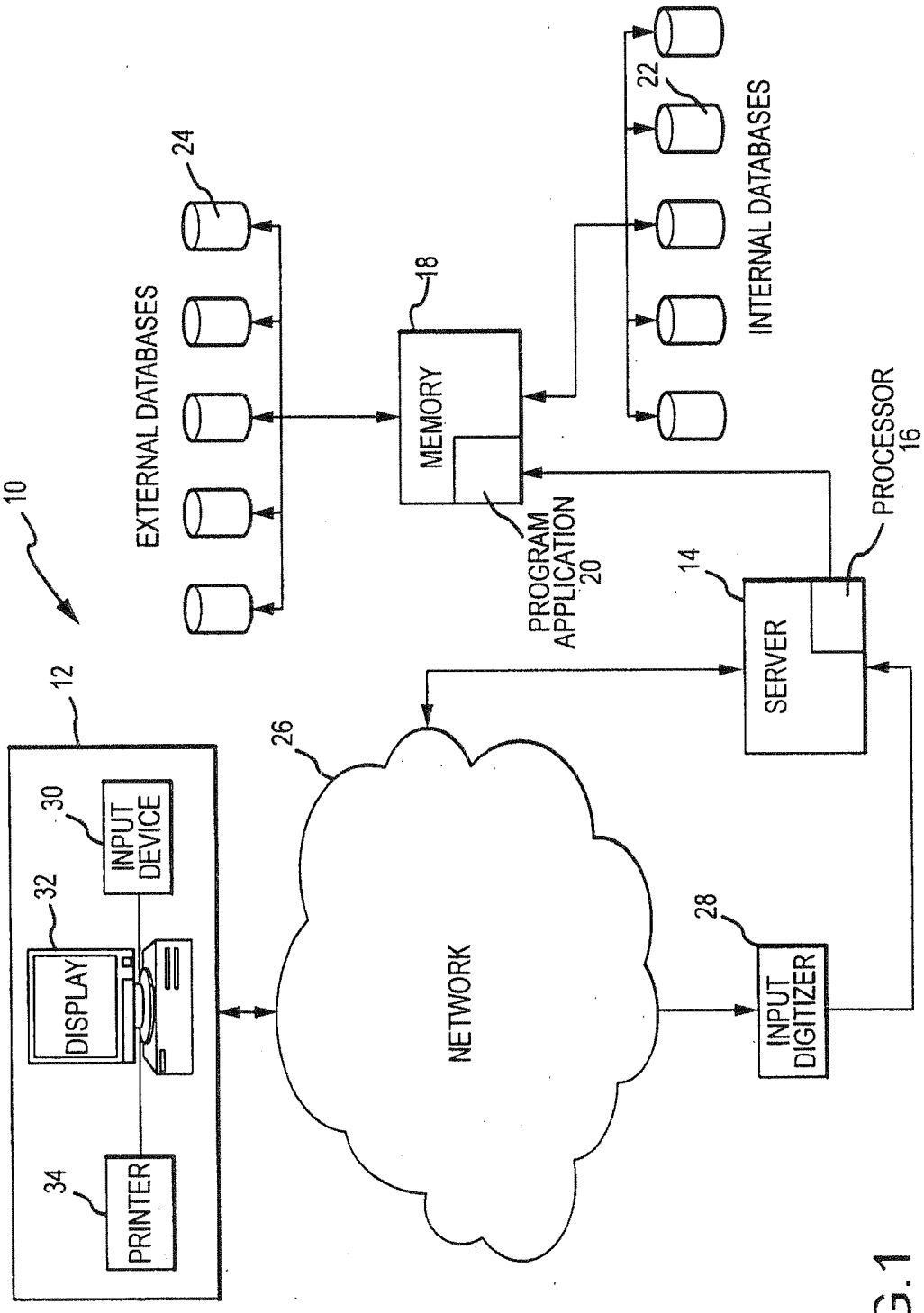

10
12
EXTERNAL DATABASES
24
MEMORY
18
INTERNAL DATABASES
22
PROGRAM APPLICATION
20
PROCESSOR
16
SERVER
14
NETWORK
26
INPUT DEVICE
30
DISPLAY
32
PRINTER
34
INPUT DIGITIZER
28

FIG.1

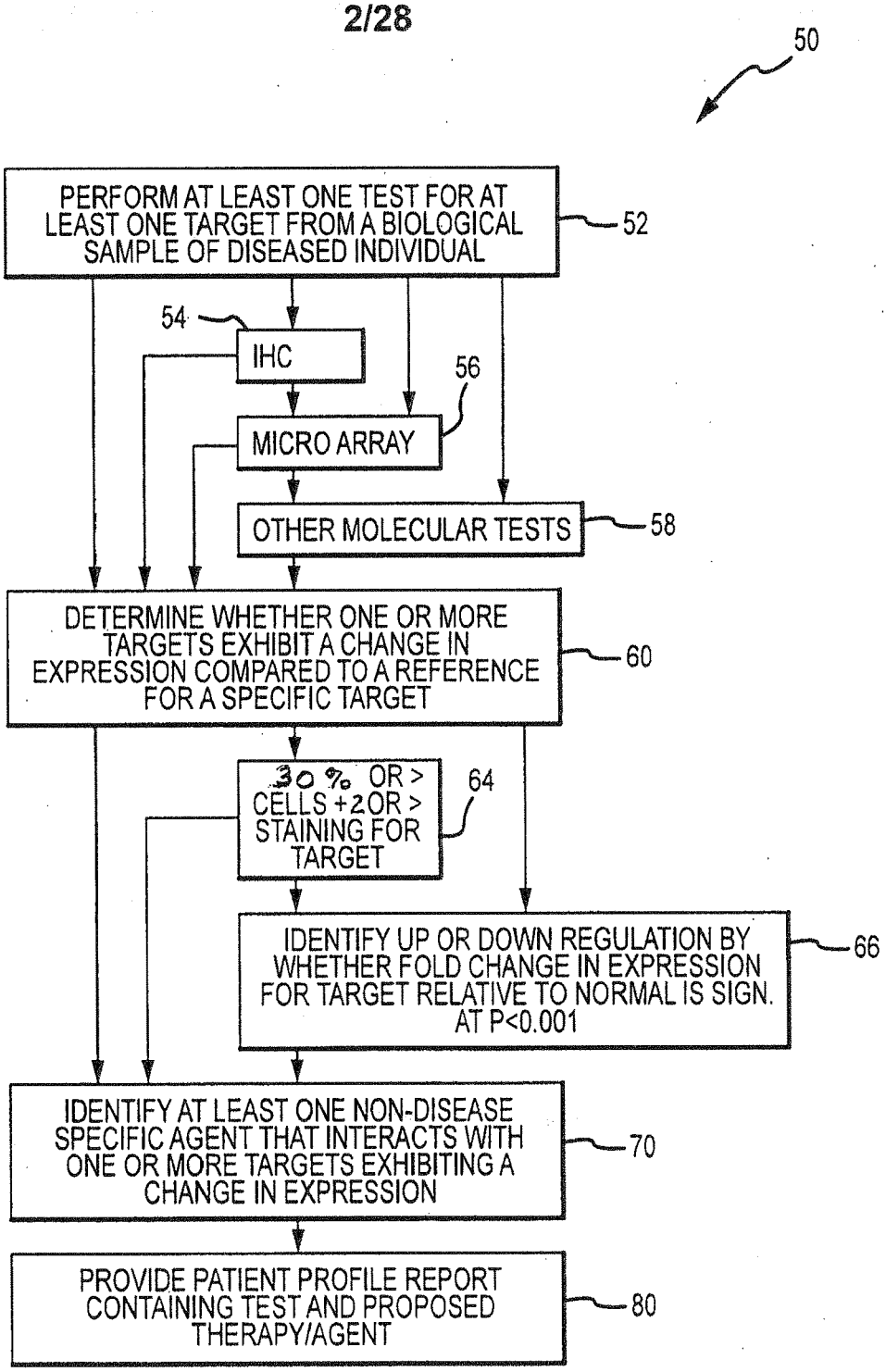

50
PERFORM AT LEAST ONE TEST FOR AT LEAST ONE TARGET FROM A BIOLOGICAL SAMPLE OF DISEASED INDIVIDUAL
52
54
IHC
56
MICRO ARRAY
OTHER MOLECULAR TESTS
58
DETERMINE WHETHER ONE OR MORE TARGETS EXHIBIT A CHANGE IN EXPRESSION COMPARED TO A REFERENCE FOR A SPECIFIC TARGET
60
30% OR > CELLS +2 OR > STAINING FOR TARGET
64
IDENTIFY UP OR DOWN REGULATION BY WHETHER FOLD CHANGE IN EXPRESSION FOR TARGET RELATIVE TO NORMAL IS SIGN. AT P<0.001
66
IDENTIFY AT LEAST ONE NON-DISEASE SPECIFIC AGENT THAT INTERACTS WITH ONE OR MORE TARGETS EXHIBITING A CHANGE IN EXPRESSION
70
PROVIDE PATIENT PROFILE REPORT CONTAINING TEST AND PROPOSED THERAPY/AGENT
80

FIG.2

MOLECULAR PROFILING INSTITUTE	PATIENT INFORMATION	PHYSICIAN INFORMATION
	NAME: SAMPLE PATIENT SEX: FEMALE DOB: 6/1/1974 SSN#: 123-45-6789	SOME DOCTOR, M.D. 1234 E. SOUTH ST. TUCSON, AX 12345 480-123-4567
	REPORT INFORMATION VER 1.6.2:4-25-06	
	DATE SPECIMEN RECEIVED: 02/01/2006 DATE REPORTED: 02/09/2006 CASE NO. MP-TN06-05040 DATE SPECIMEN COLLECTED AT HOST MEDICAL CENTER: 01/24/2006	

SPECIAL STUDIES

RESULTS AND INTERPRETATION

INTERPRETATION:

REVIEW OF PATHOLOGY SLIDES: (RECEIVED FROM MAIN HOSPITAL, TUCSON, AZ, ONE PARAFFIN BLOCK LABELED M01-123 AND FROZEN TISSUE).

PELVIC AND RETROPERITONEAL TUMOR: INFLAMMATORY MYOFIBROLASTIC TUMOR.

100

102 104 106

POSSIBLE AGENTS THAT MIGHT INTERACT WITH CANDIDATE GENE TARGETS:

ASSAY*	CANDIDATE TARGET	SIGNIFICANT RESULT	POSSIBLE AGENT(S)
MICROARRAY	NFKBIA	(INCREASED 1.78)**	VELCADE
IHC	C-KIT	(INCREASED +2, 90%)	GLEEVEC, SUTENT
MICROARRAY	PDGFRA	(INCREASED 4.74)**	GLEEVEC, SORAFENIB, SUTENT
MICROARRAY	GART	(INCREASED 1.90)**	ALIMTA
MICROARRAY	VDR	(INCREASED 37.30)**	CALCITRIOL
MICROARRAY	ADA	(INCREASED 5.26)**	PENTOSTATIN
MICROARRAY	TOP1	(INCREASED 2.78)**	TOPOTECAN, CAMPTOSAR (CPT11)
MICROARRAY	HIF1A	(INCREASED 4.03)**	AVASTIN, SORAFENIB. SUTENT
MICROARRAY	DNMT1	(INCREASED 1.51)**	VIDAZA (5-AZACYTIDINE)

*IHC = IMMUNOHISTOCHEMISTRY

** INCREASED OR DECREASED ARE RELATIVE TO NORMAL CONTRLS.

FIG.3A

MOLECULAR PROFILING INSTITUTE

PATIENT INFORMATION	PHYSICIAN INFORMATION
NAME: SAMPLE PATIENT SEX: FEMALE DOB: 6/1/1974 SSN#: 123-45-6789	SOME DOCTOR, M.D. 1234 E. SOUTH ST. TUCSON, AX 12345 480-123-4567

REPORT INFORMATION VER 1.6.2:4-25-06

DATE SPECIMEN RECEIVED: 02/01/2006 DATE REPORTED: 02/09/2006 CASE NO. MP-TN06-05040

DATE SPECIMEN COLLECTED AT HOST MEDICAL CENTER: 01/24/2006

SPECIAL STUDIES

RESULTS AND INTERPRETATION

ADVANCED IMMUNOHISTOCHEMICAL ANALYSIS:

112

GENE EXPRESSED PROTEIN	CONCLUSION	SPECIFICITY	INTENSITY	%	TARGET STATUS*
HER2/NEU	NEGATIVE				
ER	NEGATIVE				
PR	NEGATIVE				
C-KIT	POSITIVE	SPECIFIC	2	90	TARGET
EGFR	NEGATIVE				
COX-2	NEGATIVE				
ANDROGEN RECEPTOR	NEGATIVE				
CD52	NEGATIVE				
PDGFR	NEGATIVE	NON-SPECIFIC			
CD25	NEGATIVE				

100

110 108

* 2+ IHC IN GREATER THAN 30% OF THE TUMOR CELLS HAS BEEN CHOSEN AS A CONSERVATIVE DIVIDING POINT TO REPORT A POTENTIAL TARGET AS POSITIVE TO HELP INCREASE PHARMACOLOGIC EFFECTIVENESS.

114

IMMUNOHISTOCHEMICAL TESTS NOT PERFORMED

IL-2	TOPOISOMERASE I	MLH1
NF-KAPPA BETA	TOPOISOMERASE II	MSH2
THYMIDYLATE SYNTHASE	RETINOIC ACID RECEPTOR	CD20
ERCC3 (HELICASE)	RXR	P53
THYMIDINE PHOSPHORYLASE	ORNITHINE DECARBOXYLASE	CYCLIN D1
NGF	SOMATOSTATIN	BCL-2
MTAP	RAS (MUTATED)	VEGF
MAP KINASE PROTEIN	ASPARAGINE SYNTHETASE	
XANTHINE OXIDASE		

FIG.3B

MOLECULAR PROFILING INSTITUTE

PATIENT INFORMATION	PHYSICIAN INFORMATION
NAME: SAMPLE PATIENT SEX: FEMALE DOB: 6/1/1974 SSN#: 123-45-6789	SOME DOCTOR, M.D. 1234 E. SOUTH ST. TUCSON, AX 12345 480-123-4567

REPORT INFORMATION VER 1.6.2:4-25-06

DATE SPECIMEN RECEIVED: 02/01/2006 DATE REPORTED: 02/09/2006 CASE NO. MP-TN06-05040

DATE SPECIMEN COLLECTED AT HOST MEDICAL CENTER: 01/24/2006

SPECIAL STUDIES

MICROARRAY RESULTS

116 MICROARRAY ANALYSIS: 118 116 118 116 118 100

GENE	RATIO	EXPRESSION*	ANALYSIS
AR	0.02	UNDER EXPRESSED	
ESR1	0.09	UNDER EXPRESSED	
PGR	0.10	UNDER EXPRESSED	
VEGF	0.33	UNDER EXPRESSED	
KIT	0.51	UNDER EXPRESSED	
PDGFC	0.53	UNDER EXPRESSED	
RXRB	0.62	NO CHANGE	
TOP2B	0.62	UNDER EXPRESSED	
RAF1	0.68	NO CHANGE	
ERBB2	0.69	NO CHANGE	
ERCC3	0.71	NO CHANGE	
BCL2	0.71	NO CHANGE	
PDGFRB	0.78	NO CHANGE	
BCL2	0.80	NO CHANGE	
GSTP1	0.85	NO CHANGE	
SPARC	0.92	NO CHANGE	
HDAC1	0.95	NO CHANGE	
POLA	0.98	NO CHANGE	
MSH2	0.98	NO CHANGE	
CES2	1.05	NO CHANGE	
VEGF	1.09	NO CHANGE	
SSTR1	1.11	NO CHANGE	
PTEN	1.11	NO CHANGE	

GENE	RATIO	EXPRESSION*	ANALYSIS
EGFR	1.16	NO CHANGE	
OGFR	1.17	NO CHANGE	
MLH1	1.19	NO CHANGE	
VHL	1.22	NO CHANGE	
TNF	1.29	NO CHANGE	
RARA	1.38	NO CHANGE	
HSPCA	1.42	NO CHANGE	
TXNRD1	1.42	NO CHANGE	
ASNS	1.44	NO CHANGE	
DNMT1	1.51	OVER EXPRESSED	
NFKB2	1.74	NO CHANGE	
NFKBIA	1.78	OVER EXPRESSED	
PTGS2	1.81	NO CHANGE	
BRCA2	1.83	NO CHANGE	
GART	1.90	OVER EXPRESSED	
CDW52	2.15	OVER EXPRESSED	
ZAP70	2.18	NO CHANGE	
FOLR2	2.21	OVER EXPRESSED	
ZAP70	2.76	NO CHANGE	
TOP1	2.78	OVER EXPRESSED	
MS4A1	2.86	NO CHANGE	
ZAP70	2.86	NO CHANGE	
ZAP70	2.92	NO CHANGE	

GENE	RATIO	EXPRESSION*	ANALYSIS
ZAP70	3.00	NO CHANGE	
ZAP70	3.02	NO CHANGE	
CD33	3.05	OVER EXPRESSED	
ZAP70	3.06	NO CHANGE	
ZAP70	3.13	NO CHANGE	
ZAP70	3.18	NO CHANGE	
ZAP70	3.40	NO CHANGE	
CD33	3.52	OVER EXPRESSED	
HIF1A	3.84	OVER EXPRESSED	
HIF1A	3.85	OVER EXPRESSED	
HIF1A	3.88	OVER EXPRESSED	
HIF1A	3.90	OVER EXPRESSED	
HIF1A	3.90	OVER EXPRESSED	
HIF1A	3.91	OVER EXPRESSED	
HIF1A	3.94	OVER EXPRESSED	
HIF1A	3.97	OVER EXPRESSED	
HIF1A	4.01	OVER EXPRESSED	
HIF1A	4.03	OVER EXPRESSED	
PDGFRA	4.74	OVER EXPRESSED	
TK1	4.94	OVER EXPRESSED	
IL2RA	5.07	NO CHANGE	
ADA	5.26	OVER EXPRESSED	
TOP2A	9.34	NO CHANGE	
TYMS	22.95	OVER EXPRESSED	
VDR	37.30	OVER EXPRESSED	

*"NO CHANGE" INDICATES THAT THERE IS NO DIFFERENCE IN EXPRESSION FOR THIS GENE BETWEEN THE TUMOR AND CONTROL TISSUES AT A SIGNIFICANCE LEVEL OF P<=0.001. A SIGNIFICANCE LEVEL OF P<=0.001 HAS BEEN CHOSEN SINCE GENES PASSING THIS THRESHOLD CAN BE VALIDATED AS DIFFERENTIALLY EXPRESSED BY ALTERNATIVE METHODS APPROXIMATELY 95% OF THE TIME.

