX2 P2RY6 PARP1 PAX6 PCAF PCNA PDCD5 PDPK1 PITX1 PLAU PLOD1 PLOD3 PMAIP1 POLD4 POMT2 POR PPARD PPT2 PRKACA PRKCA PRKCD PRKDC PRL PRNP PROC PROCR PSMA1 PSMA2 PSMA3 PSMA4 PSMA5 PSMA6 PSMA7 PSMB2 PSMB3 PSMB7 PTEN PTGS2 PTK2 PTK2B PTPN13 PTPRH RAD51 RALBP1 RAMP1 RARB RB1 RBL1 RBL2 RBM17 TCF3 (4.52, 3.83) TERT (3.67) TNFRSF25 (**7.01**) TOP2A (**5.88**) TRIM28 (2.33) TUBA4A (2.16) TYMS (3.69) UQCRH (3.18, 3.28) VEGFA (2.60) ZMYM2 (3.03, 4.70) ZNF552 (**8.76**, 2.45) ABCB1 (-3.59) ADAMTS5 (-3.42) AKT3 (-3.90, -3.96) AMFR (**-5.37**) ANGPT1 (**-13.77, -19.66**) APP (-3.45) ARL6IP5 (-3.81, -3.50) ATP6V0E1 (-4.06) BCL2A1 (**-18.59**, -2.78) BIRC3 (-2.84) BTG2 (-3.68) BTG3 (**-7.01**) CAPN6 (-3.15) CASP1 (-4.93) CASP4 (-2.29, -2.55) CASP5 (-2.47) CCL2 (**-8.86**) CCND1 (-2.52) CCND2 (**-7.50**, -3.63, **-13.98**) CD44 (**-5.46**) CDKN1A (**-7.85**, -4.44) CISH (**-6.49, -6.90**) CRISP2 (-3.03) CRYAB (-3.91) CSPG4 (-4.23) CTGF (-2.88) CTNNBIP1 (**-7.17**) CTSB (-2.39) CTSD (-2.66) CTSG (**-8.64**) CXCL6 (**-7.14**) DKK2 (-2.84, **-19.13**) DPP4 (**-21.02**) EDN1 (-4.13) EFNB3 (-4.49) EGFR (**-12.64**) EGR1 (**-6.04**) ERBB4 (-3.94, -3.33) F3 (-3.63) FAS (**-5.93**) FCGR3A (-2.85) FN1 (-3.36, -3.49, -4.91) FOXJ1 (**-5.38**, -2.05) FOXO1 (-2.47, -3.13) GAMT (-3.39, -2.43) GFRA1 (**-5.66**) GP9 (-2.54) HGF (-2.73, -**6.54**) HLA-DQB1 (-3.19, -3.83) HLA-DRB4 (-4.14) HRAS (-2.10) HSPA5 (-2.00) IGF1 (**-5.82**, -4.31, **-5.16**, -**5.25**) IGFBP4 (-2.66) IL6 (**-39.79**) IL8 (**-16.97**) IRS1 (**-13.62**) JUN (-2.62) KCNJ16 (**-14.12**) KDSR (-2.45) KLF2 (-3.43, -2.31) LMNA (-2.45) MAP2K3 (-3.18, -3.56) MAP2K6 (-4.53) MAPK8 (-2.06) MCL1 (-3.34) MMP1 (**-58.24**) MMP2 (-4.48) MT1G (**-11.42**, **-6.38**) MT1L (**-11.08**) MT2A (**-8.59**, **-9.15**) MTSS1 (-2.60) MVP (-2.25) NFKBIA (-4.00) NR4A1 (**-5.37**) PCAF (-4.52, **-6.85**) PLOD1 (-2.05) PRKCA (-3.26) PRNP (-3.95) PROCR (-2.63) PTEN (-2.30, -2.56) PTGS2 (**-36.04**, -**32.79**) PTPN13 (-3.49) RELB (-2.34) ROS1 (**-5.49**)

		RBPMS REL RELA RELB RGS13 RHCG ROS1 RRM2 RUNX1 RUNX3 SAT SCNN1G SCUBE2 SEC22B SERPINE1 SERPINH1 SKP2 SLC22A16 SLC22A5 SLC29A1 SLC38A2 SLC5A5 SLC9A1 SLIT3 SMAD2 SMAD3 SMAD4 SMAD7 SMC1A SOD1 SOD2 SOS1 SP1 SPARC SPHK2 SRM SSH3 ST14 STAT1 STAT2 STAT3 STK39 STMN1 STX3 TAGLN TCF3 TERT TFF1 TGFB1 TGM2 THBD THBS1 THNSL2 TIA1 TLX3 TMSB4X TNF TNFRSF10A TNFRSF10B TNFRSF1A TNFRSF1B TNFRSF25 TNFSF10 TOMM20 TOP2A TOP2B TP53 TP73 TRAP1 TRIM23 TRIM28 TRIM34 TRP53 TTPA TUBA4A TUBB TUBB4 TYMS UGCG UGT2B4 UPP1 UQCRH VDR VEGFA XIAP ZFP36L2 ZMYM2 ZNF22 ZNF552		SERPINE1 (-2.71) SLC22A16 (**-13.33**) SLIT3 (-4.84) SMAD2 (-2.15, -3.51) SMAD7 (-2.99) TGM2 (**-6.85**, -4.62) THBD (**-5.54**) THBS1 (-2.30, -3.06) TMSB4X (-2.05) TNFRSF10B (-2.25) TNFSF10 (**-7.51**) TRIM34 (-3.03) TUBB4 (-4.81) UPP1 (-3.24, -2.71, -2.28) VDR (-**6.07**) ZFP36L2 (-2.99)			
EPIRUBICIN *(Ellence, Epi-Dx, Epiadriamycin, Epidoxorubicin, Epirubicina, Epirubicine, Epirubicinum, IMI 28, Pharmorubicin Pfs, Pidorubicina, Pidorubicine, Pidorubicinum, Ridorubicin)*	7	ABCB1 ABCC1 ABCG2 BIRC5 CASP3 CHD1 TOP2A	4 **(3+1)** (57.1%)	ABCC1 (**7.70**) CASP3 (2.14) TOP2A (**5.88**) ABCB1 (-3.59)	4.83	5.24	**224**
DNA >> Cytotoxic / Antitumor antibiotics >> Anthracenediones							
MITOXANTRONE *(Mitox, Novantron, Novantrone)*	25	ABCB1 ABCG2 AMOTL1 BIRC2 CASC3 CASP2 ELAVL4 ELOVL5 EPB41L2 FAM130A1 IRX1 LAMA2 LEMD2 MAFF MDM2 PACRGL RARB RASA1 RBM17 RRAGD SFRP4 SYTL2 TMEM99 TOP2A XIAP	11 **(6+5)** (44.0%)	CASP2 (2.27) ELAVL4 (**8.24**, **12.95**) RARB (2.96) SYTL2 (**10.42**, **7.94**) TMEM99 (2.94) TOP2A (**5.88**) ABCB1 (-3.59) AMOTL1 (-**9.67**, **-12.72**) IRX1 (-2.23) LAMA2 (**-5.62**) MAFF (-3.57)	5.46	5.64	**135**
DNA >> Cytotoxic / Antitumor antibiotics >> Streptomyces							
BLEOMYCIN *(Bleo, Bleonexane)*	7	BIRC2 BLMH CAT LIG1 LIG3 SOCS1 XRCC1	4 **(2+2)** (57.1%)	LIG1 (3.03) LIG3 (2.27) CAT (-3.31) SOCS1 (**-5.85**, -**5.20**)	3.53	2.65	**75**
MITOMYCIN *(Ametycin, Ametycine,*	25	ALDH3A1 APP ATF4 BMP4 CCNB1 CD59	13 **(8+5)**	ALDH3A1 (**12.05**) BMP4 (3.33) CCNB1 (3.17) GSTP1	5.50	6.14	**196**

