

wherein in case one or two or all of i) to iii) is given the subject is predicted to show improved susceptibility to a treatment with an EGFR inhibitor compared to a subject not showing any of i) to iii).

- 5 15. Use of an anti-cancer drug in the manufacturing of a medicament for treating cancer, wherein the use comprises:
 - a) detecting or determining: i) if there is presence of a mutation in a long non-coding RNA on an antisense strand of an oncogene related to the cancer, wherein the genetic mutation alters or disrupts expression of the oncogene, or ii) if the
 10 subject has lower EGFR-AS1 or EGFR-AS1 lncRNA expression level compared to subject that does not respond to treatment with a tyrosine kinase inhibitor, or iii) if the subject has higher EGFR isoform D/isoform A ratio compared to subject that does not respond to treatment with an EGFR inhibitor;
 - b) that in case one or more of the conditions i), ii) and iii) is met, the anti-cancer
 15 drug for the cancer type the subject suffers from is to be administered to the subject.
16. The use of claim 15, wherein the oncogene is selected from the group consisting of EGFR encoding epidermal growth factor receptor, IGF1R encoding insulin growth
 20 factor 1 receptor, mTOR encoding mechanistic target of rapamycin, PIK3CB encoding phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit beta isoform, PIK3CD encoding phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit delta isoform, PIK3R3 encoding phosphatidylinositol 3-kinase regulatory subunit gamma and ERBB4 encoding receptor tyrosine-protein kinase erbB-4.
17. The use of claim 15 or 16, wherein the non-coding RNA on an antisense strand of an oncogene is selected from the group consisting of EGFR-AS1 for EGFR gene; IRAIN
 25 for IGF1R gene, MTOR-AS1 for MTOR gene; GAPDHP39 and RPL23AP40 for PIK3CB gene; LOC101929626 for PIK3R3 gene; PIK3CD-AS1, PIK3CD-AS2 and RPL26P7 for PIK3CD gene and RNA5SP119 for ERBB4 gene.
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18. The use of claim 16 to 17, wherein the cancer related to EGFR is head and neck cancer or lung cancer.
19. The use of claim 18, wherein the head and neck cancer is head and neck squamous cell carcinoma (HNSCC) or oral squamous cell carcinoma (OSCC).
20. The use of claim 18, wherein the lung cancer is non-small cell lung cancer (NSCLC).
21. The use of any one of claims 15 to 17, wherein the cancer related to PIK3CD is haematological malignancy.
22. The use of any one of claims 15 to 17, wherein the cancer related to ERBB4 is breast cancer.
23. The use of any one of claims 15 to 17, wherein the cancer is an EGFR related cancer and the mutation (genetic alteration) is a silent G>A mutation at Q787Q position in exon 20 of EGFR.
24. The method of any of claims 1-14 or the use according to any of claims 15-23, wherein the anti-cancer drug is selected from the group consisting of gefitinib, erlotinib and afatinib for the treatment of cancer related to EGFR; OSI-902(Linsitinib) for the treatment of cancer related to IGF1R; everolimus (RAD001) and sirolimus for the treatment of cancer related to mTOR; BKM120(Buparlisib) and BYL719(Alpelisib) for the treatment of cancer related to PIK3CB and PIK3R3; Idelalisib for the treatment of cancer related to PIK3CD and dacomatinib and lapatinib for the treatment of cancer related to ERBB4.
25. The use according to any of one of claims 15 to 24, wherein the oncogene related to cancer is EGFR; wherein the mutation in a) of claim 15 is a silent G>A mutation at Q787Q position in exon 20 of EGFR; and wherein the anti-cancer drug is gefitinib.

26. Use of a therapeutic agent in the manufacture of a medicament for treating cancer, wherein the use comprises:
- 5 a) that an effective amount of the therapeutic agent affecting expression of a non-coding RNA on an antisense of an oncogene is to be administered to the subject suffering from said cancer; and
- b) that an effective amount of an anti-cancer drug specific for the cancer related to the oncogene is to be administered to the subject suffering from said cancer.
- 10 27. The use according to claim 26, wherein a) and b) are carried out simultaneously or b) is carried out after a).
28. The use according to claim 27, wherein when b) is carried out after a), the time interval between a) and b) is at least 1 to 24 hours, or at least 1 or 2 or 3 or 4 or 5 or 6 or 7 days, or at least one week.
- 15 29. The use according to claim 26, wherein the therapeutic agent is selected from the group consisting of miRNAs (microRNAs), siRNA (small interfering RNA), locked nucleic acids (LNAs) and shRNA (short hairpin RNA).
- 20 30. Use of a therapeutic agent in the manufacture of a medicament for treating EGFR related cancer, wherein the use comprises::
- a) that an effective amount of a therapeutic agent affecting EGFR-AS1 lncRNA expression, or affecting EGFR-AS1 expression, or increasing the amount of EGFR isoform D and/or decreasing EGFR isoform A or a combination thereof
- 25 is to be administered to the subject suffering from said cancer; and
- b) that an effective amount of a tyrosine kinase inhibitor used to treat the EGFR-related cancer is to be administered to the subject suffering from said cancer.
31. The use according to claim 30, wherein a) and b) are carried out simultaneously or b)
- 30 is carried out after a).

32. The use according to claim 31, wherein when b) is carried out after a), the time interval between a) and b) is at least 1 to 24 hours, or at least 1 or 2 or 3 or 4 or 5 or 6 or 7 days, or at least one week.
- 5 33. The use according to any one of claims 30 to 32, wherein the therapeutic agent affecting EGFR-AS1 expression comprises miRNA, shRNA, LNAs, siRNA or combinations thereof.
- 10 34. The use according to any one of claims 30 to 32, wherein the therapeutic agent suppressing EGFR-AS1 comprises EGFR-AS1 targeting LNA.
- 15 35. The use according to any one of claims 30 to 32, wherein the therapeutic agent increasing EGFR isoform D or decreasing EGFR isoform A comprises an agent modulating the alternative splicing of EGFR.
36. The use according to any one of claims 30 to 35, wherein the tyrosine kinase inhibitor is an EGFR inhibitor.
- 20 37. The use according to claim 36, wherein the tyrosine kinase inhibitor is selected from the group consisting of gefitinib, erlotinib, erlotinib HCl, lapatinib, dacomitinib, TAE684, afatinib, dasatinib, saracatinib, veratinib, AEE788, WZ4002, icotinib, osimertinib, BI1482694, ASP8273, EGF816, AZD3759, cetuximab, necitumumab, panitumumab, nimotuzumab and combinations thereof.
- 25 38. The use according to claim 36, wherein the tyrosine kinase inhibitor is selected from the group consisting of gefitinib, erlotinib and lapatinib.