FIG.3C

100

PATIENT: SAMPLE PATIENT CASE NO. MP-TN06-05040 DATE REPORTED: 2/9/2006

CLINICAL INFORMATION

CLINICAL HISTORY

120 THE PATIENT WAS DIAGNOSED WITH INFLAMATORY MYOFIBROBLASTIC TUMOR IN FEB, 2004. AT THAT TIME A LARGE MASS WAS REMOVED FROM HER ABDOMEN. THE PATIENT NOW HAS RECURRENT MASSES ON HER LEFT UPPER QUADRANT AND IN THE PELVIS. PER THE PATIENT CHART, DR SOME REVIEWED THIS CASE WITH DR VON HOFF AND IT WAS AGREED THAT PERFORMING DNA MICROARRAY AND IHC TESTING ON THIS PATIENT MAY PROVIDE INSIGHT INTO FURTHER TREATMENT OPTIONS.

SPECIMENS SUBMITTED

122 RECEIVED FROM MAIN HOSPITAL, TUCSON, AZ, ONE PARAFFIN BLOCK LABELED M01-123 AND FROZEN TISSUE WITH THE ACCOMPANYING SURGICAL PATHOLOGY REPORT.

DISCLAIMER

THESE TESTS WERE DEVELOPED BY MOLECULAR PROFILING AND THEIR PERFORMANCE CHARACTERISTICS DETERMINED BY MOLECULAR PROFILING. IT HAS NOT BEEN CLEARED OR APPROVED BY THE U.S. FOOD AND DRUG ADMINISTRATION (FDA). THESE TESTS ARE PERMITTED FOR CLINICAL PURPOSES AND SHOULD NOT BE REGARDED AS PURELY INVESTIGATIONAL OR FOR RESEARCH. MOLECULAR PROFILING IS CERTIFIED UNDER THE CLINICAL LABORATORY IMPROVEMENT AMENDMENTS OF 1988 (CLIA) AS QUALIFIED TO PERFORM HIGH-COMPLEXITY CLINICAL TESTING.

DECISIONS REGARDING CARE AND TREATMENT SHOULD NOT BE BASED ON A SINGLE TEST SUCH AS THIS TEST. RATHER DECISIONS ON CARE AND TREATMENT SHOULD BE BASED ON THE INDEPENDENT MEDICAL JUDGMENT OF THE TREATING PHYSICIAN TAKING INTO CONSIDERATION ALL AVAILABLE INFORMATION CONCERNING THE PATIENT'S CONDITION, INCLUDING OTHER LABORATORY TESTS, IN ACCORDANCE WITH THE STANDARD OF CARE IN A GIVEN COMMUNITY.

THE FINDING OF A TARGET DOES NOT NECESSARILY INDICATE PHARMACOLOGIC EFFECTIVENESS.

ROBERT J. PENNY, MD, PHD, PATHOLOGIST AND MEDICAL DIRECTOR — 2/9/2006 DATE

FIG.3D

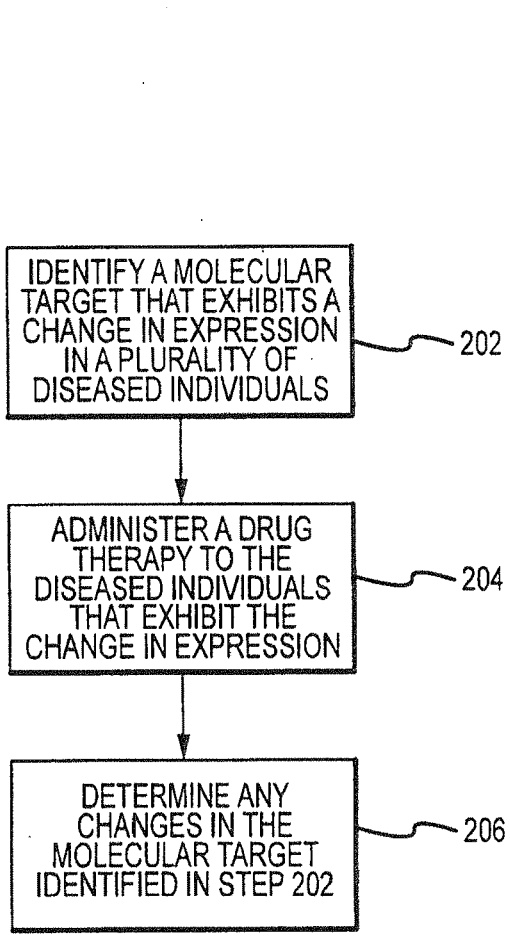

200
IDENTIFY A MOLECULAR TARGET THAT EXHIBITS A CHANGE IN EXPRESSION IN A PLURALITY OF DISEASED INDIVIDUALS
202
ADMINISTER A DRUG THERAPY TO THE DISEASED INDIVIDUALS THAT EXHIBIT THE CHANGE IN EXPRESSION
204
DETERMINE ANY CHANGES IN THE MOLECULAR TARGET IDENTIFIED IN STEP 202
206

FIG.4

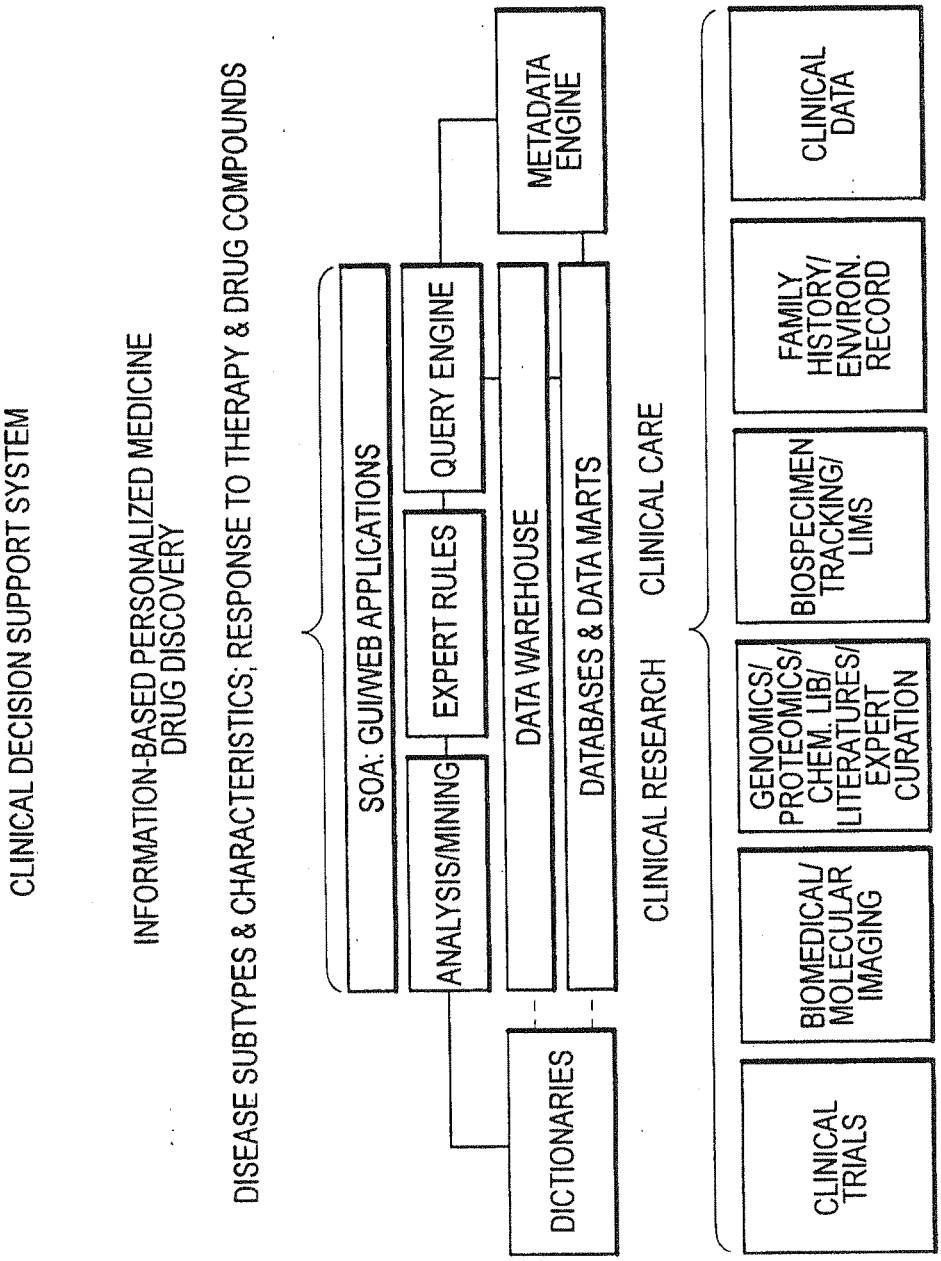

CLINICAL DECISION SUPPORT SYSTEM
INFORMATION-BASED PERSONALIZED MEDICINE
DRUG DISCOVERY
DISEASE SUBTYPES & CHARACTERISTICS; RESPONSE TO THERAPY & DRUG COMPOUNDS
SOA: GUI/WEB APPLICATIONS
ANALYSIS/MINING
EXPERT RULES
QUERY ENGINE
METADATA ENGINE
DATA WAREHOUSE
DATABASES & DATA MARTS
DICTIONARIES
CLINICAL RESEARCH
CLINICAL CARE
CLINICAL TRIALS
BIOMEDICAL/ MOLECULAR IMAGING
GENOMICS/ PROTEOMICS/ CHEM. LIB/ LITERATURES/ EXPERT CURATION
BIOSPECIMEN TRACKING/ LIMS
FAMILY HISTORY/ ENVIRON. RECORD
CLINICAL DATA

FIG.5

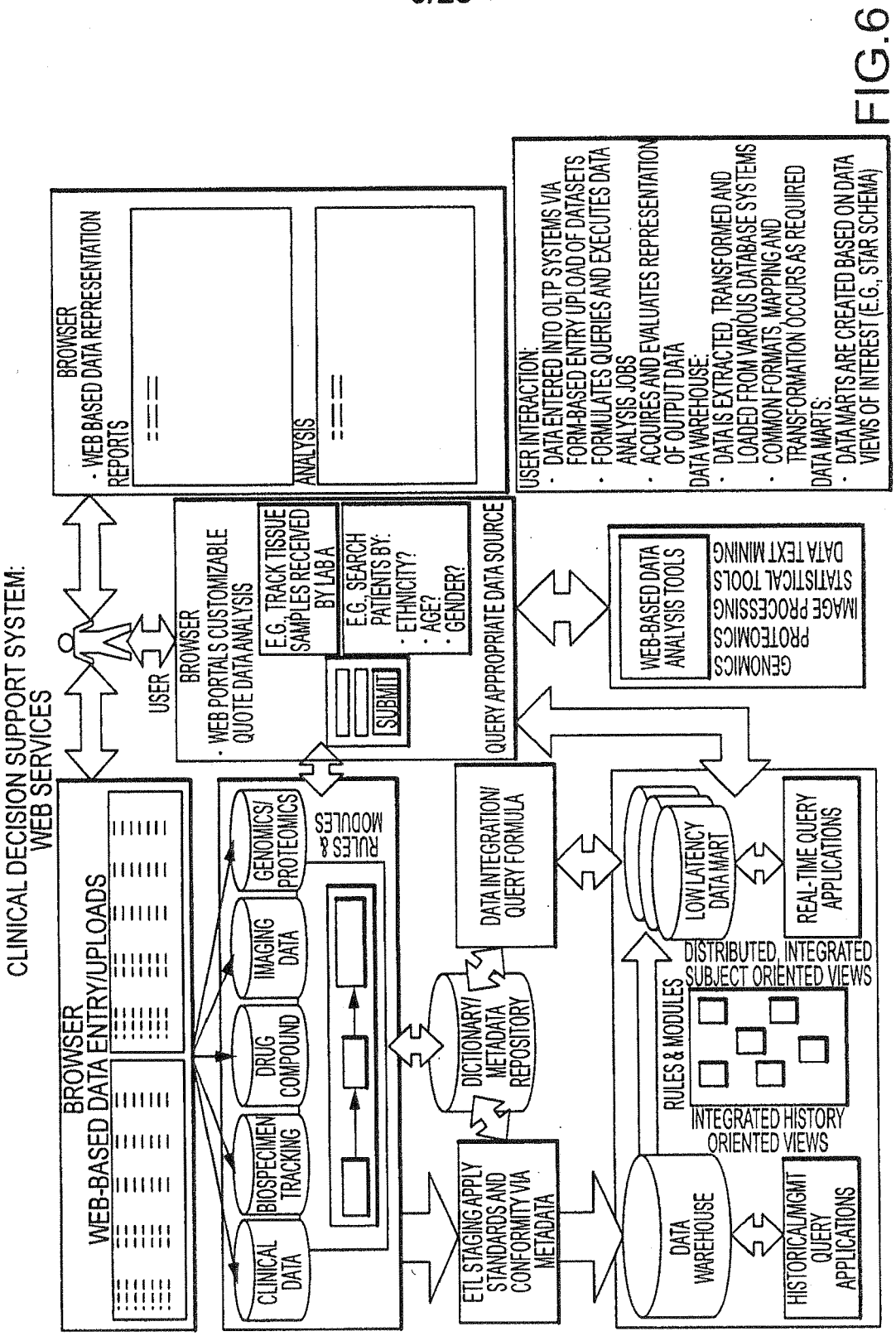

CLINICAL DECISION SUPPORT SYSTEM:
WEB SERVICES
BROWSER
WEB-BASED DATA ENTRY/UPLOADS
USER
BROWSER
· WEB PORTALS CUSTOMIZABLE QUOTE DATA ANALYSIS
E.G., TRACK TISSUE SAMPLES RECEIVED BY LAB A
E.G., SEARCH PATIENTS BY:
· ETHNICITY?
· AGE?
· GENDER?
SUBMIT
QUERY APPROPRIATE DATA SOURCE
BROWSER
· WEB BASED DATA REPRESENTATION
REPORTS
ANALYSIS
USER INTERACTION:
· DATA ENTERED INTO OLTP SYSTEMS VIA FORM-BASED ENTRY UPLOAD OF DATASETS
· FORMULATES QUERIES AND EXECUTES DATA ANALYSIS JOBS
· ACQUIRES AND EVALUATES REPRESENTATION OF OUTPUT DATA
DATA WAREHOUSE:
· DATA IS EXTRACTED, TRANSFORMED AND LOADED FROM VARIOUS DATABASE SYSTEMS
· COMMON FORMATS, MAPPING AND TRANSFORMATION OCCURS AS REQUIRED
DATA MARTS:
· DATA MARTS ARE CREATED BASED ON DATA VIEWS OF INTEREST (E.G., STAR SCHEMA)
WEB-BASED DATA ANALYSIS TOOLS
GENOMICS
PROTEOMICS
IMAGE PROCESSING
STATISTICAL TOOLS
DATA TEXT MINING
RULES & MODULES
GENOMICS/ PROTEOMICS
IMAGING DATA
DRUG COMPOUND
BIOSPECIMEN TRACKING
CLINICAL DATA
DATA INTEGRATION/ QUERY FORMULA
DICTIONARY/ METADATA REPOSITORY
ETL STAGING APPLY STANDARDS AND CONFORMITY VIA METADATA
LOW LATENCY DATA MART
REAL-TIME QUERY APPLICATIONS
DISTRIBUTED, INTEGRATED SUBJECT ORIENTED VIEWS
RULES & MODULES
INTEGRATED HISTORY ORIENTED VIEWS
DATA WAREHOUSE
HISTORICAL/MGMT QUERY APPLICATIONS