Mit-C, Mito-C, Mitocin-C, Mitomycin C, Mitomycin-C, Mitomycinum, Mitomycinum C, Mitomycyna C, Mitozytrex, Muamycin, Mutamycin, Mytomycin, Mytozytrex)		EGR1 EPHA2 GSTP1 HLA-C LIG1 MAPRE1 MGMT MMP14 NFYA NQO1 POR PRNP RB1 RBBP7 RFC4 RPS3A RUNX3 SUB1 TP53	(52.0%)	(3.00) LIG1 (3.03) NFYA (2.84) NQO1 (**18.75**) RFC4 (2.95) APP (-3.45) CD59 (**-8.71**, -4.89, -4.77, **-7.00**) EGR1 (-**6.04**) PRNP (-3.95) RPS3A (-2.73, -2.31, -2.81, -2.51, -2.45, -2.68)			
DNA >> Cytotoxic / Antitumor antibiotics >> Other							
HYDROXYUREA *(Biosupressin, Droxia, Hidrix, Hydrea, Hydreia, Hydura, Hydurea, Litaler, Litalir, Onco-Carbide, Oxyurea, Ureaphil)*	21	BAX C13ORF34 CASP3 CCNA2 CCNB1 CCND1 CCND2 CCND3 CCNE1 CCNG1 CDCA8 CDKN1A CKS2 EDN3 FAS KPNA2 PRC1 PSRC1 RRM1 TP53 UBE2C	13 (8+5) (61.9%)	CASP3 (2.14) CCNA2 (**5.27**) CCNB1 (3.17) CCNE1 (**5.62**) CDCA8 (2.55) KPNA2 (2.49) PRC1 (3.44) UBE2C (**9.47**) CCND1 (-2.52) CCND2 (-**7.50**, -3.63, **-13.98**) CCNG1 (-3.23) CDKN1A (**-7.85**, -4.44) FAS (**-5.93**)	4.64	4.27	162
DNA >> Topoisomerase inhibitors							
DNA >> Topoisomerase inhibitors >> Camptotheca							
CAMPTOTHECIN	47	ABCB1 AGRN ALB ANXA4 BAX BCL2 BIRC5 CAB39 CASP2 CASP3 CCNB1 CDK2 CDKN1A CEACAM1 CEBPZ CTSB EI24 EPM2AIP1 FDXR GSTP1 HNRNPC IL1B IL8 JUN MAP2K3 MAP3K5 MAPK9 MDM2 NCK2 PARP1 PLK3 PPP1R1B PRC1 RB1 RBL1 RBL2 SDC1 TAP1 TAX1BP3 THBS1 TNFSF9 TOP1 TP53 TP53I3 TP53TG1 VEGFA XIAP	20 (8+12) (42.6%)	CASP2 (2.27) CASP3 (2.14) CCNB1 (3.17) CEACAM1 (2.43, 2.23) GSTP1 (3.00) PARP1 (2.68) PRC1 (3.44) VEGFA (2.60) ABCB1 (-3.59) CDKN1A (-**7.85**, -4.44) CTSB (-2.39) IL1B (**-12.47**) IL8 (**-16.97**) JUN (-2.62) MAP2K3 (-3.18, -3.56) PLK3 (-2.94) PPP1R1B (**-5.77**) SDC1 (-2.52) THBS1 (-2.30, -3.06) TNFSF9 (-2.43)	4.28	2.70	46
TOPOTECAN *(Hycamptamine, Hycamptin, Hycamtin)*	7	ABCG2 ARNT H2AFX HIF1A TOP1 TOP1MT VEGFA	1 (1+0) (14.3%)	VEGFA (2.60)	2.60	2.60	37
IRINOTECAN *(CPO, Camptosar, IRINOTECAN, CPT-11)*	204	ABCB1 ABCC1 ABCC2 ABCC4 ABCG2 ADD3 AKAP10 ALAS2 ALDH1A1 ANGPTL2 ANXA6 APC ARAF AREG ARHGAP5 ARID4A ATF3 ATG10 ATP5O AURKB BCL7A BCL9 BIRC5 BMP8A BOLL BUB1 CASP4 CCNA2 CCNB2 CCNF CCR1 CCR6 CD70 CD80 CDC2 CDC25B CDC2L5 CDK5R2 CDKN1A CDKN3 CENPE CENPF CES1 CES2 CES3 CHD1 COL6A1 COMMD6 CREBBP CYP1A2 CYP2A6 CYP2B6 CYP2C19 CYP2C8 CYP2C9 CYP2D6 CYP2E1	104 (53+51) (51.0%)	ABCC1 (**7.70**) ABCC2 (4.39, **5.45**) ABCC4 (2.34) AURKB (2.61) BCL9 (**5.39**) BUB1 (2.75) CCNA2 (**5.27**) CCNB2 (4.19) CCNF (2.52) CCR6 (2.28) CDC2 (2.92) CDKN3 (**5.50**) CENPF (**7.39**, **8.14**) CES1 (**13.90**) CES3 (**10.19**) CREBBP (2.11, 2.52) CYP2B6 (**10.92**, 3.17) CYP2C9 (3.97) CYP2D6 (3.52, 3.15) DENND4A (2.86, 2.30) DYRK2 (3.69, 2.90, 2.19, 2.26) EML2 (4.55) ETV6 (2.09) GATA3 (**6.10**) GOLGA8A (**8.56**) MAD2L1 (3.87) MCM4 (4.63) MX2 (2.64) NEK2 (**23.93**, **26.08**) PLEKHH3 (2.59) PLK1 (2.97, 2.70) PMAIP1 (**12.40**)	7.59	6.54	169

		CYP3A4 CYP3A5 DCLRE1A DDB2 DEFA1 DENND4A DMWD DNMT2 DPYD DRD5 DRG1 DUSP2 DYRK1A DYRK2 EBI2 EGFR EGR1 EML2 EP300 ERBB4 ETS2 ETV6 F8 FANCG FASLG FGF2 FN1 FOS FOSB GATA3 GDF15 GOLGA8A GPR109B GPX3 H2AFX HBEGF HIST1H2AC HMMR HRG HSPA4L ID2 IGF1 IL1B IL8 ITGAV ITGAX ITGB3BP JUN KLF9 KRT5 LGALS8 LTF MAD2L1 MAL MALL MAP3K5 MCF2L MCM4 MDM2 MEF2B MGMT MMP9 MPO MSH2 MTHFS MX2 NCK1 NCOA1 NEK2 NID1 OSMR PCDHGC3 PDE4B PLEKHH3 PLK1 PLK2 PLK3 PMAIP1 POR PPP3CB PRKCA PRKCB PRKCD PRKCI PROM1 PSG9 PTGES PTPN13 PTPN22 PTPRD PTPRN RAC3 RAD23B RB1 RBBP5 RBL1 RELA RFC3 RGS1 RUNX1 SDC4 SERPINE2 SESN2 SFN SGK SLC16A4 SLC9A3R2 SNAG1 SPIB STK38 STK4 SULT1A4 TAF2 TBCC TGFA THY1 TMEM41B TMSB4X TNFAIP6 TOB1 TOB2 TOP1 TOP1MT TOP2A TOPORS TP53 TPX2 TRADD TRAF1 TTK TYMP TYMS UBE2C UCHL5 UGT1A1 UGT1A10 UGT1A6 UGT1A7 UGT1A8 UGT1A9 XRCC4 YES1 ZFP36L2 ZFX ZNF32 ZNF582 ZRSR2		PROM1 (4.29) PTGES (**9.53**) RAC3 (2.23) RAD23B (2.57, 2.55, 4.15) RBBP5 (2.08, 2.99) RFC3 (4.94, 4.23) SPIB (4.00) STK38 (4.45, 4.62) STK4 (2.65) TAF2 (2.17, 2.48) TBCC (2.21, 2.21) TOB1 (2.20) TOP2A (**5.88**) TPX2 (**5.74**) TTK (**20.36**) TYMS (3.69) UBE2C (**9.47**) UGT1A6 (**35.81**, **53.16**) UGT1A8 (**30.25**) YES1 (2.33) ZFX (2.61) ABCB1 (-3.59) ALAS2 (**-5.81**, **-8.89**) ANGPTL2 (-2.89, -3.89) ANXA6 (-3.31) AREG (**-119.30**) CASP4 (-2.29, -2.55) CCR1 (-2.53, -4.69) CDKN1A (**-7.85**, -4.44) COL6A1 (-3.54) CYP3A4 (**-7.84**) CYP3A5 (**-34.94**) DPYD (-2.82, -4.07, -4.30) EBI2 (**-5.77**) EGFR (**-12.64**) EGR1 (**-6.04**) ERBB4 (-3.94, -3.33) ETS2 (-3.94, **-5.62**, **-5.40**) F8 (-3.51, -2.90) FGF2 (**-9.80**) FN1 (-3.36, -3.49, -4.91) GPX3 (-4.85) HBEGF (**-5.28**, **-5.37**) HSPA4L (-2.34) ID2 (-2.96, -3.38) IGF1 (**-5.82**, -4.31, **-5.16**, **-5.25**) IL1B (**-12.47**) IL8 (**-16.97**) ITGAX (-2.53, -2.13) ITGB3BP (-2.46) JUN (-2.62) KLF9 (-4.25) KRT5 (**-12.89**) LGALS8 (-2.28) LTF (**-20.86**) MAL (**-7.99**) MALL (-2.75, -2.73) MMP9 (**-10.90**) OSMR (**-5.11**, -3.52) PDE4B (**-5.96**) PLK3 (-2.94) PPP3CB (-2.30) PRKCA (-3.26) PTPN13 (-3.49) PTPRD (**-6.35**) SESN2 (-2.98) SLC16A4 (**-7.88**) TMEM41B (-2.16) TMSB4X (-2.05) TNFAIP6 (**-22.06**) TYMP (-3.83, **-5.95**) ZFP36L2 (-2.99)			
DNA >> Topoisomerase Inhibitors >> Podophyllum							
ETOPOSIDE *(Eposin, Etopophos, Lastet, Toposar, Vepesid, Vepesid J, Zuyeyidal)*	102	ABCB1 ABCC1 ABCC2 ABCC3 AGRN AKT1 ALDH3A1 ANXA4 AREG ATF4 BAK1 BCL2 BCL2L1 BCL2L2 BIK BIRC2 BIRC3 BIRC5 BRCA1 BTC CAB39 CALCA CASP2 CASP3 CASP7 CASP9 CCNA2 CD44 CDK2 CDKN1A CDKN1B CEACAM1 CEBPZ CFLAR	53 (27+26) (52.0%)	ABCC1 (**7.70**) ABCC2 (4.39, **5.45**) ABCC3 (**8.66**) ALDH3A1 (**12.05**) BIK (3.06) BRCA1 (3.05) CASP2 (2.27) CASP3 (2.14) CCNA2 (**5.27**) CEACAM1 (2.43, 2.23) CYP2B6 (**10.92**, 3.17) CYP2C9 (3.97) EGF (**16.93**) ERBB3 (2.54, 3.81, 4.45) ETV6 (2.09) FOXO3 (2.21) GSTP1 (3.00) PARP1 (2.68)	8.65	6.31	167

		CYP27B1 CYP2A6 CYP2B6 CYP2C8 CYP2C9 CYP3A4 CYP3A5 DDIT3 EGF EGFR EI24 EPM2AIP1 ERBB2 ERBB3 ERBB4 EREG ETV6 FDXR FOXO1 FOXO3 GSTM1 GSTP1 HBEGF HSPA5 MAP2K3 MAP2K7 MAP3K5 MCL1 MDM2 NCK2 NFKBIA PARP1 PLK3 PRC1 PRNP PTEN RAD52 RAD54L RBM17 RUNX1 RUNX3 SDC1 TAP1 TAX1BP3 TGFA TMSB4X TNFRSF10A TNFRSF10B TNFSF10 TNFSF9 TOP2A TOP2B TP53 TP53I3 TP53TG1 TP73 TYMS UBE2C UGT1A1 UGT1A3 UGT1A8 VDR WRN XAF1 XIAP XRCC2 XRCC3 XRCC4		PRC1 (3.44) RAD52 (7.35) RAD54L (8.38) TOP2A (5.88) TYMS (3.69) UBE2C (9.47) UGT1A8 (30.25) WRN (3.29) XRCC2 (5.72) ABCB1 (-3.59) AREG (-119.30) BIRC3 (-2.84) BTC (-3.47, -22.42) CD44 (-5.46) CDKN1A (-7.85, -4.44) CYP3A4 (-7.84) CYP3A5 (-34.94) EGFR (-12.64) ERBB4 (-3.94, -3.33) EREG (-25.83) FOXO1 (-2.47, -3.13) HBEGF (-5.28, -5.37) HSPA5 (-2.00) MAP2K3 (-3.18, -3.56) MCL1 (-3.34) NFKBIA (-4.00) PLK3 (-2.94) PRNP (-3.95) PTEN (-2.30, -2.56) SDC1 (-2.52) TMSB4X (-2.05) TNFRSF10B (-2.25) TNFSF10 (-7.51) TNFSF9 (-2.43) VDR (-6.07)			
DNA >> Other							
DNA >> Other >> All							
BEXAROTENE *(Targret, Targretin, Targretin-gel, Targretyn, Targrexin)*	68	ADD3 ADRB2 AKR1C1 AKR1C3 AMOTL2 ARL6IP5 ASNS BNIP2 C10ORF10 C10ORF116 CEBPG COX2 CTH CTSH CYCS CYP26A1 CYR61 DDIT4 DHRS3 DKK1 DUSP1 DUSP5 EGR3 EIF1 EPHA2 GARS GPM6B HERPUD1 ID1 IER2 IGFBP6 IL15 ITGB6 ITM2A ITPR1 KLF10 KRT15 KRT17 LOXL2 MAF MAFF MLLT11 MMP1 MTHFD2 ODC1 PER2 PLAT PLAUR PLOD2 PNO1 PNRC1 RARB RB1 RXRB S100A9 SCD SFRS2 SIAH2 SLC7A1 SLC7A5 SMAD5 SPARC TGM2 TM4SF1 TSC22D3 UAP1 VAMP8 XBP1	39 (12+27) (57.4%)	AKR1C1 (31.20, 14.60, 19.24, 4.57) AKR1C3 (3.54) CYP26A1 (99.46) KRT15 (2.99) PER2 (3.13) PNO1 (3.43) RARB (2.96) RXRB (2.45) SLC7A1 (3.17) SLC7A5 (2.98) UAP1 (2.13) XBP1 (2.26) ADRB2 (-10.39) AMOTL2 (-2.31) ARL6IP5 (-3.81, -3.50) ASNS (-3.65) CTH (-4.18) CTSH (-3.47) CYR61 (-3.69, -2.81, -3.06) DDIT4 (-2.17) DKK1 (-16.44) DUSP1 (-5.64) GPM6B (-11.99) ID1 (-2.07) IGFBP6 (-3.88) IL15 (-2.46) ITGB6 (-21.40) ITM2A (-3.63) ITPR1 (-2.44) KLF10 (-2.47) KRT17 (-5.21) MAF (-2.53, -3.02) MAFF (-3.57) MMP1 (-58.24) PLAUR (-5.48) PLOD2 (-2.46) S100A9 (-2.26) SCD (-8.09, -15.46, -10.15) TGM2 (-6.85, -4.62)	8.93	12.16	214
Cellular							
Cellular >> CI monoclonal antibodies							
Cellular >> CI monoclonal antibodies >> Receptor tyrosine kinase							
CETUXIMAB *(Erbitux)*	1	EGFR	1 (0+1) (100.0%)	EGFR (-12.64)	12.64	0.00	0
TRASTUZUMAB	2	EGFR ERBB2	1	EGFR (-12.64)	12.64	0.00	0