FIG.6

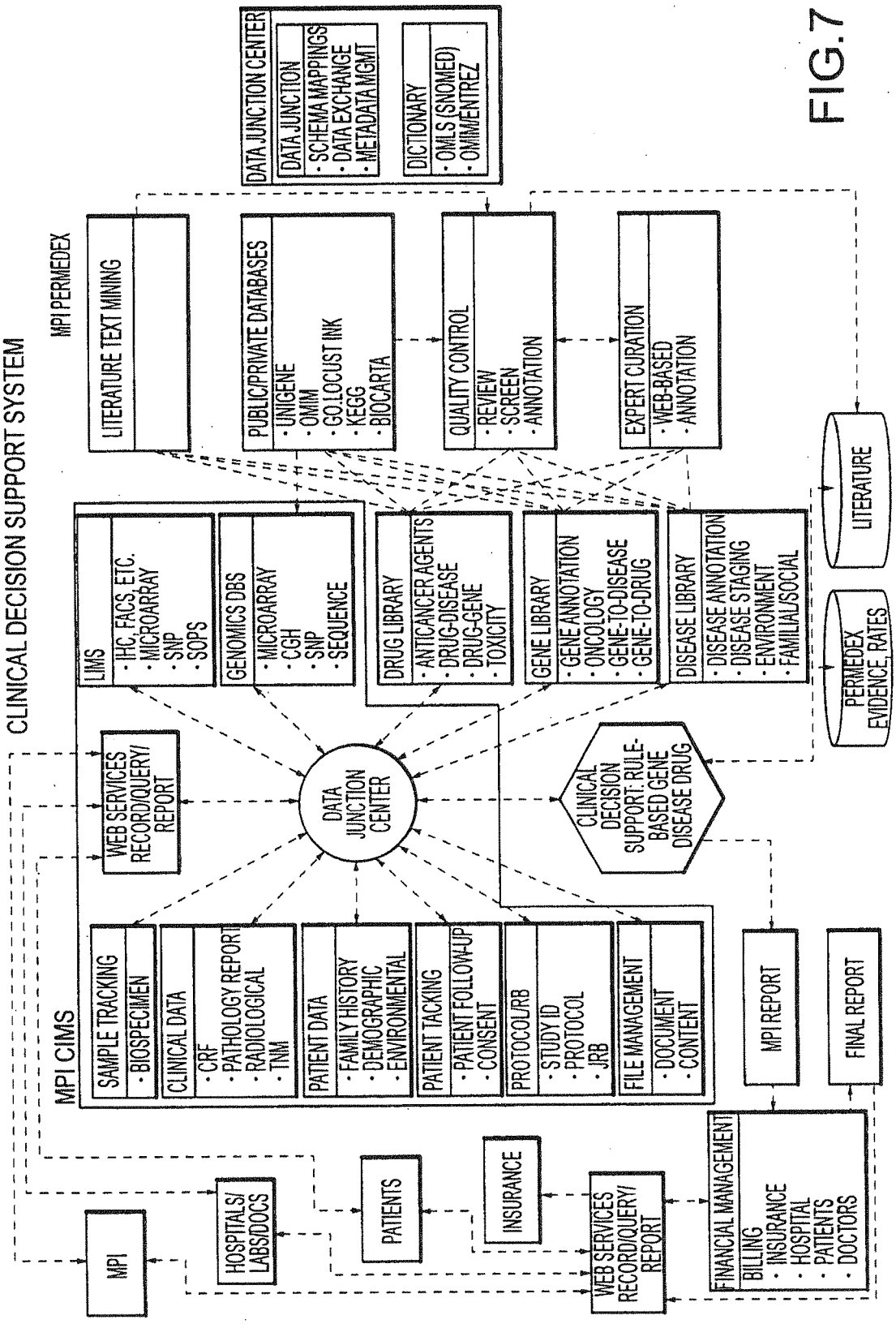

CLINICAL DECISION SUPPORT SYSTEM
MPI PERMEDEX
MPI CIMS
DATA JUNCTION CENTER
DATA JUNCTION
· SCHEMA MAPPINGS
· DATA EXCHANGE
· METADATA MGMT
DICTIONARY
· OMLS (SNOMED)
· OMIM/ENTREZ
LITERATURE TEXT MINING
PUBLIC/PRIVATE DATABASES
· UNIGENE
· OMIM
· GO,LOCUST INK
· KEGG
· BIOCARTA
QUALITY CONTROL
· REVIEW
· SCREEN
· ANNOTATION
EXPERT CURATION
· WEB-BASED
· ANNOTATION
LITERATURE
PERMEDEX EVIDENCE, RATES
LIMS
· IHC, FACS, ETC.
· MICROARRAY
· SNP
· SOPS
GENOMICS DBS
· MICROARRAY
· CGH
· SNP
· SEQUENCE
DRUG LIBRARY
· ANTICANCER AGENTS
· DRUG-DISEASE
· DRUG-GENE
· TOXICITY
GENE LIBRARY
· GENE ANNOTATION
· ONCOLOGY
· GENE-TO-DISEASE
· GENE-TO-DRUG
DISEASE LIBRARY
· DISEASE ANNOTATION
· DISEASE STAGING
· ENVIRONMENT
· FAMILIAL/SOCIAL
WEB SERVICES RECORD/QUERY/ REPORT
DATA JUNCTION CENTER
CLINICAL DECISION SUPPORT: RULE-BASED GENE DISEASE DRUG
SAMPLE TRACKING
· BIOSPECIMEN
CLINICAL DATA
· CRF
· PATHOLOGY REPORT
· RADIOLOGICAL
· TNM
PATIENT DATA
· FAMILY HISTORY
· DEMOGRAPHIC
· ENVIRONMENTAL
PATIENT TACKING
· PATIENT FOLLOW-UP
· CONSENT
PROTOCOL/RB
· STUDY ID
· PROTOCOL
· JRB
FILE MANAGEMENT
· DOCUMENT
· CONTENT
MPI REPORT
FINAL REPORT
MPI
HOSPITALS/ LABS/DOCS
PATIENTS
INSURANCE
WEB SERVICES RECORD/QUERY/ REPORT
FINANCIAL MANAGEMENT
BILLING
· INSURANCE
· HOSPITAL
· PATIENTS
· DOCTORS

FIG.7

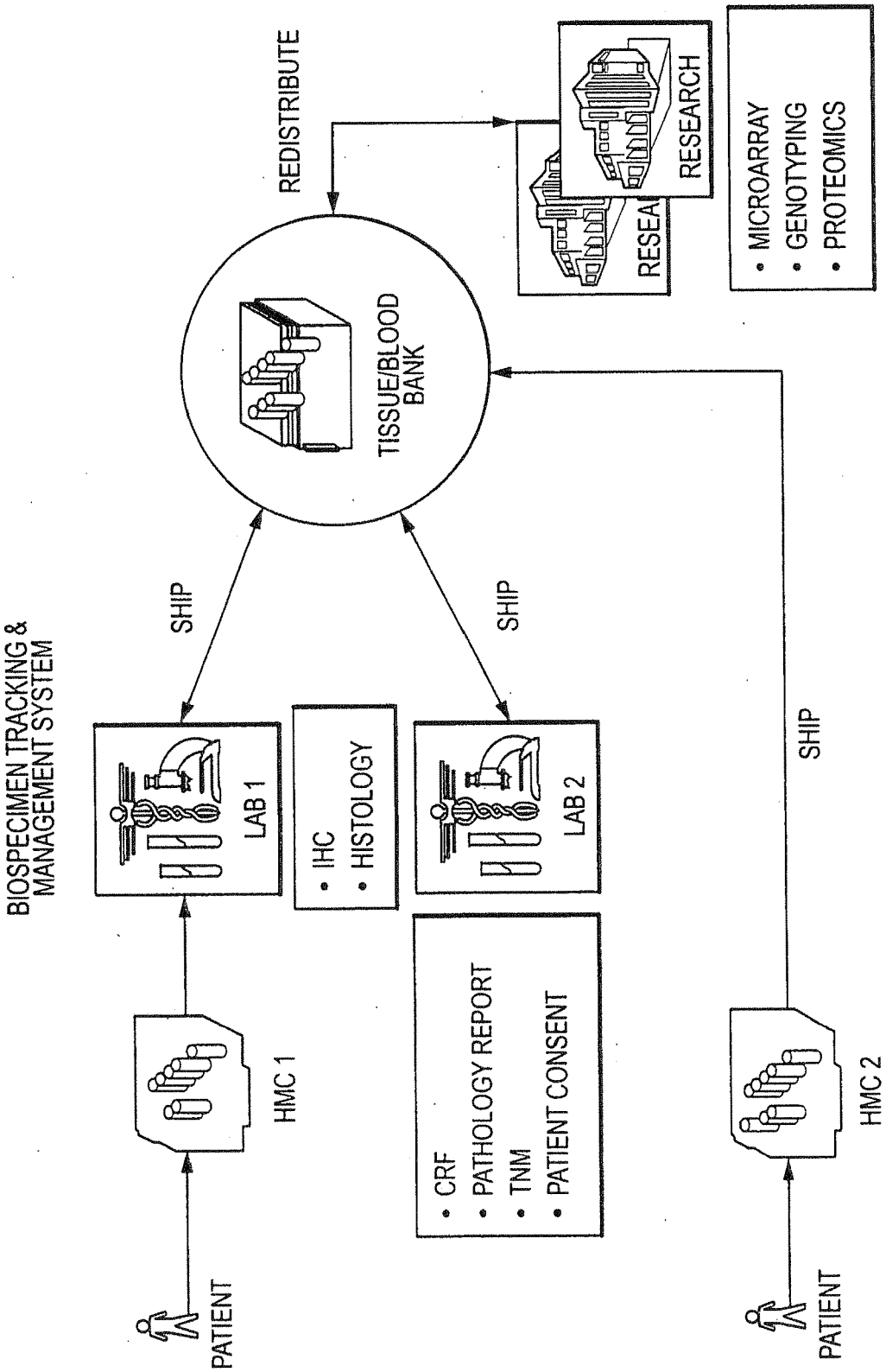

BIOSPECIMEN TRACKING & MANAGEMENT SYSTEM
REDISTRIBUTE
TISSUE/BLOOD BANK
RESEARCH
RESEA
• MICROARRAY
• GENOTYPING
• PROTEOMICS
SHIP
SHIP
SHIP
LAB 1
• IHC
• HISTOLOGY
LAB 2
• CRF
• PATHOLOGY REPORT
• TNM
• PATIENT CONSENT
HMC 1
HMC 2
PATIENT
PATIENT

FIG.8

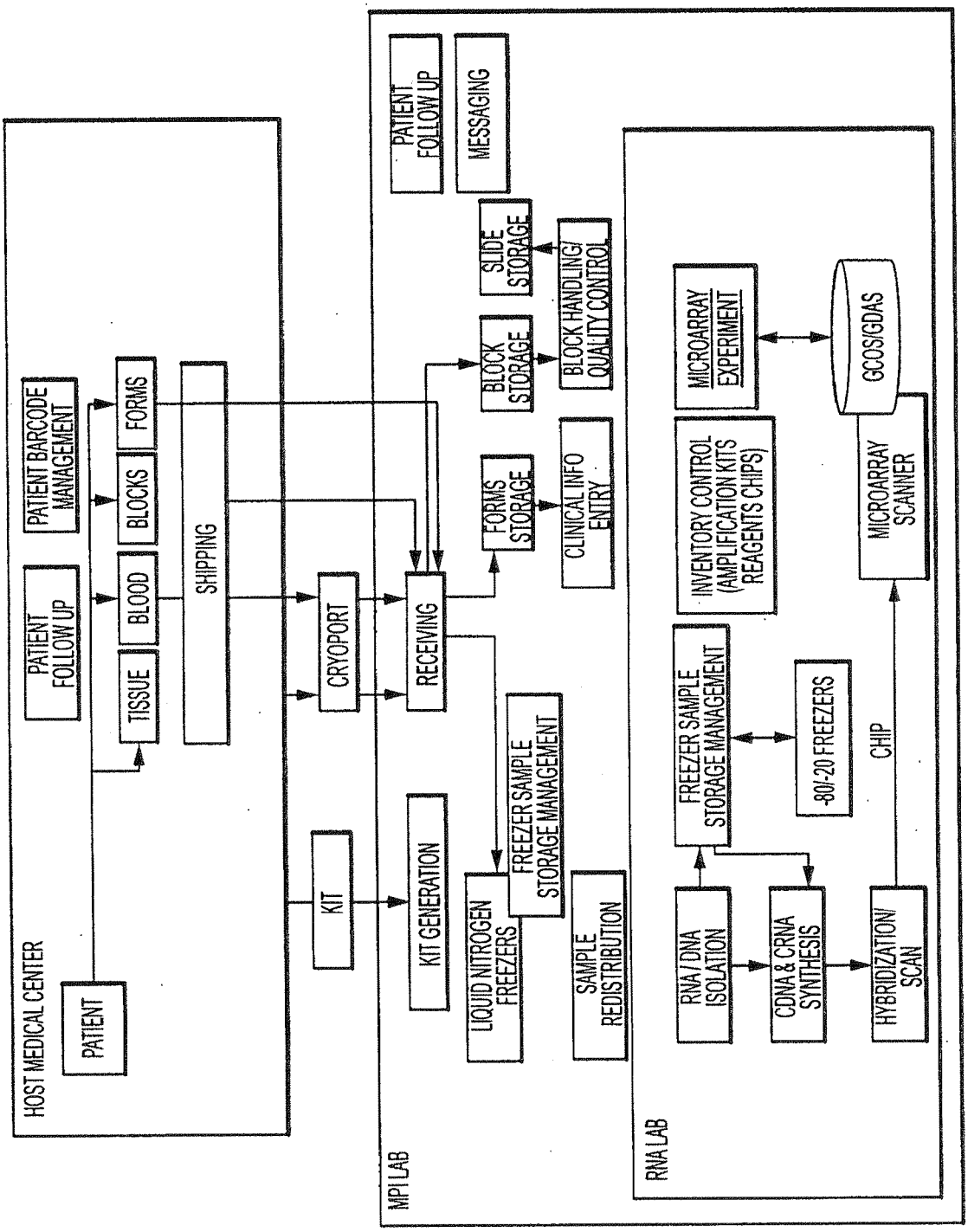

HOST MEDICAL CENTER
PATIENT
PATIENT FOLLOW UP
PATIENT BARCODE MANAGEMENT
TISSUE
BLOOD
BLOCKS
FORMS
SHIPPING
KIT
CRYOPORT
RECEIVING
KIT GENERATION
LIQUID NITROGEN FREEZERS
FREEZER SAMPLE STORAGE MANAGEMENT
SAMPLE REDISTRIBUTION
FORMS STORAGE
CLINICAL INFO ENTRY
BLOCK STORAGE
BLOCK HANDLING/ QUALITY CONTROL
SLIDE STORAGE
PATIENT FOLLOW UP
MESSAGING
MPI LAB
RNA LAB
RNA / DNA ISOLATION
CDNA & CRNA SYNTHESIS
HYBRIDIZATION/ SCAN
FREEZER SAMPLE STORAGE MANAGEMENT
-80/-20 FREEZERS
CHIP
INVENTORY CONTROL (AMPLIFICATION KITS REAGENTS CHIPS)
MICROARRAY EXPERIMENT
MICROARRAY SCANNER
GCOS/GDAS