(Herceptin)			(0+1) (50.0%)				
Cellular >> CI monoclonal antibodies >> Anti-CD20							
RITUXIMAB *(Rituxan)*	1	MS4A1	1 (1+0) (100.0%)	MS4A1 (7.61)	7.61	7.61	761
TOSITUMOMAB *(Bexxar)*	1	MS4A1	1 (1+0) (100.0%)	MS4A1 (7.61)	7.61	7.61	761
Cellular >> CI monoclonal antibodies >> Other							
ALEMTUZUMAB *(Campath, MabCampath)*	1	CD52	1 (0+1) (100.0%)	CD52 (-5.80)	5.80	0.00	0
BEVACIZUMAB *(Avastin)*	1	VEGFA	1 (1+0) (100.0%)	VEGFA (2.60)	2.60	2.60	259
EDRECOLOMAB *(Panorex)*	1	TACSTD1	-	-	-	-	-
GEMTUZUMAB *(Mylotarg)*	1	CD33	1 (0+1) (100.0%)	CD33 (-3.02, -3.56)	3.29	0.00	0
Cellular >> Tyrosine kinase inhibitors							
Cellular >> Tyrosine kinase inhibitors >> All							
AXITINIB	6	FLT1 FLT4 KDR KIT PDGFRA PDGFRB	5 (0+5) (83.3%)	FLT1 (-2.68) FLT4 (-2.80) KDR (-2.85, -2.51) KIT (-38.04) PDGFRA (-4.21, -4.58)	10.12	0.00	0
BOSUTINIB	3	ABL1 BCR SRC	3 (2+1) (100.0%)	ABL1 (3.58) SRC (2.09) BCR (-2.40)	2.69	2.84	189
CEDIRANIB *(Recentin)*	2	FLT1 FLT4	2 (0+2) (100.0%)	FLT1 (-2.68) FLT4 (-2.80)	2.74	0.00	0
DASATINIB *(Sprycel)*	11	ABL1 ABL2 BCR EPHA2 FYN KIT LCK PDGFRB SRC STAT5B YES1	6 (3+3) (54.5%)	ABL1 (3.58) SRC (2.09) YES1 (2.33) BCR (-2.40) FYN (-2.59) KIT (-38.04)	8.51	2.67	72
ERLOTINIB *(Tarceva)*	1	EGFR	1 (0+1) (100.0%)	EGFR (-12.64)	12.64	0.00	0
GEFITINIB *(Iressa, Irressat, Tarceva)*	48	ABCG2 ADORA1 AREG AVEN CGRRF1 COL4A3BP CORO1C CYP1A2 CYP2C19 CYP2C9 CYP2D6 CYP2F1 CYP3A4 CYP3A5 DUSP3 DUSP9 EGF EGFR EPOR EPS15 ERBB2 ESR1 FGF6 GADD45A GADD45G GARS GCLC GNB2 GUCY2D HBEGF IFI6 IL8 LEPR MAPK1 MAPK3 MLH1 NFKB1 NPTX2 NRL OSMR	22 (5+17) (45.8%)	CYP2C9 (3.97) CYP2D6 (3.52, 3.15) EGF (16.93) GCLC (7.00, 3.83) NRL (2.45) ADORA1 (-2.74) AREG (-119.30) COL4A3BP (-2.58) CORO1C (-3.41, -5.23) CYP2F1 (-2.63) CYP3A4 (-7.84) CYP3A5 (-34.94) EGFR (-12.64) HBEGF (-5.28, -5.37) IFI6 (-7.89) IL8 (-16.97) LEPR (-22.59, -4.51) NPTX2 (-11.45) OSMR (-5.11, -3.52) PHLDA2 (-3.07) QSOX1 (-	13.20	6.42	66

		PHLDA2 QSOX1 RBM7 RPA1 SFN SKI TGFA TNFRSF1B		4.99) SKI (-4.75, -2.71, -3.52)			
IMATINIB *(Gleevec, Glivec)*	29	ABCB1 ABCG2 ABL1 AKT1 BCL2L1 BCR BIRC5 CCND3 CD69 CSF1R DDR1 FGFR3 FRAP1 HMOX1 IGF1 IL2RA KIT LCK MAPK1 MAPK3 NFKB1 NTRK1 PDGFRA PDGFRB RB1 RELA RET VEGFA WT1	11 (3+8) (37.9%)	ABL1 (3.58) DDR1 (3.07, 2.69, 3.21) VEGFA (2.60) ABCB1 (-3.59) BCR (-2.40) FGFR3 (-8.75) IGF1 (-5.82, -4.31, -5.16, -5.25) IL2RA (-2.77, -4.16) KIT (-38.04) PDGFRA (-4.21, -4.58) WT1 (-2.49)	7.04	3.06	31
LAPATINIB *(Tycerb, Tykerb)*	11	AKT1 BIRC5 CCND1 CCNE1 CDK2 CDKN1B EGFR ERBB2 ESR1 MAPK1 MAPK3	3 (1+2) (27.3%)	CCNE1 (5.62) CCND1 (-2.52) EGFR (-12.64)	6.93	5.62	51
LESTAURTINIB	1	FLT3	1 (0+1) (100.0%)	FLT3 (-8.47)	8.47	0.00	0
NILOTINIB *(Kelek)*	5	ABL1 BCR KIT PDGFRA PDGFRB	4 (1+3) (80.0%)	ABL1 (3.58) BCR (-2.40) KIT (-38.04) PDGFRA (-4.21, -4.58)	12.11	3.58	71
SEMAXANIB	1	KDR	1 (0+1) (100.0%)	KDR (-2.85, -2.51)	2.68	0.00	0
SORAFENIB *(Nexavar)*	18	BAK1 BAX BCL2 BCL2L1 BCL2L11 BID BRAF CASP3 CASP8 CYCS FLT3 FLT4 KDR KIT MCL1 PDGFRB RAF1 XIAP	9 (4+5) (50.0%)	BCL2L11 (3.13) BRAF (2.27) CASP3 (2.14) CASP8 (8.85, 2.67) FLT3 (-8.47) FLT4 (-2.80) KDR (-2.85, -2.51) KIT (-38.04) MCL1 (-3.34)	7.63	3.32	73
SUNITINIB *(SU-11248, Sutent)*	11	BRAF CSF1R FLT1 FLT3 FLT4 KDR KIT PDGFRA PDGFRB RAF1 RET	7 (1+6) (63.6%)	BRAF (2.27) FLT1 (-2.68) FLT3 (-8.47) FLT4 (-2.80) KDR (-2.85, -2.51) KIT (-38.04) PDGFRA (-4.21, -4.58)	8.76	2.27	20
VANDETANIB *(Zactima)*	2	EGFR KDR	2 (0+2) (100.0%)	EGFR (-12.64) KDR (-2.85, -2.51)	7.66	0.00	0
Cellular >> mTOR inhibitors							
Cellular >> mTOR inhibitors >> All							
TEMSIROLIMUS *(Torisel)*	6	CCND1 EIF4EBP1 ESR1 FRAP1 RB1 RPS6KB1	2 (1+1) (33.3%)	RPS6KB1 (2.20, 2.29) CCND1 (-2.52)	2.38	2.25	37
EVEROLIMUS *(Certican)*	11	AKT1 CCND1 CCND2 CCND3 EIF4E EIF4EBP1 EIF4G1 FRAP1 RB1 RPS6 RPS6KB1	3 (1+2) (27.3%)	RPS6KB1 (2.20, 2.29) CCND1 (-2.52) CCND2 (-7.50, -3.63, -13.98)	4.38	2.25	20
Cellular >> Cyclin-dependant kinase inhibitors							
Cellular >> Cyclin-dependant kinase inhibitors >> All							
FLAVOPIRIDOL *(HMR-1275, Alvocidib)*	35	BAG1 BAX BCL2 BCL2L1 BID BIRC3 BIRC5 CASP3 CASP8 CASP9 CCNB1	13 (7+6) (37.1%)	CASP3 (2.14) CASP8 (8.85, 2.67) CCNB1 (3.17) CDC2 (2.92) CDK6 (2.18, 2.25)	3.91	3.04	60

		CCND1 CDC2 CDK2 CDK4 CDK5 CDK6 CDK7 CDK8 CDK9 CDKN1A CDKN1B CYCS DIABLO EGFR H2AFX HTRA2 MAPK14 MAPK8 MCL1 PARP1 PYGM RB1 TP53 XIAP		CDK8 (2.39) PARP1 (2.68) BIRC3 (-2.84) CCND1 (-2.52) CDKN1A (**-7.85**, -4.44) EGFR (**-12.64**) MAPK8 (-2.06) MCL1 (-3.34)			
ROSCOVITINE *(Seliciclib)*	17	BAX BIRC5 CASP3 CASP9 CDC2 CDK4 CDK5 CDK6 CDKN1A CYCS DIABLO MCL1 PDCD8 RB1 SP1 TP53 XIAP	5 (3+2) (29.4%)	CASP3 (2.14) CDC2 (2.92) CDK6 (2.18, 2.25) CDKN1A (**-7.85**, -4.44) MCL1 (-3.34)	3.35	2.43	42
Cellular >> Other							
Cellular >> Other >> All							
AFLIBERCEPT *(VEGF Trap)*	1	VEGFA	1 (1+0) (100.0%)	VEGFA (2.60)	2.60	2.60	259
DENILEUKIN DIFTITOX *(Ontak)*	3	IL2RA IL2RB IL2RG	1 (0+1) (33.3%)	IL2RA (-2.77, -4.16)	3.47	0.00	0
Other / Ungrouped							
Other / Ungrouped >> Other							
Other / Ungrouped >> Other >> Other							
ARSENIC TRIOXIDE *(Arsenite, Arsenolite, Arsodent, Claudelite, Claudetite, Trisenox)*	496	ABCB1 ABCG2 ABL1 ACAA2 ADCY9 AFAP1 AKAP12 AKR1B1 AKT1 ALAS1 ALDH6A1 ALDOC ALG13 ALOX5AP ANK3 ANKRD12 ANPEP ANXA2 AP3S1 AQP9 ARL6IP1 ARL6IP5 ARL7 ARMC9 ASNS ASS1 ATP1B1 ATP2B1 ATP2C1 ATP5A1 ATP6 ATP8A1 ATR AZGP1 BACH2 BAMBI BAX BCL2 BCL2A1 BCL2L1 BCMO1 BCR BECN1 BHLHB2 BID BIRC5 BLVRB BLZF1 BNIP3 BNIP3L BPI BRDG1 BTBD2 BTBD3 C14ORF105 C16ORF58 C5ORF13 C6ORF48 C8ORF4 CACNA2D2 CAPN10 CAPZB CARS CASP10 CASP3 CASP8 CASP9 CAV1 CAV2 CCDC102B CCDC52 CCL15 CCL2 CCL23 CCNA1 CCNB1 CCNB2 CCND1 CD1D CD44 CD52 CD70 CD86 CDC42BPA CDC73 CDKN1A CDKN2A CDKN2B CDKN3 CEBPE CEP57 CFB CFLAR	246 (91+154+1) (49.6%)	ABL1 (3.58) AKAP12 (4.65, 2.82) AKR1B1 (**18.32**) ATP8A1 (3.45) ATR (2.33) BACH2 (2.04) BAMBI (2.21) BECN1 (2.18) BLVRB (2.08) BLZF1 (2.70) CAPN10 (2.13, **7.15**, 2.57) CASP3 (2.14) CASP8 (**8.85**, 2.67) CCNB1 (3.17) CCNB2 (4.19) CDC42BPA (2.48) CDKN2A (**18.18**, **9.22**) CDKN3 (**5.50**) CHEK1 (4.69) CHEK2 (2.55) CHGB (3.36, **6.71**) CLGN (3.78) CMTM8 (3.87) DNMT1 (2.20) DNMT3B (4.55) DUSP4 (2.60) EPHX1 (4.56) ERC2 (**7.66**, **17.53**) FGFR1 (**6.81**, **6.75**, **7.28**, **9.06**, **5.07**, **6.12**) FOXRED2 (2.33) FRK (**20.73**) FTH1 (2.42, 2.32, 2.35) GABPB2 (3.34, **5.13**) GCLM (**38.53**) GSTA1 (**16.89**) GSTP1 (3.00) HCG18 (2.45, 2.85, 2.24) HCRTR1 (2.33) HIG2 (**9.01**) HIST3H3 (2.04) HMGA1 (2.56, **6.05**) HSPA1A (4.07, 2.39) HSPB1 (4.23, 3.70, 3.27) IFRD1 (**6.54**, **6.75**) IGFBP2 (2.42) IKBKB (2.08, 2.59, 3.48) IQCH (2.10) KCNH2 (4.05) KLF5 (2.46) KYNU (2.22,	6.01	5.42	99