FIG.9

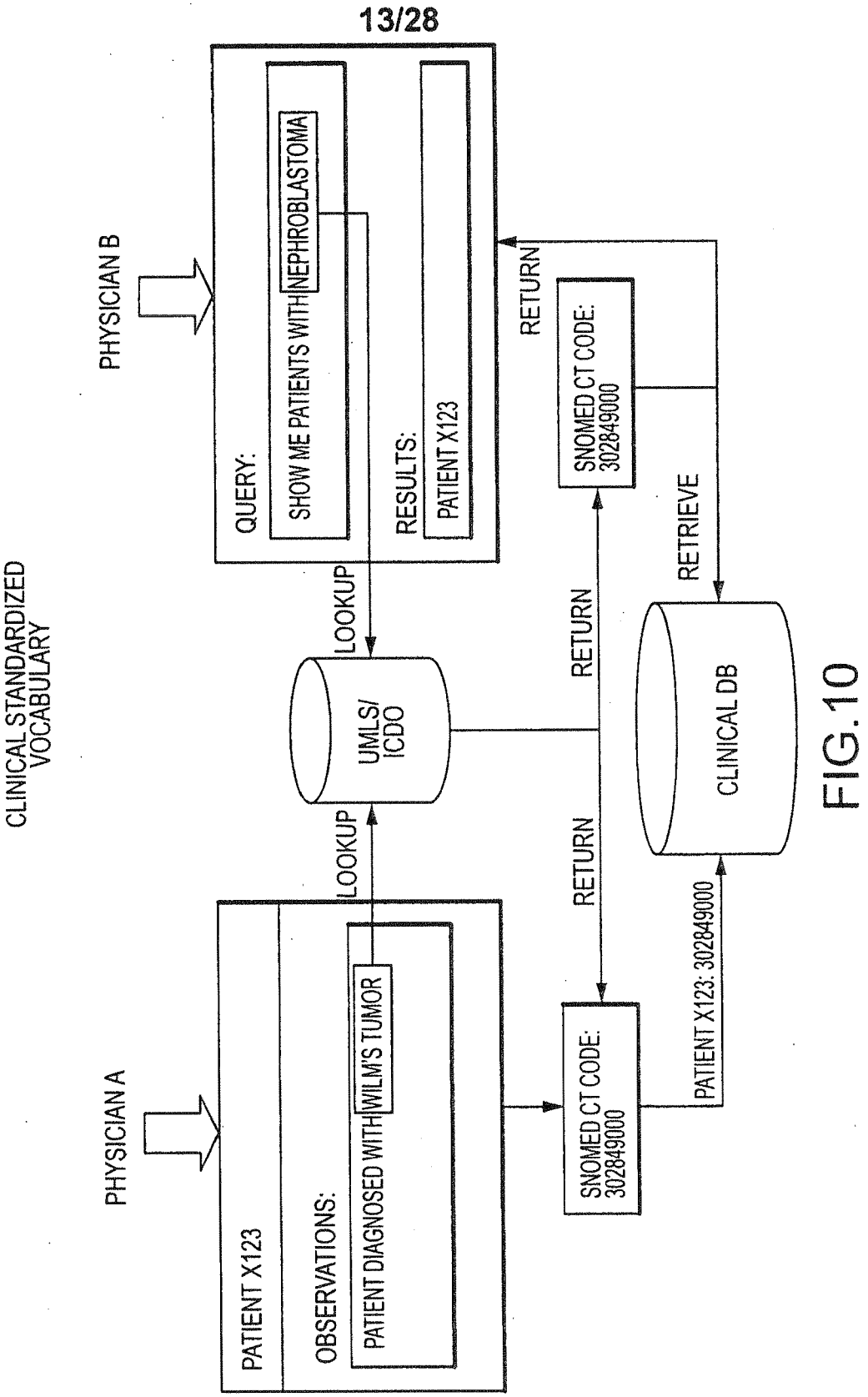

CLINICAL STANDARDIZED VOCABULARY
PHYSICIAN B
QUERY:
SHOW ME PATIENTS WITH NEPHROBLASTOMA
RESULTS:
PATIENT X123
RETURN
SNOMED CT CODE: 302849000
RETRIEVE
LOOKUP
UMLS/ ICDO
RETURN
CLINICAL DB
PHYSICIAN A
PATIENT X123
OBSERVATIONS:
PATIENT DIAGNOSED WITH WILM'S TUMOR
LOOKUP
RETURN
SNOMED CT CODE: 302849000
PATIENT X123: 302849000

FIG.10

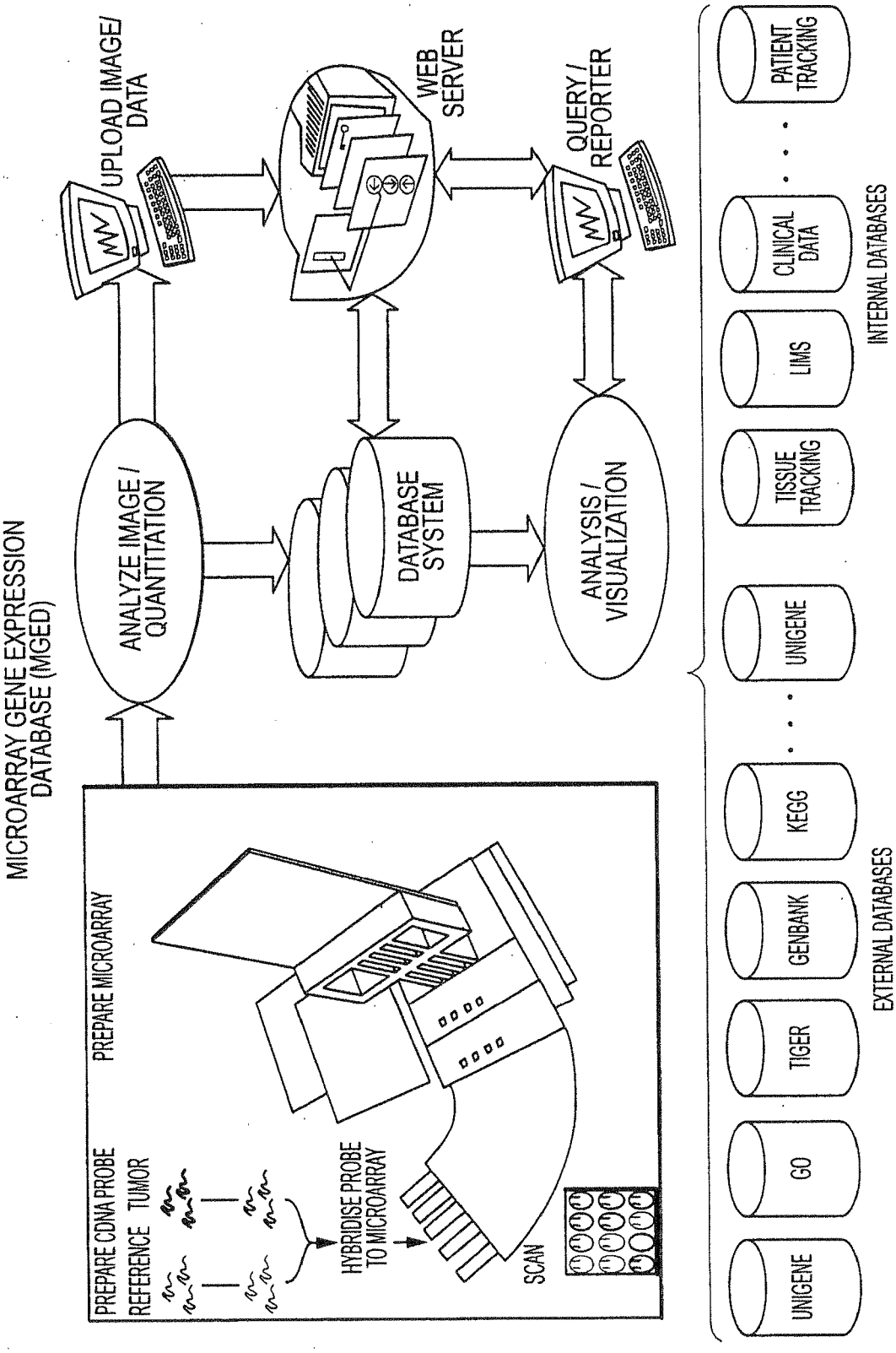

MICROARRAY GENE EXPRESSION DATABASE (MGED)
UPLOAD IMAGE/ DATA
WEB SERVER
QUERY / REPORTER
ANALYZE IMAGE / QUANTITATION
DATABASE SYSTEM
ANALYSIS / VISUALIZATION
PREPARE MICROARRAY
PREPARE CDNA PROBE
REFERENCE TUMOR
HYBRIDISE PROBE TO MICROARRAY
SCAN
UNIGENE
GO
TIGER
GENBANK
KEGG
UNIGENE
TISSUE TRACKING
LIMS
CLINICAL DATA
PATIENT TRACKING
EXTERNAL DATABASES
INTERNAL DATABASES

FIG.11

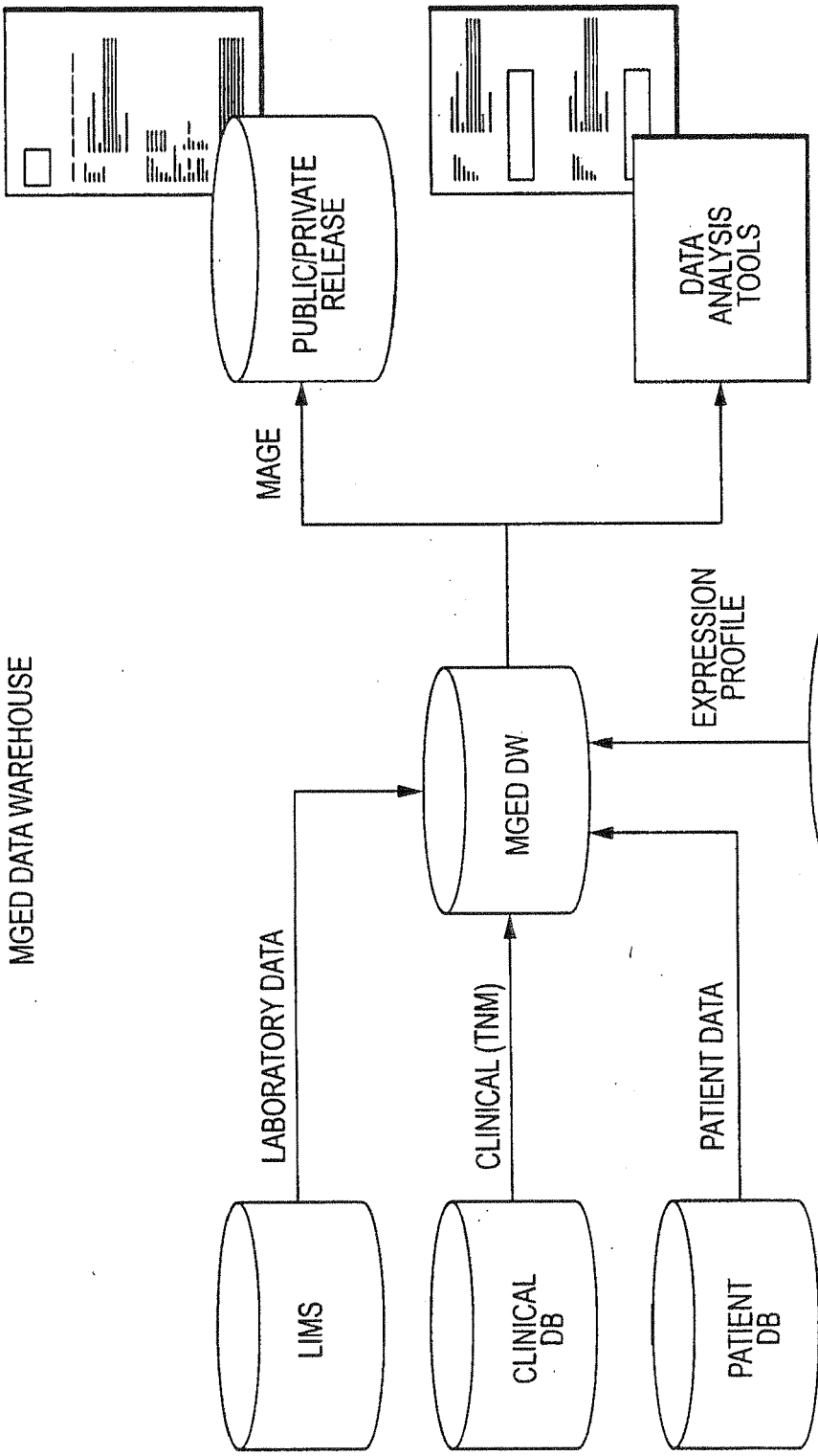

MGED DATA WAREHOUSE
PUBLIC/PRIVATE RELEASE
DATA ANALYSIS TOOLS
MAGE
EXPRESSION PROFILE
SCANNER
MGED DW
LABORATORY DATA
CLINICAL (TNM)
PATIENT DATA
LIMS
CLINICAL DB
PATIENT DB

FIG.12

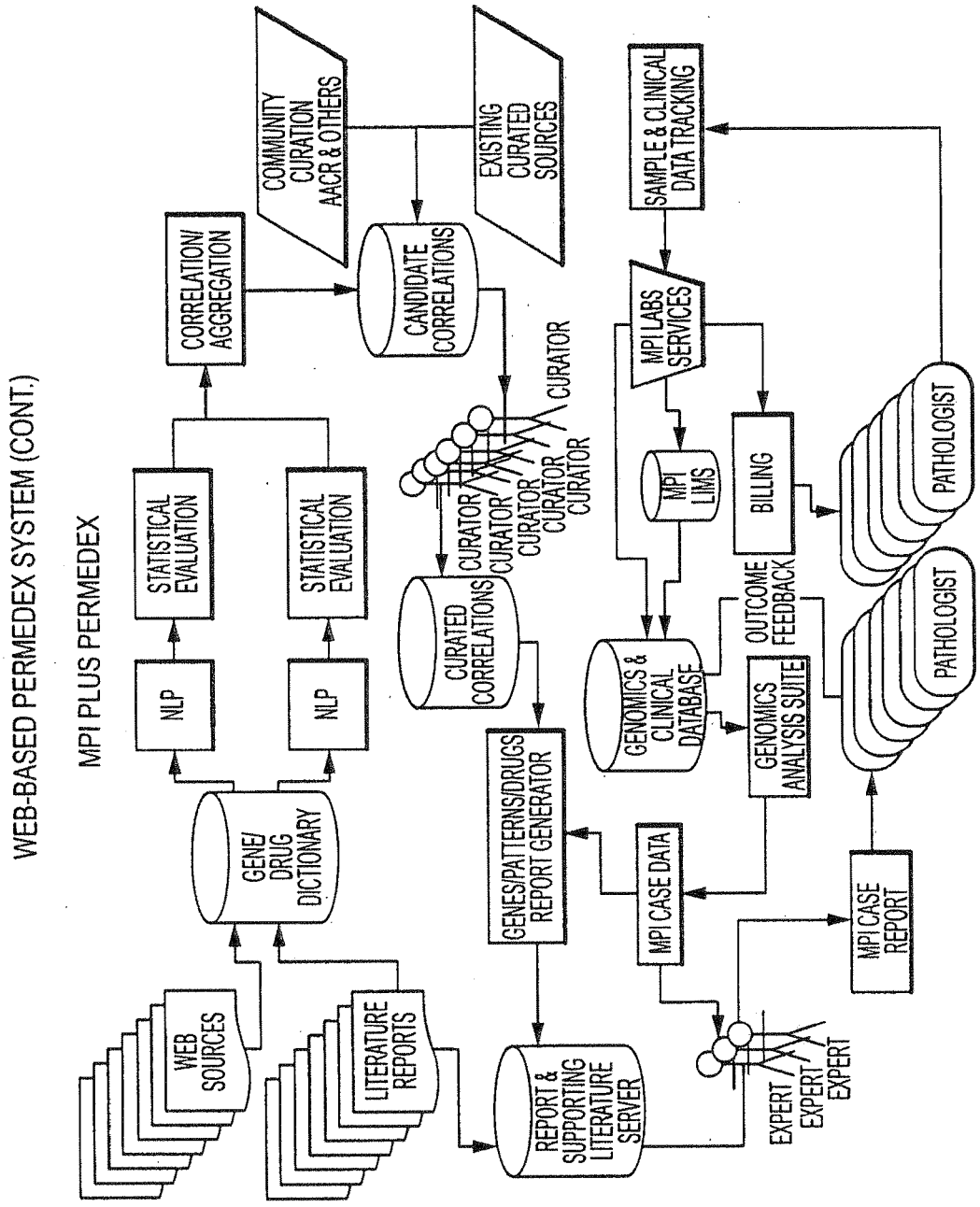

WEB-BASED PERMEDEX SYSTEM (CONT.)
MPI PLUS PERMEDEX
WEB SOURCES
LITERATURE REPORTS
GENE/ DRUG DICTIONARY
NLP
NLP
STATISTICAL EVALUATION
STATISTICAL EVALUATION
CORRELATION/ AGGREGATION
COMMUNITY CURATION AACR & OTHERS
EXISTING CURATED SOURCES
CANDIDATE CORRELATIONS
CURATOR
CURATED CORRELATIONS
GENES/PATTERNS/DRUGS REPORT GENERATOR
REPORT & SUPPORTING LITERATURE SERVER
SAMPLE & CLINICAL DATA TRACKING
MPI LABS SERVICES
MPI LIMS
BILLING
GENOMICS & CLINICAL DATABASE
GENOMICS ANALYSIS SUITE
OUTCOME FEEDBACK
MPI CASE DATA
MPI CASE REPORT
EXPERT
PATHOLOGIST