	CHEK1 CHEK2 CHGB CHI3L1 CHST6 CIDEB CITED2 CKAP4 CLC CLEC7A CLGN CMTM8 CNOT2 COBLL1 COLEC10 COPS5 CREB5 CRH CRIM1 CSF2RB CSH1 CSPP1 CSRP3 CST3 CTNNA1 CTSH CX3CL1 CYB5R3 CYBA CYBRD1 CYCS CYLD CYP1A1 CYP39A1 CYP3A43 CYTL1 DAXX DAZ4 DBC1 DDIT3 DEFA1 DEFA4 DKK1 DNAJB4 DNAJC9 DNMT1 DNMT3A DNMT3B DUSP4 DYNC1H1 DYRK1B EBI2 EGFR EGR1 ELA2A ENDOGL1 EP300 EPB41L2 EPHX1 EPX ERC2 ERGIC2 ESR1 ESR2 EVL F3 FAM110B FAM46C FANCC FAS FASLG FBLN5 FBXL7 FGFR1 FGFR2 FGR FNBP1L FOS FOXRED2 FRK FSCN1 FTH1 FYB GABBR2 GABPB2 GADD45A GBA GCLM GIMAP6 GIT2 GJA1 GLA GNAL GPM6A GPR30 GPR44 GPRC5D GPX1 GRAMD3 GRK4 GSTA1 GSTP1 GSTZ1 H2AFX HCG18 HCRTR1 HGF HIF1A HIG2 HIST1H2BM HIST1H4C HIST3H3 HK1 HLA-B HLA-C HLA-DRA HLA-F HLA-G HMGA1 HMGB2 HMGN2 HMOX1 HSD17B2 HSF1 HSP27 HSPA1A HSPA4 HSPA5 HSPA6 HSPB1 HTATIP2 ICAM3 ID1 ID2 IDS IER2 IFI16 IFIH1 IFNA2 IFNG IFRD1 IGFBP2 IGFBP7 IKBKB IL12RB2 IL24 IL6 IL8RB INPP5B INSM1 IQCH IRF1 ITGA2B ITGAM ITGB1 ITGB3BP ITGB7 ITM2A JUN JUND KCNH2 KCTD12 KIAA0087 KIAA1609 KIF21B KITLG KLF11 KLF5 KRT6A KYNU LAMC1 LAT LGALS9 LGMN LHFP LHX6 LSP1 LTC4S MAFF MAFG MAFK MAN1A1 MAOA		2.53) LAT (2.44) MAFG (3.54, 5.15) MAP7 (4.36, 4.74) MCM2 (3.39) ME1 (8.79, 22.62, 9.07) NPAS1 (4.81) NUP107 (2.16) ORC4L (2.05) PAQR6 (2.43) PARP1 (2.68) PAWR (2.19) PIR (2.63) PTRH2 (2.31) RNF24 (2.24) RPL23 (5.58) RPS6KB1 (2.20, 2.29) RSL1D1 (2.55) SCPEP1 (2.35) SLC2A1 (22.83) SLC44A1 (2.84) SLC5A12 (6.44, 4.94) SMC4 (2.40) SOD1 (2.68, 2.37) SOX4 (2.17) SYNJ2 (4.91, 9.38) TERT (3.67) TFAP2C (3.61) TNFRSF25 (7.01) TOP2A (5.88) TP53I11 (2.08, 2.00) TRIP13 (8.20) TRMT1 (2.04) TYMS (3.69) UBE2C (9.47) UCHL1 (26.51) VEGFA (2.60) WDR12 (4.78) ZMYM2 (3.03, 4.70) ZNF334 (12.87) ZNF682 (3.69, 7.03) ZWINT (6.72) ABCB1 (-3.59) ACAA2 (-2.69) ADCY9 (-2.46) ALDH6A1 (-2.90) ALDOC (-4.73) ALOX5AP (-5.07, -7.13) ANK3 (-9.06, -7.92, -7.43) ANPEP (-5.41) AQP9 (-13.82) ARL6IP5 (-3.81, -3.50) ARMC9 (-5.30, -5.49) ASNS (-3.65) ASS1 (-2.76) BCL2A1 (-18.59, -2.78) BCR (-2.40) BHLHB2 (-2.28) BTBD3 (-2.40, -2.31) CACNA2D2 (-17.47) CAV1 (-22.26, -24.68) CAV2 (-14.35, -7.56) CCDC102B (-2.74, -2.50) CCL15 (-4.50) CCL2 (-8.86) CCL23 (-15.78, -18.04) CCND1 (-2.52) CD44 (-5.46) CD52 (-5.80) CD86 (-5.13, -2.01) CDKN1A (-7.85, -4.44) CFB (-9.87) CHI3L1 (-3.97, -12.11) CHST6 (-15.14) CITED2 (-2.04) CKAP4 (-3.35) CLEC7A (-2.69, -3.19) COBLL1 (-3.44) CREB5 (-9.32, -11.86) CSF2RB (-2.47) CST3 (-2.29) CTSH (-3.47) CX3CL1 (-3.73, -9.86, -4.60) CYB5R3 (-2.89, -2.40, -2.01) CYBRD1 (-2.20) CYTL1 (-6.17) DBC1 (-3.01) DKK1 (-16.44) EBI2 (-5.77) EGFR (-12.64) EGR1 (-6.04) ELA2A			

	MAP2K3 MAP2K4 MAP2K6 MAP7 MAPK1 MAPK14 MAPK3 MAPK7 MAPK8 MAPK9 MARCH2 MASK MCF2L MCM2 ME1 MKI67IP MMP1 MMP2 MMP28 MMP9 MPL MPO MRPS16 MSC MSRB2 MT1E MT1G MT1H MT1L MT1X MT2A MTA1 MXRA7 MYBL1 MYC MYCN MYO1B MYST4 N4BP1 N4BP2L1 NAB2 NAV3 NCF1 NCF2 ND4 NEU3 NFE2L1 NFKBIA NFKBIE NME1 NPAS1 NPTX2 NR3C1 NUCB2 NUDT18 NUP107 OBSL1 ORC4L OS9 P4HA1 P53AIP1 PAFAH2 PAOX PAQR6 PARP1 PAWR PCNA PCSK5 PDCD4 PDE4A PDE4B PDE4DIP PDLIM7 PDPK1 PDZD2 PECAM1 PEX3 PGC PGF PHLDA2 PIGO PIK4CA PIR PKNOX1 PLAUR PLEKHO1 PLXNC1 PML PPGB PPIH PPP1CB PRG3 PRKC8 PRR16 PRSS1 PSMB6 PSMB8 PTGFR PTRH2 PTTG1 PURG PXDN RAB27B RACGAP1 RAPGEF4 RARA RASSF8 RBMX RELA RERE RFC2 RGS2 RNASEH2A RNF144A RNF24 RNF6 ROBO1 RPL17 RPL18A RPL23 RPL7 RPS15A RPS6KB1 RRBP1 RSL1D1 RYK S100A10 S100A8 S100A9 SATB2 SCAMP5 SCGB2A2 SCPEP1 SCT SDC2 SDC4 SELP SERPINB1 SERTAD2 SFRS5 SH3GL2 SIGLEC6 SLC14A2 SLC15A1 SLC1A2 SLC22A18 SLC2A1 SLC44A1 SLC5A12 SLC6A5 SLCO3A1 SMAD1 SMC4 SOD1 SOX18 SOX30 SOX4 SP1 SPTAN1 ST6GALNAC4 STAB1 STAT1 STATH SULF1 SUSD5 SYN3 SYNJ2 TCF4 TERC TERF1 TERF2 TERT TFAP2C TFF1 TGFBR2 TIMP1	(-4.13) EVL (-2.26) F3 (-3.63) FAM110B (-3.73) FAM46C (-2.08) FAS (**-5.93**) FBLN5 (-2.08) FBXL7 (-4.06) FGFR2 (**-31.03**, -2.09, **-16.52**) FGR (**-6.72**, **-9.45**, **-8.54**) FYB (-2.23) GIMAP6 (-2.66) GJA1 (**-9.56**) GPM6A (**-34.94**) GRAMD3 (-2.12) HGF (-2.73, **-6.54**) HLA-DRA (-4.55) HSD17B2 (**-17.74**) HSPA5 (-2.00) HSPA6 (-4.66) ID1 (-2.07) ID2 (-2.96, -3.38) IFI16 (-3.75, -3.71) IL6 (**-39.79**) IL8RB (-3.46) IRF1 (-2.23) ITGAM (-3.25) ITGB3BP (-2.46) ITM2A (-3.63) JUN (-2.62) KCTD12 (-4.62) KITLG (-2.48, -3.23, **-6.48**) KRT6A (**-11.07**) LGALS9 (-2.05) LGMN (-2.41) LHFP (-3.42) LSP1 (-2.10) LTC4S (-2.70) MAFF (-3.57) MAN1A1 (-2.01) MAOA (-3.11) MAP2K3 (-3.18, -3.56) MAP2K6 (-4.53) MAPK8 (-2.06) MARCH2 (-3.34, -3.08) MMP1 (**-58.24**) MMP2 (-4.48) MMP28 (**-8.08**, **-14.29**) MMP9 (**-10.90**) MT1E (**-15.67**) MT1G (**-11.42**, **-6.38**) MT1H (**-8.15**, **-8.00**) MT1L (**-11.08**) MT1X (**-8.45**, **-9.49**) MT2A (**-8.59**, **-9.15**) MXRA7 (-2.88, -4.06, -3.93, -3.20) MYO1B (-3.04, -2.30, -2.61) NAV3 (**-6.48**, **-8.99**) NCF1 (-3.16, -3.30) NCF2 (-3.56) NFKBIA (-4.00) NPTX2 (**-11.45**) NUCB2 (-3.02, -3.50) NUDT18 (-4.22) OBSL1 (**-5.40**, -4.33) P4HA1 (-2.49) PDE4B (**-5.96**) PDE4DIP (**-6.65**, -2.11, -2.32, -2.90) PDLIM7 (-2.16) PDZD2 (**-33.94**) PECAM1 (-4.62) PGC (-3.76, **-25.02**) PGF (-2.56) PHLDA2 (-3.07) PLAUR (**-5.48**) PLEKHO1 (-2.69) PML (-2.88, -3.32, -3.67, -3.53) PPP1CB (**-5.15**, -2.92) PRR16 (**-16.52**) PTGFR (**-7.80**) PXDN (-3.39, -3.20) RASSF8 (**-5.90**, **-17.88**, -2.19, **-10.81**) RGS2 (**-9.73**) RNF144A (-2.56) RPL17 (-3.08, -2.59, -2.80) RPL7 (-2.15, -2.41) S100A8 (**-10.28**) S100A9 (-2.26) SDC2 (-3.99) SELP (-4.50) SERPINB1 (-2.41) SH3GL2 (**-5.52**)			