FIG.13

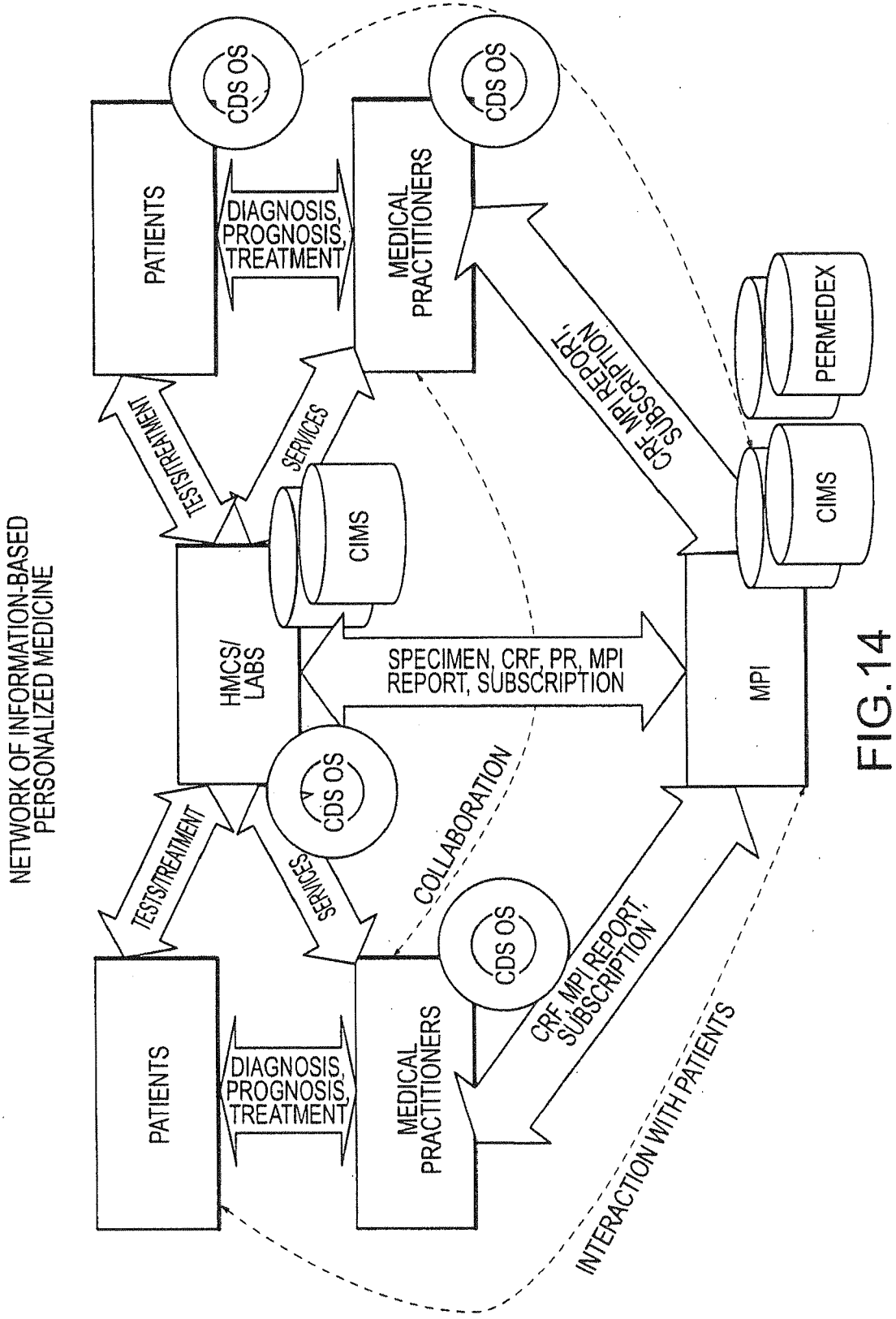

NETWORK OF INFORMATION-BASED PERSONALIZED MEDICINE
CDS OS
CDS OS
PATIENTS
DIAGNOSIS, PROGNOSIS, TREATMENT
MEDICAL PRACTITIONERS
TESTS/TREATMENT
SERVICES
CRF, SUBSCRIPTION, REPORT
PERMEDEX
CIMS
CIMS
HMCS/ LABS
SPECIMEN, CRF, PR, MPI REPORT, SUBSCRIPTION
MPI
CDS OS
TESTS/TREATMENT
SERVICES
COLLABORATION
CDS OS
CRF, MPI REPORT, SUBSCRIPTION
PATIENTS
DIAGNOSIS, PROGNOSIS, TREATMENT
MEDICAL PRACTITIONERS
INTERACTION WITH PATIENTS

FIG. 14

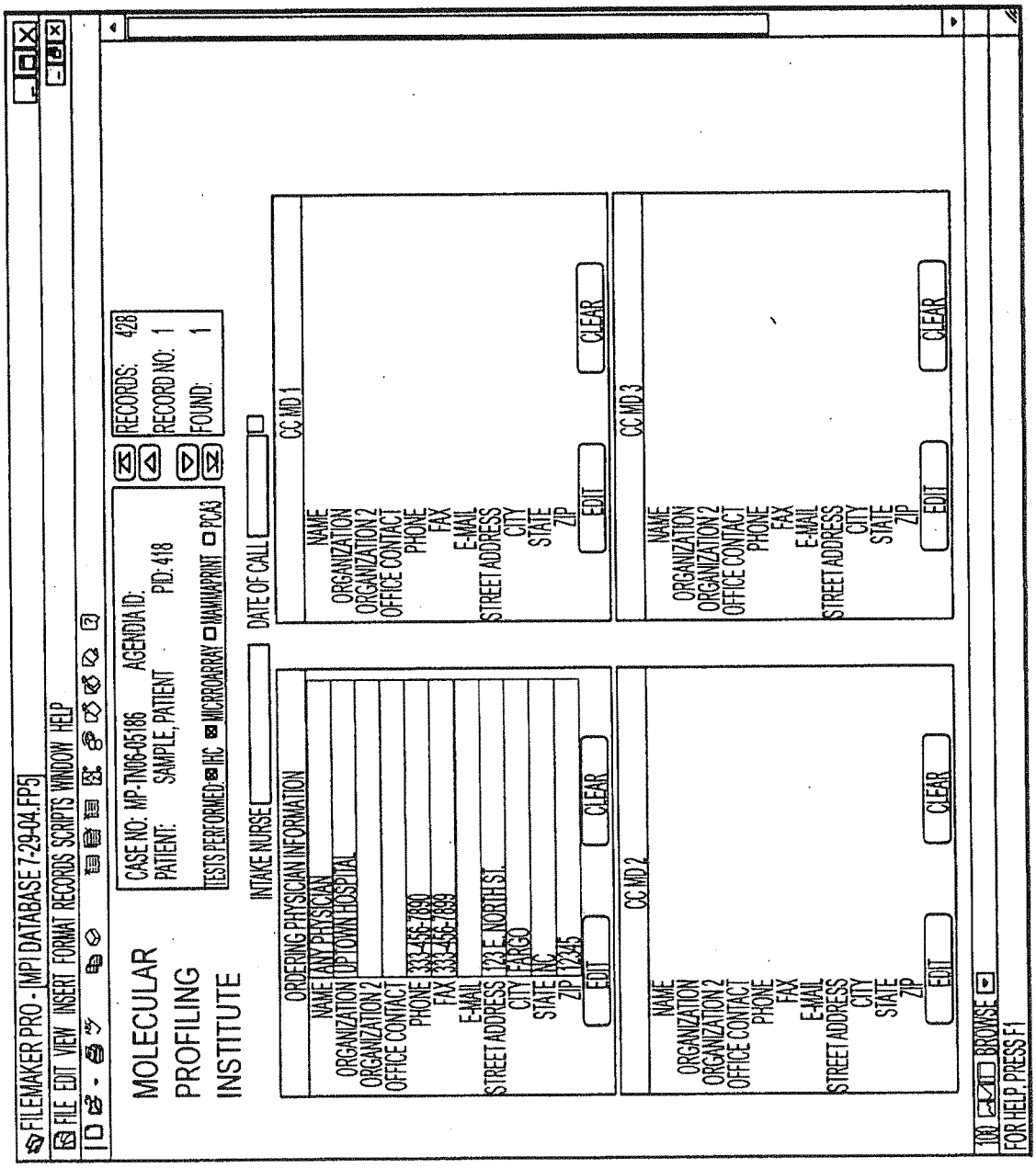

FILEMAKER PRO - IMPI DATABASE 7-29-04.FP5
FILE EDIT VIEW INSERT FORMAT RECORDS SCRIPTS WINDOW HELP
MOLECULAR PROFILING INSTITUTE
CASE NO: MP-TN06-05186 AGENDA ID:
PATIENT: SAMPLE, PATIENT PID: 418
TESTS PERFORMED: IHC MICRORARRAY MAMMAPRINT PCR3
RECORDS: 428
RECORD NO: 1
FOUND: 1
INTAKE NURSE
DATE OF CALL
ORDERING PHYSICIAN INFORMATION
NAME ANY PHYSICIAN
ORGANIZATION UPTOWN HOSPITAL
ORGANIZATION 2
OFFICE CONTACT
PHONE 333-456-7890
FAX 333-456-7899
E-MAIL
STREET ADDRESS 123 E. NORTH ST.
CITY FARGO
STATE ND
ZIP 12345
EDIT
CLEAR
CC MD 1
NAME
ORGANIZATION
ORGANIZATION 2
OFFICE CONTACT
PHONE
FAX
E-MAIL
STREET ADDRESS
CITY
STATE
ZIP
EDIT
CLEAR
CC MD 2
NAME
ORGANIZATION
ORGANIZATION 2
OFFICE CONTACT
PHONE
FAX
E-MAIL
STREET ADDRESS
CITY
STATE
ZIP
EDIT
CLEAR
CC MD 3
NAME
ORGANIZATION
ORGANIZATION 2
OFFICE CONTACT
PHONE
FAX
E-MAIL
STREET ADDRESS
CITY
STATE
ZIP
EDIT
CLEAR
100% BROWSE
FOR HELP, PRESS F1

FIG.15

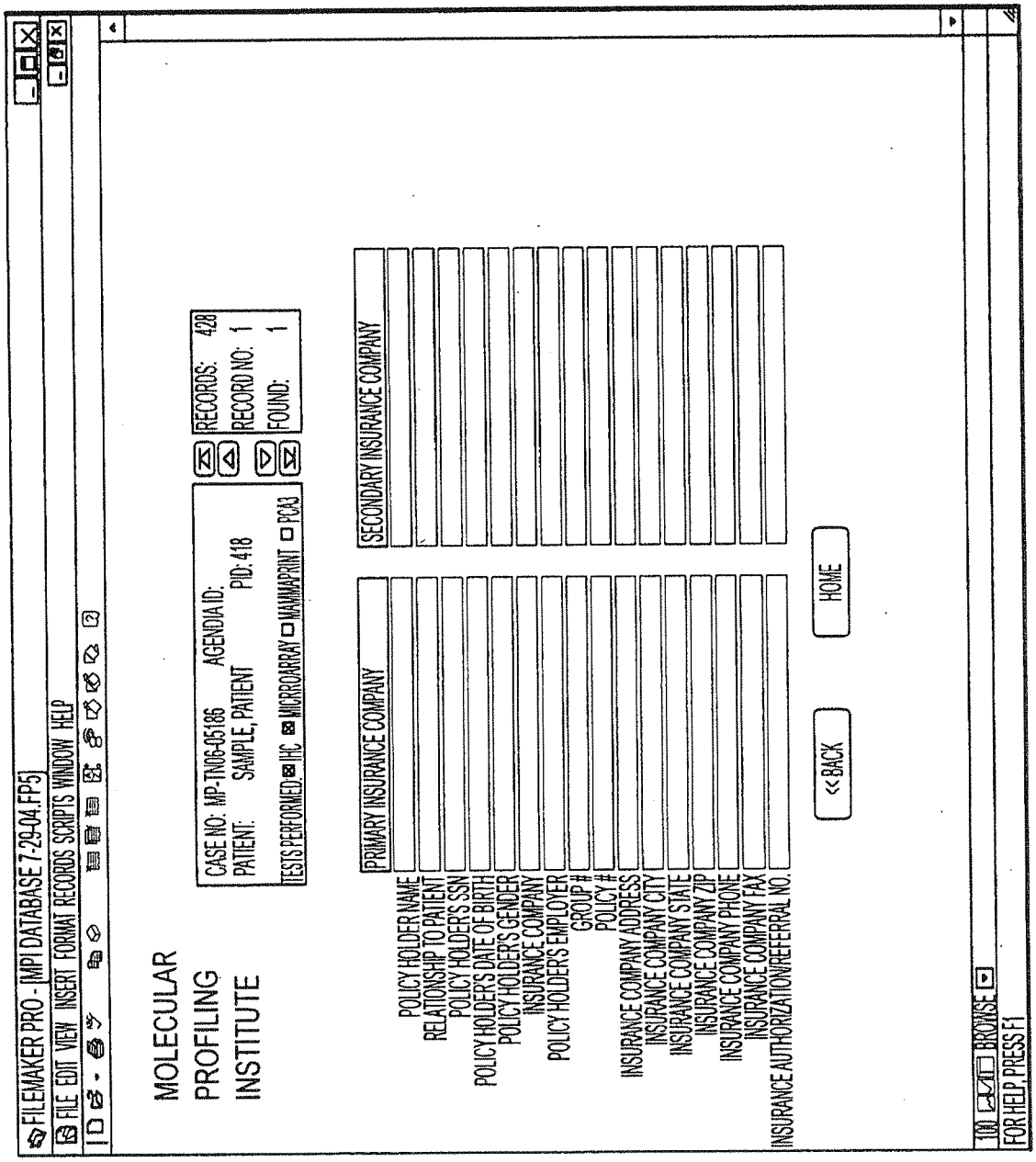

FILEMAKER PRO - IMPI DATABASE 7-29-04.FP5
FILE EDIT VIEW INSERT FORMAT RECORDS SCRIPTS WINDOW HELP
MOLECULAR PROFILING INSTITUTE
CASE NO: MP-TN06-05186 AGENDA ID:
PATIENT: SAMPLE, PATIENT PID: 418
TESTS PERFORMED IHC MICROARRAY MAMMAPRINT PCR3
RECORDS: 428
RECORD NO: 1
FOUND: 1
PRIMARY INSURANCE COMPANY
SECONDARY INSURANCE COMPANY
POLICY HOLDER NAME
RELATIONSHIP TO PATIENT
POLICY HOLDER'S SSN
POLICY HOLDER'S DATE OF BIRTH
POLICY HOLDER'S GENDER
INSURANCE COMPANY
POLICY HOLDER'S EMPLOYER
GROUP #
POLICY #
INSURANCE COMPANY ADDRESS
INSURANCE COMPANY CITY
INSURANCE COMPANY STATE
INSURANCE COMPANY ZIP
INSURANCE COMPANY PHONE
INSURANCE COMPANY FAX
INSURANCE AUTHORIZATION/REFERRAL NO.
<< BACK
HOME
100 BROWSE
FOR HELP, PRESS F1