		TIMP2 TMEM158 TNF TNFAIP3 TNFAIP8 TNFRSF1B TNFRSF25 TNFRSF9 TNFSF13 TNFSF8 TOP2A TP53 TP53I11 TP73 TPT1 TRA2A TRAF3IP2 TRIM16 TRIP13 TRMT1 TSC22D3 TTC38 TXNIP TYMS UBE2C UBE2D1 UCHL1 UCP2 VEGFA VNN1 WDR12 WDR82 WSB2 WT1 XIAP XRCC6 ZFP36 ZFP36L1 ZMYM2 ZNF334 ZNF37A ZNF682 ZNF771 ZWINT		SMAD1 (-3.04) SUSD5 (-2.47) TCF4 (-3.68, -2.69) TGFBR2 (-3.67, -4.16) TIMP1 (-4.76) TIMP2 (-3.34) TNFAIP3 (-3.78, -3.05) TNFAIP8 (-3.52) TNFSF13 (-4.94) TPT1 (-2.57, -2.61, -2.20) UBE2D1 (-2.48) VNN1 (-2.97, -2.90) WT1 (-2.49) *DNMT3A* (2.41, -2.89)			
BORTEZOMIB *(Velcade)*	61	AKT1 APAF1 BAK1 BAX BCL2 BCL2L1 BCL2L11 BID BIRC2 BIRC3 BIRC5 CA9 CASP3 CASP7 CASP8 CASP9 CCND1 CDKN1A CDKN1B CFLAR CYCS CYP1A2 CYP2C19 CYP2C9 CYP2D6 CYP3A4 DDIT3 DFFA DIABLO HIF1A HSPA5 HTRA2 JUN MAP2K1 MAP2K4 MAPK1 MAPK14 MAPK3 MAPK8 MCL1 NFKB1 NFKBIA NFKBIB NFKBIE PARP1 PDCD8 PMAIP1 PSMB1 PSMB2 PSMB5 PSMD1 PSMD2 RAF1 RB1 RELA SFN STAT3 TNF TP53 TRAF2 XIAP	18 (9+9) (29.5%)	BCL2L11 (3.13) CASP3 (2.14) CASP8 (**8.85**, 2.67) CYP2C9 (3.97) CYP2D6 (3.52, 3.15) NFKBIB (2.90, 2.95, 2.86) PARP1 (2.68) PMAIP1 (**12.40**) PSMB5 (2.22) BIRC3 (-2.84) CCND1 (-2.52) CDKN1A (**-7.85**, -4.44) CYP3A4 (**-7.84**) HSPA5 (-2.00) JUN (-2.62) MAPK8 (-2.06) MCL1 (-3.34) NFKBIA (-4.00)	3.99	4.28	63
CELECOXIB *(Celebra, Celebrex)*	17	AKT1 BIRC5 CASP3 CCND1 CYP19A1 IL1B IL6 MAP2K1 MAP2K2 NRG1 PARP1 PDPK1 PTGS2 RELA STS SULT2A1 TNF	8 (4+4) (47.1%)	CASP3 (2.14) CYP19A1 (2.64) NRG1 (2.37) PARP1 (2.68) CCND1 (-2.52) IL1B (**-12.47**) IL6 (**-39.79**) PTGS2 (**-36.04**, **-32.79**)	12.38	2.46	57
COLCHICINE *(Col-probenecid, Colbenemid, Condylon, Proben-C)*	21	ABCB1 ABCC1 CD59 CUGBP2 CYP3A4 IKBKB JUN MAPK8 MAPK9 MEFV NFATC4 NFKB1 NFKBIA NR3C1 PTK2B RALBP1 RELA TAT TP53 TUBB1 TUBB2A	9 (2+7) (42.9%)	ABCC1 (**7.70**) IKBKB (2.08, 2.59, 3.48) ABCB1 (-3.59) CD59 (**-8.71**, -4.89, -4.77, **-7.00**) CUGBP2 (**-7.53**, **-8.05**) CYP3A4 (**-7.84**) JUN (-2.62) MAPK8 (-2.06) NFKBIA (-4.00)	4.96	5.21	49
OBLIMERSEN *(Genasense, Augmerosen)*	2	BCL2 IGH-6	-	-	-	-	-
TEGAFUR *(UFT)*	1	CYP2A6	-	-	-	-	-
TIPIFARNIB *(Zarnestra)*	4	ABCB1 CYP3A4 CYP3A5 UGT1A1	3 (0+3) (75.0%)	ABCB1 (-3.59) CYP3A4 (-**7.84**) CYP3A5 (**-34.94**)	15.46	0.00	0
VORINOSTAT	47	AKT1 BAK1 BAX BCL2	17	BCL2L11 (3.13) CASP2	4.07	3.36	71

(Zolinza)	BCL2A1 BCL2L1 BCL2L11 BID BIRC2 BIRC3 BIRC5 CASP2 CASP3 CASP7 CASP8 CASP9 CCND1 CDKN1A CDKN1B CFLAR CYCS CYP1A1 CYP1B1 DIABLO ERBB2 HDAC1 HDAC2 HDAC3 HDAC6 HDAC8 HIST3H3 HTRA2 MAP2K1 MAPK1 MAPK14 MAPK3 MAPK8 NFKB1 PARP1 PDCD8 RAF1 RARB RB1 RELA TNF TNFSF10 XIAP	(10+7) (36.2%)	(2.27) CASP3 (2.14) CASP8 (8.85, 2.67) HDAC1 (6.44) HDAC2 (4.18) HDAC6 (2.00) HIST3H3 (2.04) PARP1 (2.68) RARB (2.96) BCL2A1 (-18.59, -2.78) BIRC3 (-2.84) CCND1 (-2.52) CDKN1A (-7.85, -4.44) CYP1B1 (-3.87) MAPK8 (-2.06) TNFSF10 (-7.51)			

CLAIMS

1. A method for predicting the relative efficacy of a plurality of drugs for treating a cancer in a patient comprising:

- characterizing molecular anomalies of a tumour sample from the patient in comparison to a normal sample from the same patient, thereby determining the deregulated genes in the tumour;
- providing a database comprising the target genes for each drug of the plurality of drugs;
- determining a score for each drug of the plurality of drugs essentially based on the percentage of deregulated genes among the target genes for each drug in the tumour sample from the patient, thereby a higher score is predictive of a higher relative efficacy of the drug for treating the tumour in the patient.