FIG.16

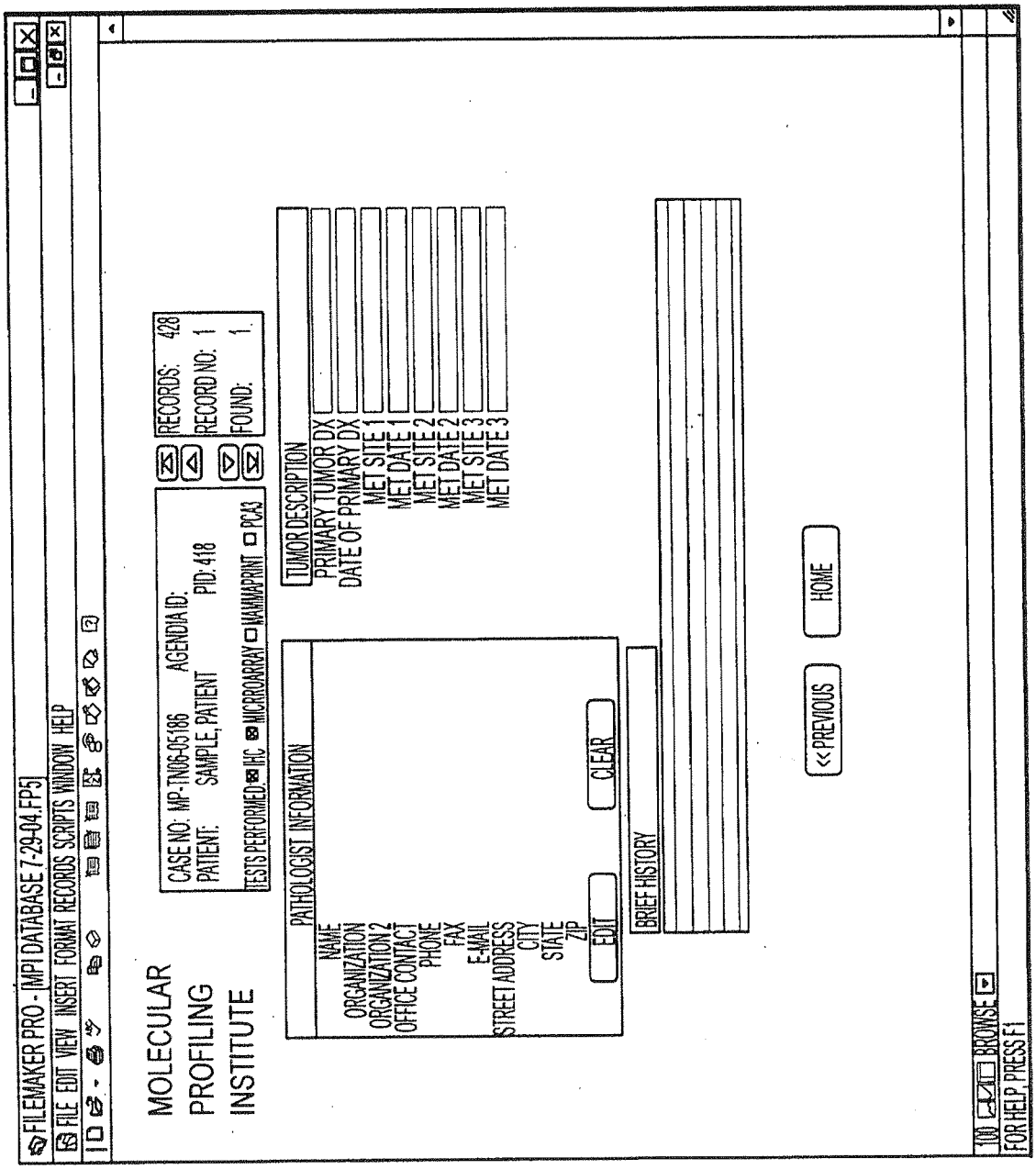

FILEMAKER PRO - IMPI DATABASE 7-29-04.FP5
FILE EDIT VIEW INSERT FORMAT RECORDS SCRIPTS WINDOW HELP
MOLECULAR PROFILING INSTITUTE
CASE NO: MP-TN06-05186 AGENDA ID:
PATIENT: SAMPLE, PATIENT PID: 418
TESTS PERFORMED IHC MICROARRAY WAMMAPRINT PCA3
RECORDS: 428
RECORD NO: 1
FOUND: 1
PATHOLOGIST INFORMATION
NAME
ORGANIZATION
ORGANIZATION 2
OFFICE CONTACT
PHONE
FAX
E-MAIL
STREET ADDRESS
CITY
STATE
ZIP
EDIT
CLEAR
TUMOR DESCRIPTION
PRIMARY TUMOR DX
DATE OF PRIMARY DX
MET SITE 1
MET DATE 1
MET SITE 2
MET DATE 2
MET SITE 3
MET DATE 3
BRIEF HISTORY
<< PREVIOUS
HOME
100
BROWSE
FOR HELP, PRESS F1

FIG.17

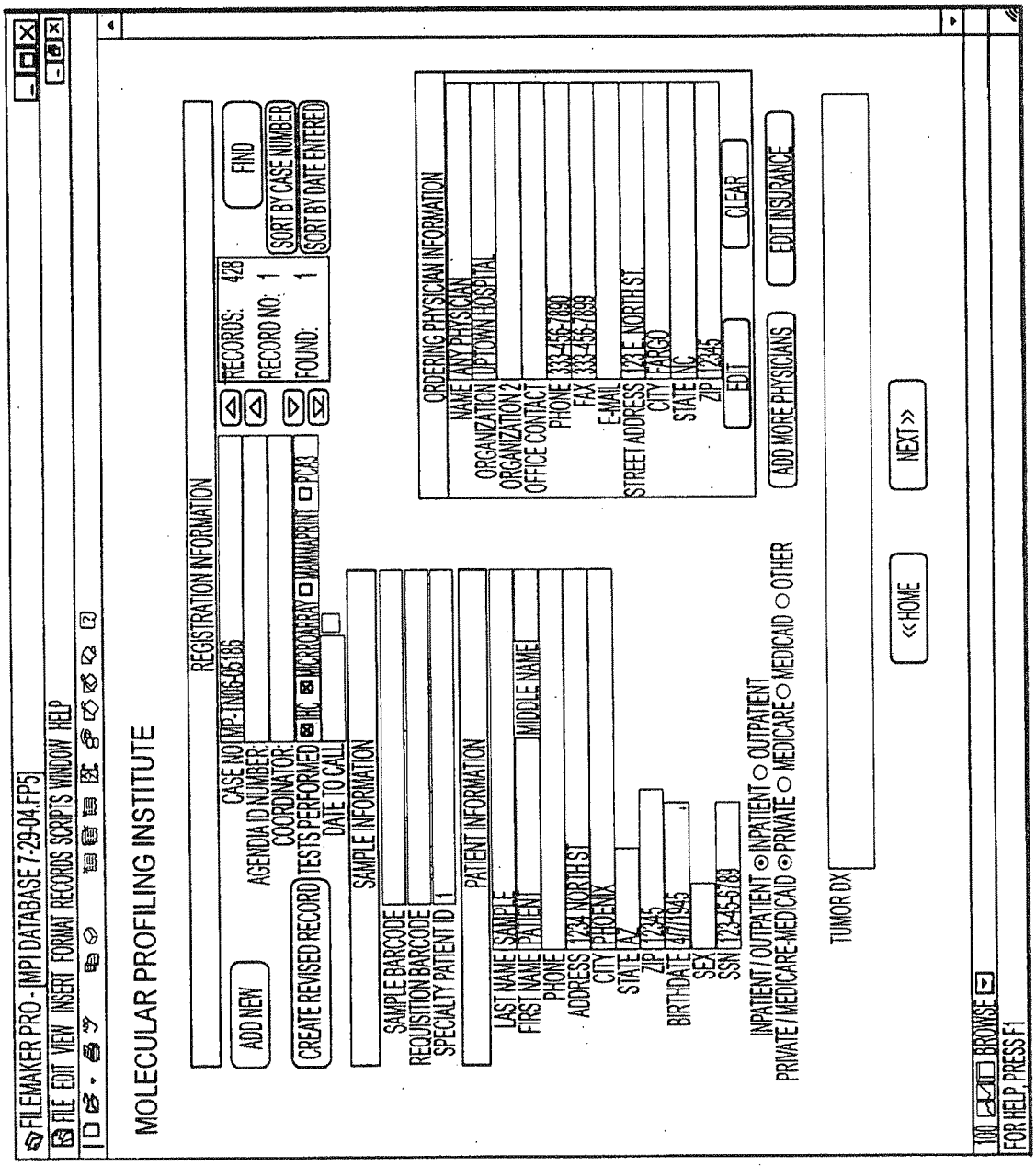

FILEMAKER PRO - IMPI DATABASE 7-29-04.FP5
FILE EDIT VIEW INSERT FORMAT RECORDS SCRIPTS WINDOW HELP
MOLECULAR PROFILING INSTITUTE
REGISTRATION INFORMATION
ADD NEW
CASE NO IMP-1M06-05186
AGENDA ID NUMBER:
COORDINATOR:
CREATE REVISED RECORD
TESTS PERFORMED IHC MICROARRAY MAMMAPRINT PCR
DATE TO CALL
RECORDS: 428
RECORD NO: 1
FOUND: 1
FIND
SORT BY CASE NUMBER
SORT BY DATE ENTERED
SAMPLE INFORMATION
SAMPLE BARCODE
REQUISITION BARCODE
SPECIALTY PATIENT ID 1
PATIENT INFORMATION
LAST NAME SAMPLE
FIRST NAME PATIENT
MIDDLE NAME
PHONE
ADDRESS 1234 NORTH ST
CITY PHOENIX
STATE AZ
ZIP 12345
BIRTHDATE 4/7/1945
SEX
SSN 123-45-6789
INPATIENT / OUTPATIENT ◉ INPATIENT ○ OUTPATIENT
PRIVATE / MEDICARE-MEDICAID ◉ PRIVATE ○ MEDICARE ○ MEDICAID ○ OTHER
ORDERING PHYSICIAN INFORMATION
NAME ANY PHYSICIAN
ORGANIZATION UPTOWN HOSPITAL
ORGANIZATION 2
OFFICE CONTACT
PHONE 333-456-7890
FAX 333-456-7899
E-MAIL
STREET ADDRESS 123 E. NORTH ST.
CITY FAIRGO
STATE INC
ZIP 12345
EDIT
CLEAR
ADD MORE PHYSICIANS
EDIT INSURANCE
TUMOR DX
<< HOME
NEXT >>
BROWSE
FOR HELP, PRESS F1

FIG.18

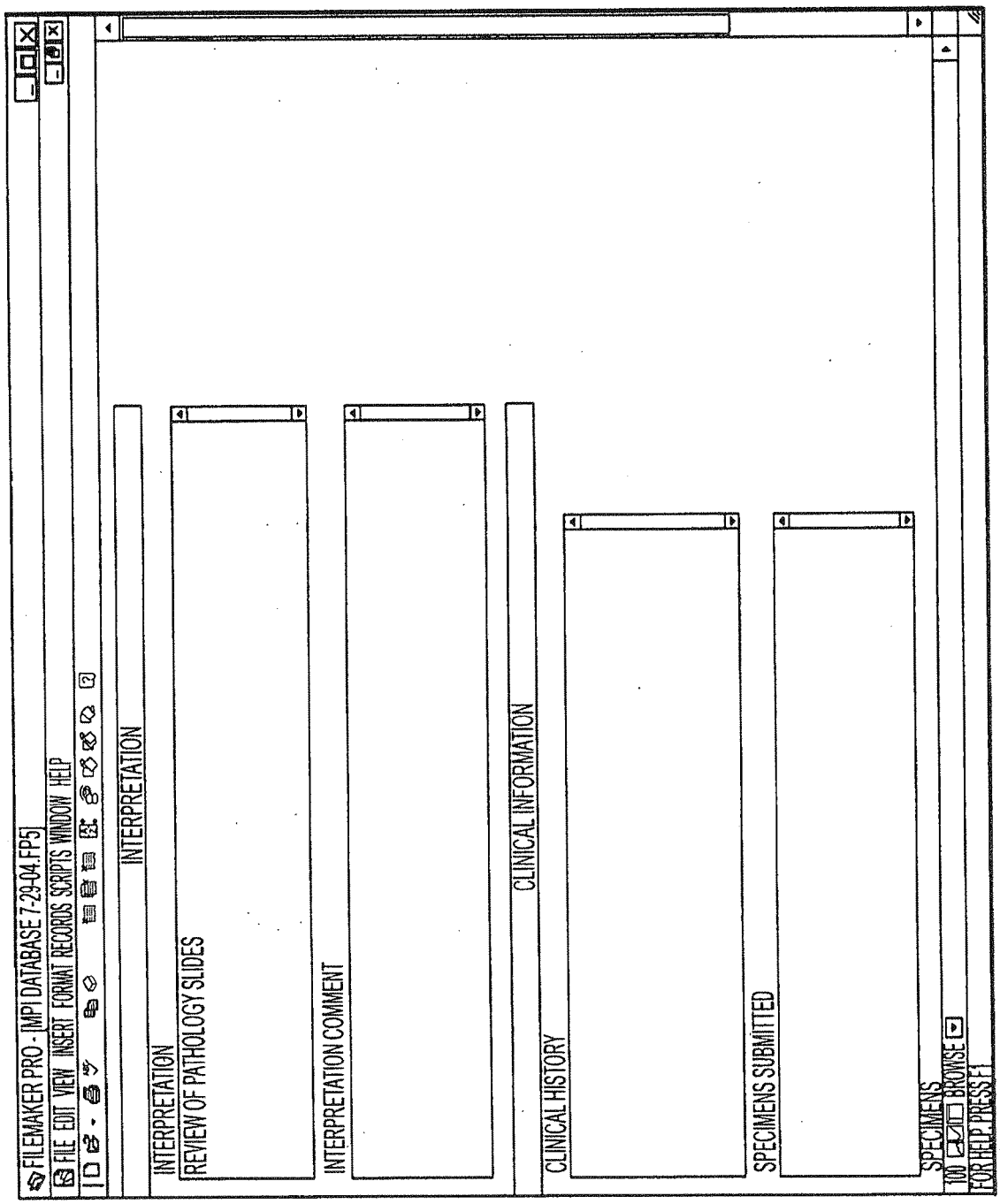
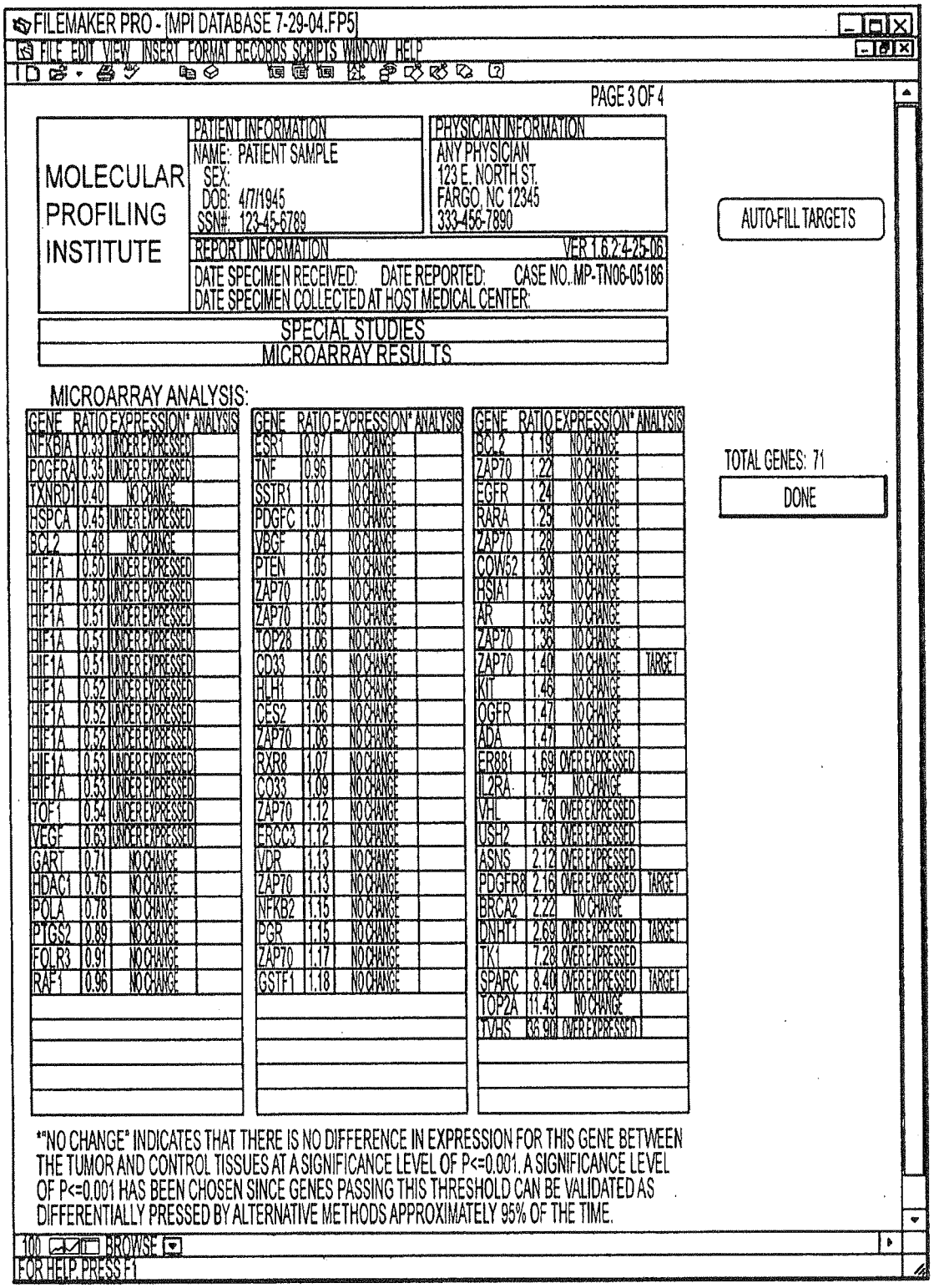

FILEMAKER PRO - IMPI DATABASE 7-29-04.FP5
FILE EDIT VIEW INSERT FORMAT RECORDS SCRIPTS WINDOW HELP
INTERPRETATION
INTERPRETATION
REVIEW OF PATHOLOGY SLIDES
INTERPRETATION COMMENT
CLINICAL INFORMATION
CLINICAL HISTORY
SPECIMENS SUBMITTED
SPECIMENS
100
BROWSE
FOR HELP, PRESS F1

FIG.19



GENE	RATIO	EXPRESSION*	ANALYSIS
NFKBIA	0.33	UNDER EXPRESSED	
PDGFRA	0.35	UNDER EXPRESSED	
TXNRD1	0.40	NO CHANGE	
HSPCA	0.45	UNDER EXPRESSED	
BCL2	0.48	NO CHANGE	
HIF1A	0.50	UNDER EXPRESSED	
HIF1A	0.50	UNDER EXPRESSED	
HIF1A	0.51	UNDER EXPRESSED	
HIF1A	0.51	UNDER EXPRESSED	
HIF1A	0.51	UNDER EXPRESSED	
HIF1A	0.52	UNDER EXPRESSED	
HIF1A	0.52	UNDER EXPRESSED	
HIF1A	0.52	UNDER EXPRESSED	
HIF1A	0.53	UNDER EXPRESSED	
HIF1A	0.53	UNDER EXPRESSED	
TOP1	0.54	UNDER EXPRESSED	
VEGF	0.63	UNDER EXPRESSED	
GART	0.71	NO CHANGE	
HDAC1	0.76	NO CHANGE	
POLA	0.78	NO CHANGE	
PTGS2	0.89	NO CHANGE	
FOLR3	0.91	NO CHANGE	
RAF1	0.96	NO CHANGE	

GENE	RATIO	EXPRESSION*	ANALYSIS
ESR1	0.97	NO CHANGE	
TNF	0.96	NO CHANGE	
SSTR1	1.01	NO CHANGE	
PDGFC	1.01	NO CHANGE	
VEGF	1.04	NO CHANGE	
PTEN	1.05	NO CHANGE	
ZAP70	1.05	NO CHANGE	
ZAP70	1.05	NO CHANGE	
TOP2B	1.06	NO CHANGE	
CD33	1.06	NO CHANGE	
HLH1	1.06	NO CHANGE	
CES2	1.06	NO CHANGE	
ZAP70	1.06	NO CHANGE	
RXR8	1.07	NO CHANGE	
CO33	1.09	NO CHANGE	
ZAP70	1.12	NO CHANGE	
ERCC3	1.12	NO CHANGE	
VDR	1.13	NO CHANGE	
ZAP70	1.13	NO CHANGE	
NFKB2	1.15	NO CHANGE	
PGR	1.15	NO CHANGE	
ZAP70	1.17	NO CHANGE	
GSTF1	1.18	NO CHANGE	

GENE	RATIO	EXPRESSION*	ANALYSIS
BCL2	1.19	NO CHANGE	
ZAP70	1.22	NO CHANGE	
EGFR	1.24	NO CHANGE	
RARA	1.25	NO CHANGE	
ZAP70	1.28	NO CHANGE	
COW52	1.30	NO CHANGE	
HSIA1	1.33	NO CHANGE	
AR	1.35	NO CHANGE	
ZAP70	1.36	NO CHANGE	
ZAP70	1.40	NO CHANGE	TARGET
KIT	1.46	NO CHANGE	
OGFR	1.47	NO CHANGE	
ADA	1.47	NO CHANGE	
ER881	1.69	OVER EXPRESSED	
IL2RA	1.75	NO CHANGE	
VHL	1.76	OVER EXPRESSED	
USH2	1.85	OVER EXPRESSED	
ASNS	2.12	OVER EXPRESSED	
PDGFR8	2.16	OVER EXPRESSED	TARGET
BRCA2	2.22	NO CHANGE	
DNHT1	2.69	OVER EXPRESSED	TARGET
TK1	7.28	OVER EXPRESSED	
SPARC	8.40	OVER EXPRESSED	TARGET
TOP2A	11.43	NO CHANGE	
TVHS	85.90	OVER EXPRESSED	

FIG.20

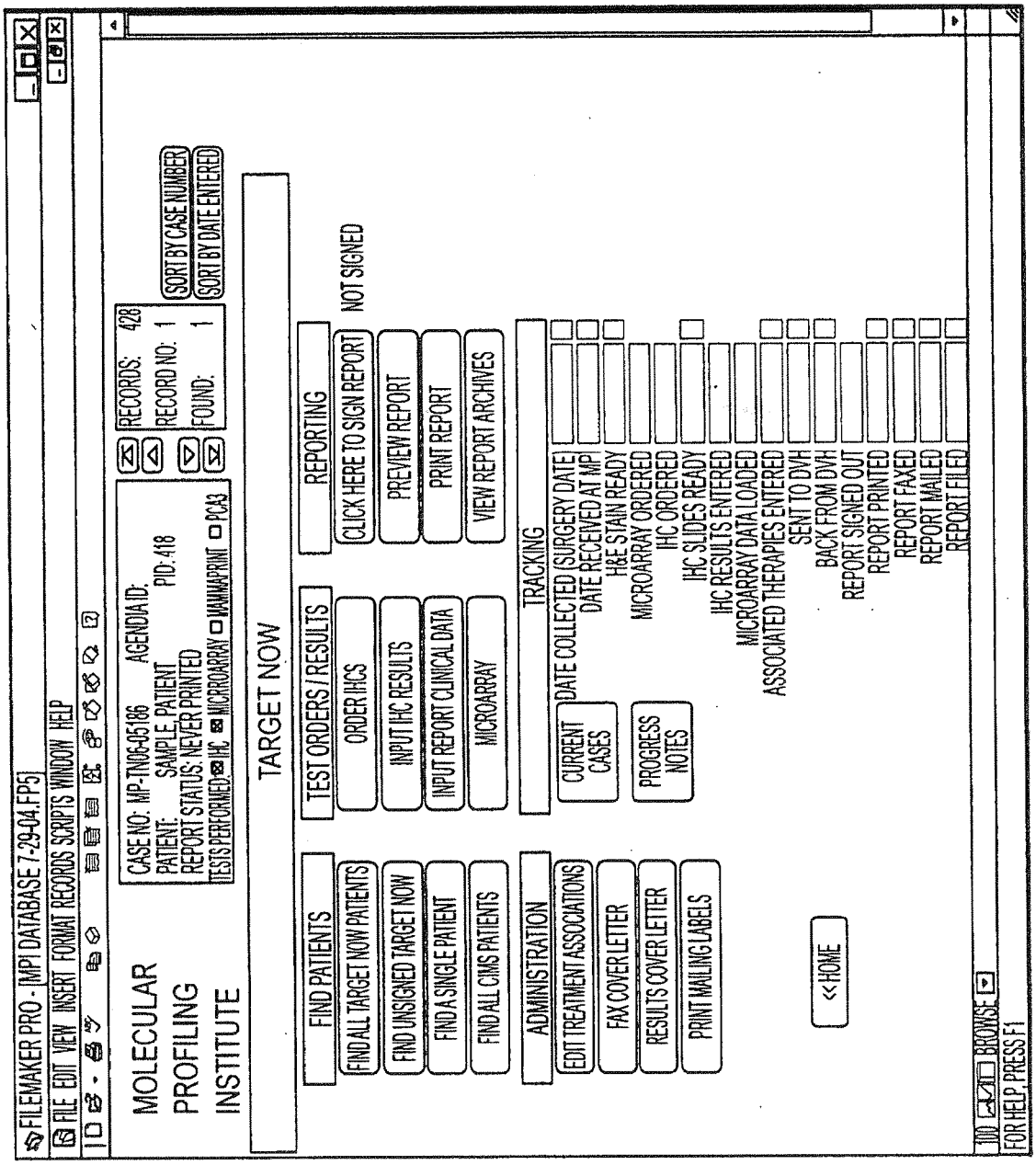

FILEMAKER PRO - IMPI DATABASE 7-29-04.FP5
FILE EDIT VIEW INSERT FORMAT RECORDS SCRIPTS WINDOW HELP
MOLECULAR PROFILING INSTITUTE
CASE NO: MP-TN06-05186 AGENDA ID:
PATIENT: SAMPLE, PATIENT PID: 418
REPORT STATUS: NEVER PRINTED
TESTS PERFORMED: IHC MICROARRAY WAMMA/PRINT PCA3
RECORDS: 428
RECORD NO: 1
FOUND: 1
SORT BY CASE NUMBER
SORT BY DATE ENTERED
TARGET NOW
FIND PATIENTS
FIND ALL TARGET NOW PATIENTS
FIND UNSIGNED TARGET NOW
FIND A SINGLE PATIENT
FIND ALL CIMS PATIENTS
ADMINISTRATION
EDIT TREATMENT ASSOCIATIONS
FAX COVER LETTER
RESULTS COVER LETTER
PRINT MAILING LABELS
<<HOME
TEST ORDERS / RESULTS
ORDER IHCS
INPUT IHC RESULTS
INPUT REPORT CLINICAL DATA
MICROARRAY
REPORTING
CLICK HERE TO SIGN REPORT
NOT SIGNED
PREVIEW REPORT
PRINT REPORT
VIEW REPORT ARCHIVES
TRACKING
CURRENT CASES
PROGRESS NOTES
DATE COLLECTED (SURGERY DATE)
DATE RECEIVED AT MPI
H&E STAIN READY
MICROARRAY ORDERED
IHC ORDERED
IHC SLIDES READY
IHC RESULTS ENTERED
MICROARRAY DATA LOADED
ASSOCIATED THERAPIES ENTERED
SENT TO DVH
BACK FROM DVH
REPORT SIGNED OUT
REPORT PRINTED
REPORT FAXED
REPORT MAILED
REPORT FILED
BROWSE
FOR HELP, PRESS F1

FIG.21

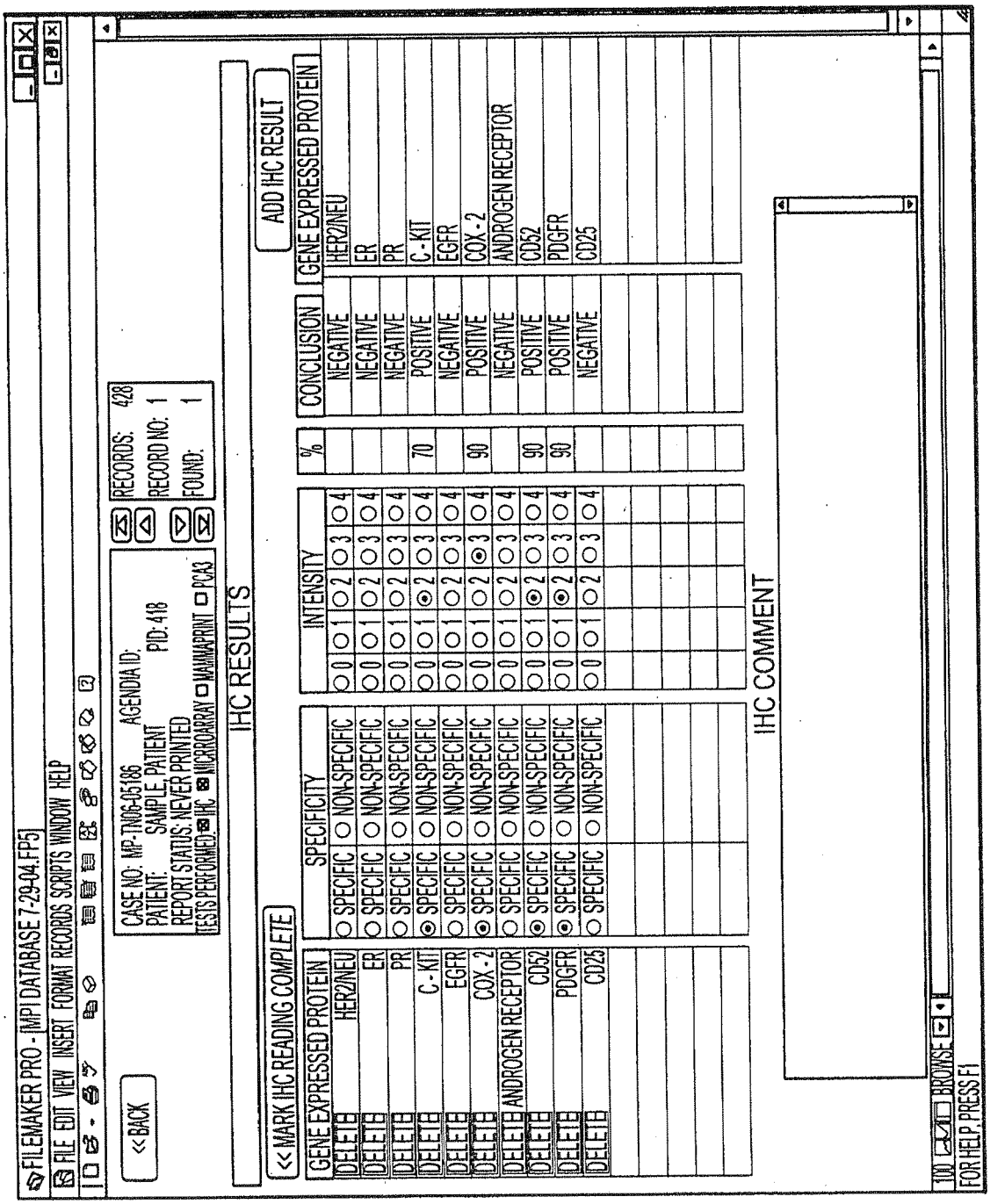

FILEMAKER PRO - [MPI DATABASE 7-29-04.FP5]
FILE EDIT VIEW INSERT FORMAT RECORDS SCRIPTS WINDOW HELP
<<BACK
CASE NO: MP-TN06-05186 AGENDA ID:
PATIENT: SAMPLE, PATIENT PID: 418
REPORT STATUS: NEVER PRINTED
TESTS PERFORMED: IHC MICROARRAY MAMMAPRINT PCA3
RECORDS: 428
RECORD NO: 1
FOUND: 1
IHC RESULTS
<< MARK IHC READING COMPLETE
ADD IHC RESULT
GENE EXPRESSED PROTEIN
SPECIFICITY
INTENSITY
%
CONCLUSION
GENE EXPRESSED PROTEIN
DELETE HER2/NEU SPECIFIC NON-SPECIFIC 0 1 2 3 4 NEGATIVE HER2/NEU
DELETE ER SPECIFIC NON-SPECIFIC 0 1 2 3 4 NEGATIVE ER
DELETE PR SPECIFIC NON-SPECIFIC 0 1 2 3 4 NEGATIVE PR
DELETE C-KIT SPECIFIC NON-SPECIFIC 0 1 2 3 4 70 POSITIVE C-KIT
DELETE EGFR SPECIFIC NON-SPECIFIC 0 1 2 3 4 NEGATIVE EGFR
DELETE COX-2 SPECIFIC NON-SPECIFIC 0 1 2 3 4 90 POSITIVE COX-2
DELETE ANDROGEN RECEPTOR SPECIFIC NON-SPECIFIC 0 1 2 3 4 NEGATIVE ANDROGEN RECEPTOR
DELETE CD52 SPECIFIC NON-SPECIFIC 0 1 2 3 4 90 POSITIVE CD52
DELETE PDGFR SPECIFIC NON-SPECIFIC 0 1 2 3 4 90 POSITIVE PDGFR
DELETE CD25 SPECIFIC NON-SPECIFIC 0 1 2 3 4 NEGATIVE CD25
IHC COMMENT
100 BROWSE
FOR HELP, PRESS F1