2. The method according to claim 1, wherein the step of characterizing molecular anomalies of a tumour sample comprises determining the genes differentially expressed in the tumour in comparison to the normal sample, and/or determining the gain or loss of gene copy number and/or detecting the presence of a mutation in a gene.

3. The method according to claim 2, wherein the step of characterizing molecular anomalies of a tumour sample comprises determining a fold change (F) for the differentially expressed genes and/or for the gain or loss of gene copy number and, optionally, further determining the intensity of the gene transcription (Int) for the differentially expressed genes.

4. The method according to any one of claims 1-3, wherein the target genes for each drug are classified in the database into the major target genes (MC), the minor target genes (Mc) and the resistance genes (CR).

5- The method according to anyone of claims 1-4, wherein the score (W) for a given drug is determined by the following algorithm:

$$W = P\ z\ \frac{(\ \Sigma_C\ F_{c>2}\ )}{n_C F_{c>2}}$$

wherein

W is the score for the given drug;

P is the percentage of target genes for the given drug which are deregulated in the tumour of the patient;

z is an optional multiplication coefficient associated to the presence of a mutation in a target gene of the given drug ;

Σ is sum;

$F_{c>2}$ is the fold change of each deregulated target gene for the given drug with a Fold Change higher than 2;

$n_C F_{c>2}$ refers to the number of target genes for the given drug with a Fold Change higher than 2.

6. The method according to claim 5, wherein $F_{c>2}$ is the Fold Change of each over-expressed target gene for the given drug with a Fold Change higher than 2 and $n_C F_{C>2}$ is either the number of target genes for the given drug with a Fold Change higher than 2, or the number of over-expressed target genes for the given drug with a Fold Change higher than 2.

7. The method according to any one of claims 1-4, wherein the score (W) for a given drug is determined by the following algorithm:

$$W = P\left[\frac{(\Sigma_{CM} F_{CM})}{n_1 CM} q_1 z_1 + \frac{(\Sigma_{Cm} F_{Cm})}{n_2 Cm} q_2 z_2 - \frac{(\Sigma_{CR} F_{CR})}{n_3 CR} q_3 z_3\right]$$

wherein

W is the score for the given drug;

P is the percentage of target genes for the given drug which are deregulated in the tumour of the patient;

Σ is sum;

CM refers to major target genes for the given drug;

Cm refers to minor target genes for the given drug;

CR refers to resistance genes for the given drug;

n_1CM, n_2Cm and n_3CR are respectively the number of deregulated target genes with a defined threshold for major target genes, minor target genes and resistance genes;

FCM, Fcm and FCR are the Fold change of each gene higher than the defined threshold for major target genes, minor target genes and resistance genes, respectively;

q_1, q_2 and q_3 are optional multiplication coefficients for major target genes, minor target genes and resistance genes, respectively;

z_1, z_2 and z_3 are optional multiplication coefficients associated to the presence of a mutation in a major target gene, a minor target gene and a resistance gene, respectively.

8. The method according to any one of claims 1-4, wherein the score (W) for a given drug is determined by the following algorithm:

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM})}{n_1 CM} q_1 z_1 + \frac{P_{Cm}(\Sigma_{Cm} F_{Cm})}{n_2 Cm} q_2 z_2 - \frac{P_{CR}(\Sigma_{CR} F_{CR})}{n_3 CR} q_3 z_3$$

wherein the meaning of W, Σ, CM, Cm, CR, F_{CM}, Fcm, F_{CR}, q_1, q_2, q_3, z_1, z_2 and z_3 are as defined above and P_{CM}, P_{cm} and P_{CR} are the percentage of genes for the given drug which are deregulated in the tumour of the individual for major target genes, minor target genes and resistance genes, respectively.

9. The method according to any one of claims 1-4, wherein the score (W) for a given drug is determined by one of the following algorithms:

$$W = P\left[\frac{(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1 CM} q_1 z_1 + \frac{(\Sigma_{Cm} F_{Cm} \times Int_{Cm})}{n_2 Cm} q_2 z_2 - \frac{(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3 CR} q_3 z_3\right]$$

or

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1 CM} q_1 z_1 + \frac{P_{Cm}(\Sigma_{Cm} F_{Cm} \times Int_{Cm})}{n_2 Cm} q_2 z_2 - \frac{P_{CR}(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3 CR} q_3 z_3$$

wherein the meaning of W, Σ, CM, Cm, CR, F_{CM}, F_{cm}, F_{CR}, q_1, q_2, q_3, z_1, z_2 and z_3, and if present P_{CM}, P_{cm} and P_{CR}, are as defined above and Int_{CM}, Int_{cm} and Int_{CR} are the intensity for major target genes, minor target genes and resistance genes, respectively.

10. The method according to any one of claims 1-4, wherein the score (W) for a given drug is determined by one of the following algorithms:

$$W = P\left[\frac{(\Sigma_{CM} F_{CM})}{n_1 CM} q_1 z_1 - \frac{(\Sigma_{CR} F_{CR})}{n_3 CR} q_3 z_3\right]$$

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM})}{n_1 CM} q_1 z_1 - \frac{P_{CR}(\Sigma_{CR} F_{CR})}{n_3 CR} q_3 z_3$$

or

$$W = P\left[\frac{(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1 CM} q_1 z_1 - \frac{(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3 CR} q_3 z_3\right]$$

or

$$W = \frac{P_{CM}(\Sigma_{CM} F_{CM} \times Int_{CM})}{n_1 CM} q_1 z_1 - \frac{P_{CR}(\Sigma_{CR} F_{CR} \times Int_{CR})}{n_3 CR} q_3 z_3$$

wherein the meaning of W, Σ, CM, CR, F_{CM}, F_{CR}, q_1, q_3, z_1 and z_3, and if present P_{CM}, P_{CR}, Int_{CM}, and Int_{CR} are as defined above.

11. The method according to any one of claims 7-10, wherein F_{CM}, F_{cm} and F_{CR} are the Fold Change of each over-expressed target gene for the given drug with the defined threshold and n_1CM, n_2Cm and n_3CR are either the number of target genes for the given drug with the defined threshold, or the number of over-expressed target genes for the given drug with the defined threshold.

12. The method according to claim 11, wherein the defined threshold is a Fold change of at least 2 or higher than 2.

13. The method according to any one of claims 7-12, wherein multiplication coefficients for the target genes can be comprised between 10 and 1,000 for major

target genes (q_1), 0.1 and 10 for minor target genes (q_2) and 10 to 1,000 for resistance genes (q_3).

14. The method according to any one of claims 7-13, wherein multiplication coefficients associated to a mutation z_1, z_2 and z_3 are 1 when no mutation exists and, depending on the functional impact of the mutation, can be comprised between 10 and 1,000.

METHOD FOR PREDICTING EFFICACY OF DRUGS IN A PATIENT

The present invention concerns a method for predicting the relative efficacy of a plurality of drugs for treating a tumour in an individual comprising the molecular characterization of the tumour, and the calculation of a score for the plurality of drugs essentially based on the percentage of deregulated target gene.

(No suitable figure)