FIG.22

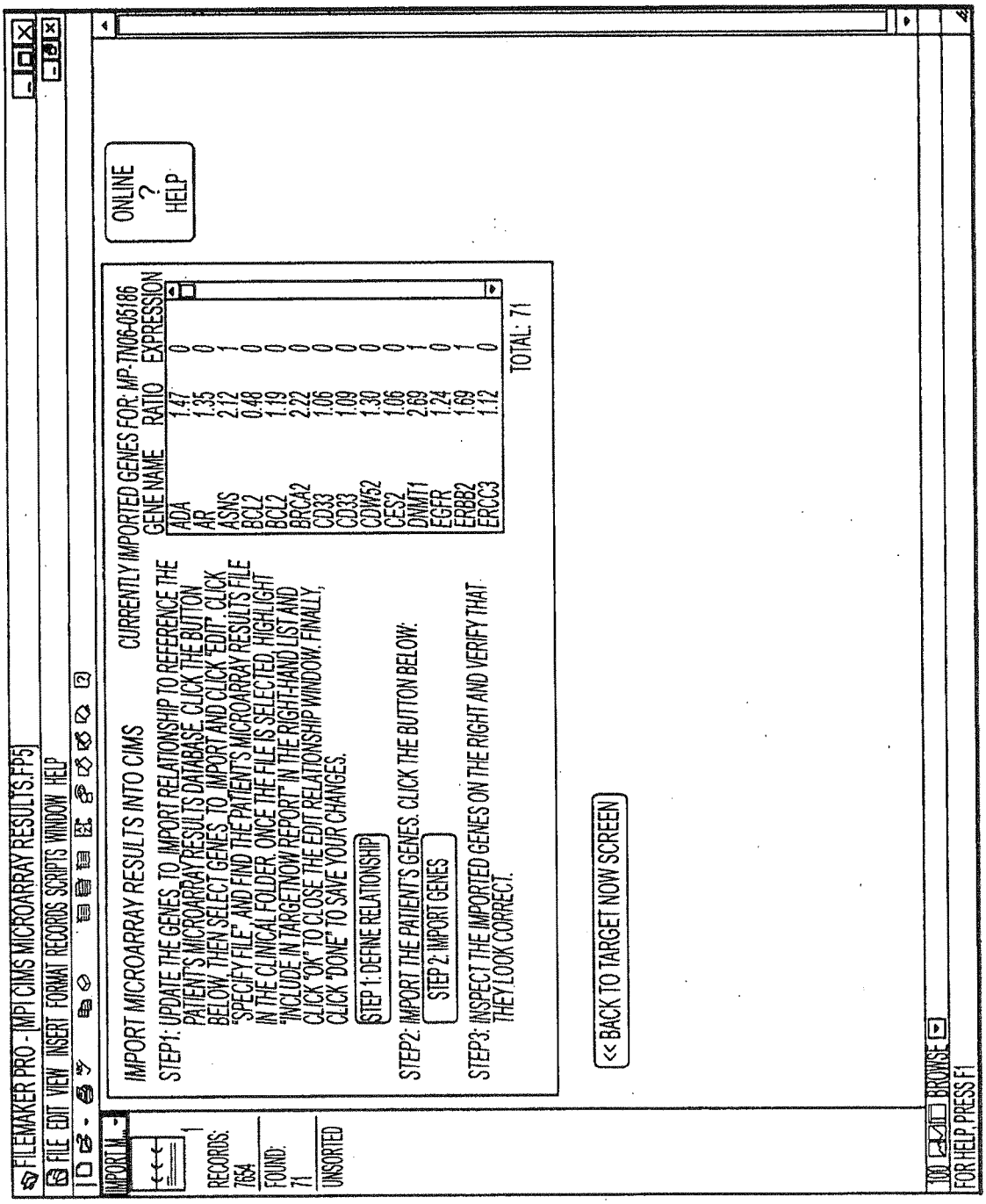

FILEMAKER PRO - IMPI CIMS MICROARRAY RESULTS.FP5
FILE EDIT VIEW INSERT FORMAT RECORDS SCRIPTS WINDOW HELP
IMPORT M...
RECORDS: 7654
FOUND: 71
UNSORTED
IMPORT MICROARRAY RESULTS INTO CIMS
CURRENTLY IMPORTED GENES FOR: MP-7N06-05186
STEP1: UPDATE THE GENES TO IMPORT RELATIONSHIP TO REFERENCE THE PATIENT'S MICROARRAY RESULTS DATABASE. CLICK THE BUTTON BELOW, THEN SELECT GENES TO IMPORT AND CLICK "EDIT". CLICK "SPECIFY FILE", AND FIND THE PATIENT'S MICROARRAY RESULTS FILE IN THE CLINICAL FOLDER. ONCE THE FILE IS SELECTED, HIGHLIGHT "INCLUDE IN TARGETNOW REPORT" IN THE RIGHT-HAND LIST AND CLICK "OK" TO CLOSE THE EDIT RELATIONSHIP WINDOW. FINALLY, CLICK "DONE" TO SAVE YOUR CHANGES.
STEP 1: DEFINE RELATIONSHIP
STEP2: IMPORT THE PATIENT'S GENES. CLICK THE BUTTON BELOW:
STEP 2: IMPORT GENES
STEP3: INSPECT THE IMPORTED GENES ON THE RIGHT AND VERIFY THAT THEY LOOK CORRECT.
GENE NAME RATIO EXPRESSION
ADA 1.47 0
AR 1.35 0
ASNS 2.12 1
BCL2 0.48 0
BCL2 1.19 0
BRCA2 2.22 0
CD33 1.06 0
CD33 1.09 0
CDW52 1.30 0
CES2 1.06 0
DNMT1 2.69 1
EGFR 1.24 0
ERBB2 1.69 1
ERCC3 1.12 0
TOTAL: 71
<< BACK TO TARGET NOW SCREEN
ONLINE ? HELP
TWO BROWSE
FOR HELP, PRESS F1

FIG.23

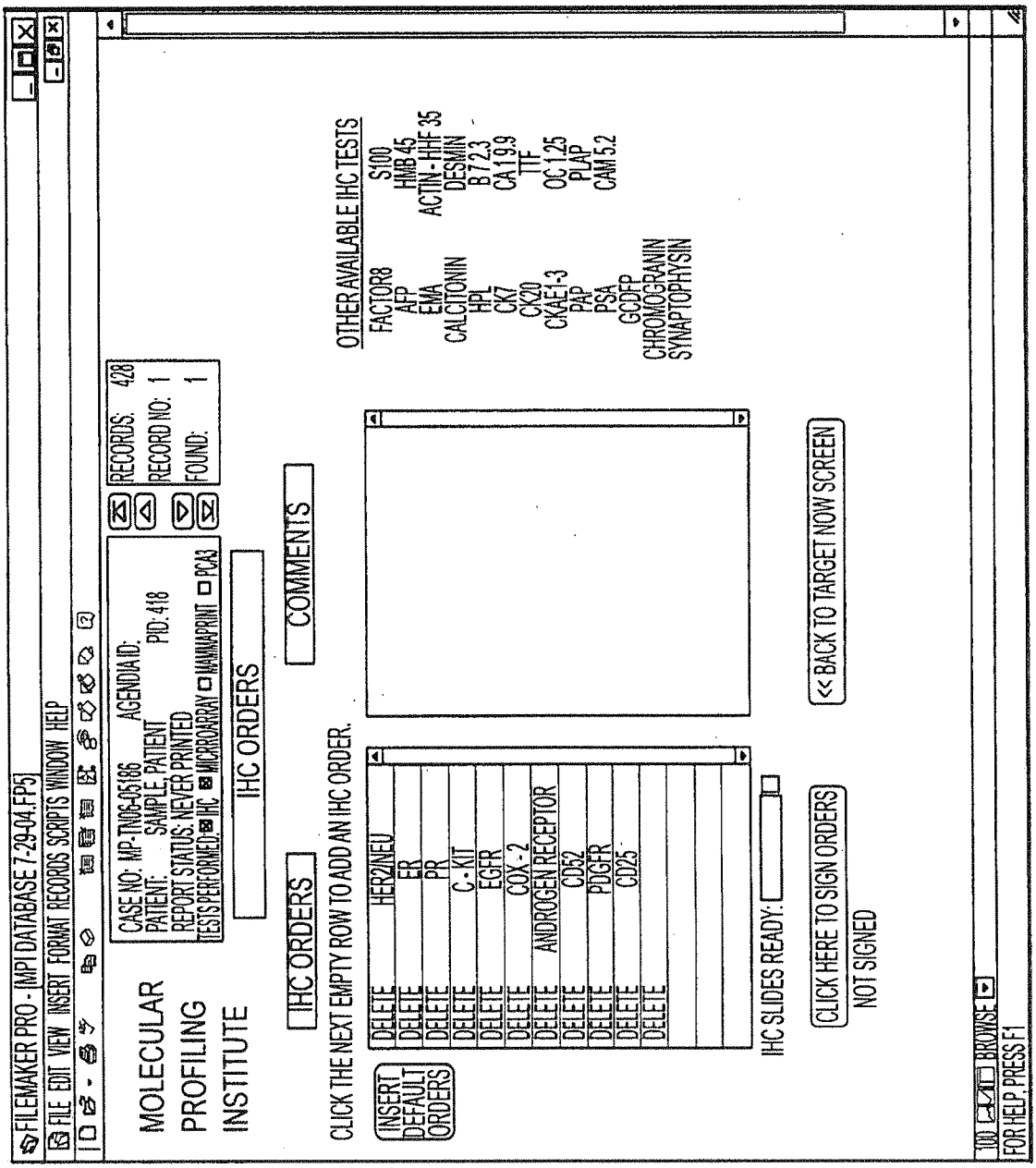

FILEMAKER PRO - IMPI DATABASE 7-29-04.FP5
FILE EDIT VIEW INSERT FORMAT RECORDS SCRIPTS WINDOW HELP
MOLECULAR PROFILING INSTITUTE
CASE NO: MP-TM06-05186 AGENDA ID:
PATIENT: SAMPLE, PATIENT PID: 418
REPORT STATUS: NEVER PRINTED
TESTS PERFORMED: IHC MICROARRAY WAMMAPRINT PCA3
RECORDS: 428
RECORD NO: 1
FOUND: 1
IHC ORDERS
COMMENTS
IHC ORDERS
CLICK THE NEXT EMPTY ROW TO ADD AN IHC ORDER.
OTHER AVAILABLE IHC TESTS
FACTOR8
AFP
EMA
CALCITONIN
HPL
CK7
CK20
CKAE1-3
PAP
PSA
GCDFP
CHROMOGRANIN
SYNAPTOPHYSIN
S100
HMB 45
ACTIN - HHF 35
DESMIN
B72.3
CA19.9
TTF
OC 1.25
PLAP
CAM 5.2
(INSERT DEFAULT ORDERS)
DELETE HER2/NEU
DELETE ER
DELETE PR
DELETE C - KIT
DELETE EGFR
DELETE COX - 2
DELETE ANDROGEN RECEPTOR
DELETE CD52
DELETE PDGFR
DELETE CD25
DELETE
IHC SLIDES READY:
CLICK HERE TO SIGN ORDERS
NOT SIGNED
<< BACK TO TARGET NOW SCREEN
100 BROWSE
FOR HELP, PRESS F1

FIG.24

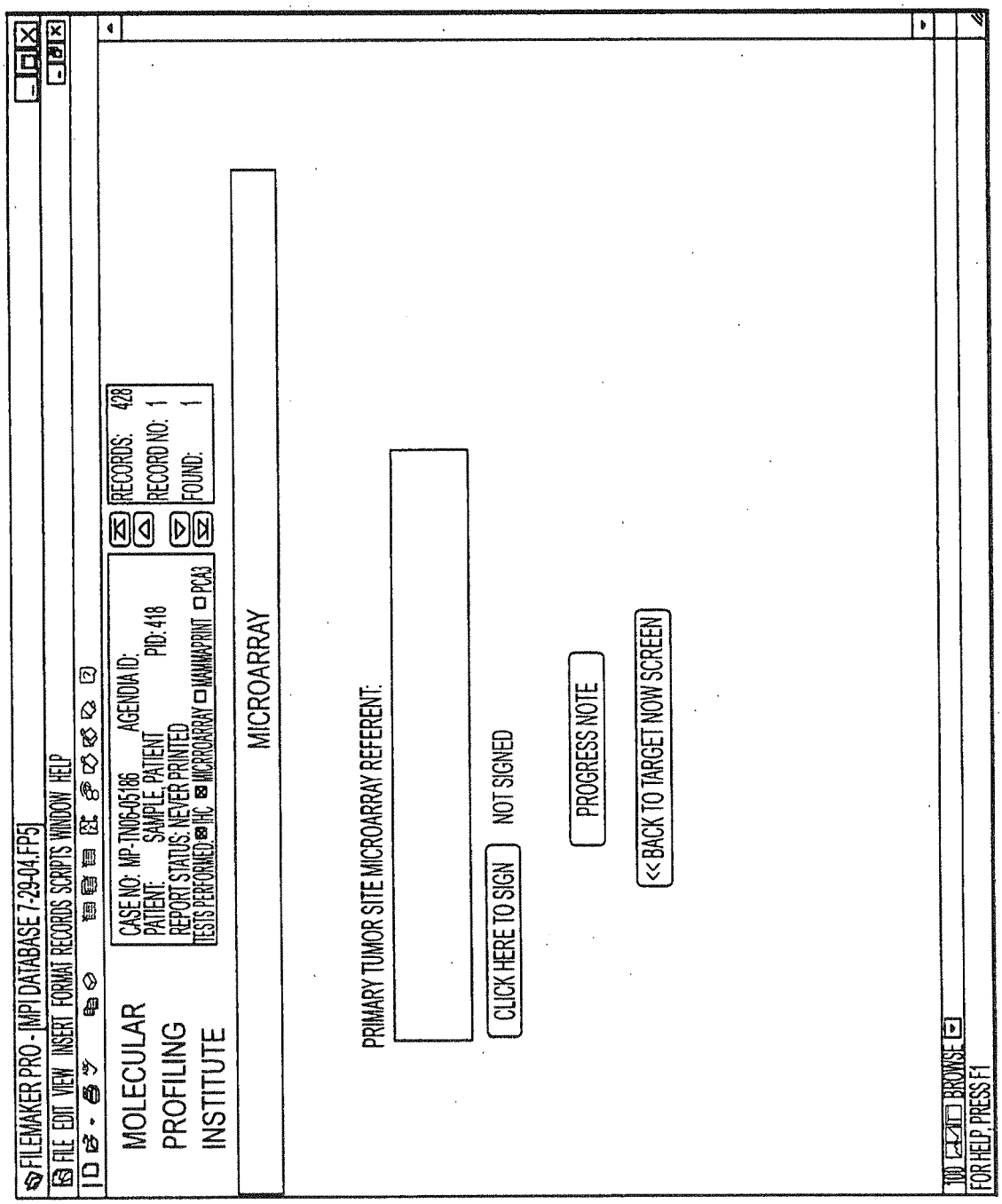

FILEMAKER PRO - [MPI DATABASE 7-29-04.FP5]
FILE EDIT VIEW INSERT FORMAT RECORDS SCRIPTS WINDOW HELP
MOLECULAR PROFILING INSTITUTE
CASE NO: MP-TN06-05186 AGENDA ID:
PATIENT: SAMPLE, PATIENT PID: 418
REPORT STATUS: NEVER PRINTED
TESTS PERFORMED: IHC MICROARRAY MAMMAPRINT PCA3
RECORDS: 428
RECORD NO: 1
FOUND: 1
MICROARRAY
PRIMARY TUMOR SITE MICROARRAY REFERENT:
CLICK HERE TO SIGN
NOT SIGNED
PROGRESS NOTE
<< BACK TO TARGET NOW SCREEN
BROWSE
FOR HELP, PRESS F1

FIG.25