

Patient	Specimen Information	Ordered By
Name: Robert Jacobson	Primary Tumor Site: Lung	
Date of Birth: 1969-02-17	Specimen Site: Mediastinal lymph nodes	
Sex: Female	Specimen ID: 5036	
Case Number: 6993	Specimen Collected: 2023-07-24	
Diagnosis: Squamous cell carcinoma	Test Initiated: 2023-07-26	

Biomarker	Method	Analyte	Result	Therapy association		Biomarker level
ER	IHC	protein	Positive   3+, 100%	BENEFIT	abemaciclib, palbociclib, ribociclib, endocrine, therapy, everolimus	level 2
PR	IHC	protein	Positive   2+, 95%	BENEFIT	abemaciclib, palbociclib, ribociclib, endocrine therapy	level 2
TMB	seq	DNA tumor	8 m/Mb Low	BENEFIT	pembrolizumab	level 2
ERBB2	IHC	Protien	Negative   0	LACK OF BENEFIT	trastuzumab, ado-trastuzumab emtansine, pertuzumab, fam-trastuzumab deruxtecan-nxki, lapatinib, neratinib, tucatinib	level 1

Cancer-Type Relevant Biomarkers

BioMarker	Method	Analyte	Result
PD-L1(SP142)	IHC	Protien	Negative  1+, 4%
Mismatch repair status	IHC	Protien	Negative  3+, 28%
MYOD1	Seq	RNA-Tumor	Stable
FGFR4	Seq	RNA-Tumor	Mutation not detected
H3.3	Seq	RNA-Tumor	Fusion not detected

BioMarker	Method	Analyte	Result
AR	IHC	Protien	Negative  2+, 82%
PD-L1(SP142)	IHC	Protien	Negative  3+, 52%
PRKCA	Seq	RNA-Tumor	Stable
ER	IHC	Protien	Positive  2+, 14%
ER	IHC	Protien	Negative  3+, 87%

Genomic Signatures

BioMarker	Method	Analyte	Result
Microsatellite instability	Seq	DNA tumor	Low
Tumor mutational burden	Seq	DNA tumor	8 mutations/Mb Low
Genomic loss of heterozygosity (LOH)	Seq	DNA tumor	Low - 15% of tested genmoic segments exhibit LOH

Genes Tested with Pathogenic Alterations or likely Pathogenic Alterations

Gene	Method	Analyte	Variant Interpretation	Protien Alteration	Exon	DNA Alteration	Allele Frequency %
DDR2	Seq	DNA tumor	Pathogenic	p.N452D	11	c.1354A>G	16.66
KLF1	Seq	DNA tumor	Likely Benign	p.R465H	10	c.1394G>A	32.51
IKZF1	Seq	DNA tumor	Benign	p.V49M	17	c.145G>A	10.3
BRCA2	Seq	DNA tumor	Pathogenic	p.G607V	12	c.1820G>T	24.63

Gene Variants of Unknown Significance

Gene	Method	Analyte	Variant Interpretation	Protien Alteration	Exon	DNA Alteration	Allele Frequency %
DICER1	Seq	DNA tumor	Variant of uncertain significance	p.P44L	15	c.131C>T	7.15
CD74	Seq	DNA tumor	Variant of uncertain significance	p.D820Y	6	c.1669T>C	12.97
ARID2	Seq	DNA tumor	Variant of uncertain significance	p.L239R	17	c.1912A>T	13.85
CDC73	Seq	DNA tumor	Variant of uncertain significance	p.G503A	14	c.1508G>C	13.0
DPYD	Seq	DNA tumor	Variant of uncertain significance	p.I1600M	9	c.4800C>G	5.76
CHD6	Seq	DNA tumor	Variant of uncertain significance	p.N515H	15	1	3.67

Immunohistochemistry Results

Biomarker	Result
PD-L1(SP142)	Positive  1+, 2%
PTEN	Negative  1+, 3%
MSH2	Negative  3+, 66%
MLH1	Positive  1+, 61%
ERBB2	Positive  1+, 38%

Genes Tested with Indeterminate Results by Tumor DNA Sequencing

MYD88      PAX5      KRAS      B2M      HBA2      KRAS

Specimen Information

Specimen ID: 5036

Specimen Collected: 2023-07-24

Specimen Recieved: 2023-07-26

Testing Initiated: 2023-07-26

Gross Description: 5036

Pathological Diagnosis:

Left breast, central, 12:00, suspicious mass, 12-gauge core needle biopsy: Infiltrating moderately-differentiated mammary carcinoma, grade 2, Nottingham score 6 (architectural grade 3, nuclear grade 2, mitotic figures 1).

Dissection Information:

Molecular testing of this specimen was performed after harvesting of targeted tissues with an approved manual microdissection technique. Candidate slides were examined under a microscope and areas containing tumor cells (and separately normal cells, when necessary for testing) were circled. A laboratory technician harvested targeted tissues for extraction from the marked areas using a dissection microscope.

Clinical Trials Connector

CHEMOTHERAPY CLINICAL TRIALS				
Drug class	Biomarker	Method	Analyte	Investigational agents
Anti hormonal therapy	ER	IHC	protein	anastrozole, letrozole, exemestane, fulvestrant, tamoxifen, goserelin, leuprolide
Anti hormonal therapy	PR	IHC	protein	anastrozole, letrozole, exemestane, fulvestrant, tamoxifen, goserelin, leuprolide
Anti inflammatory agents	PIK3CA	NGS	DNA tumor	aspirin

TARGETED THERAPY CLINICAL TRIALS				
Drug class	Biomarker	Method	Analyte	Investigational agents
Akt inhibitors	ARID1A	NGS	DNA tumor	AZD5363, MK-2206, ipataserib
immunomodulatory agents	TMB	NGS	DNA tumor	avelumab, atezolizumab, durvalumab, ipilimumab, nivolumab, pembrolizumab
PARP inhibitors	NBN	NGS	DNA tumor	BGB-290, BMN-673, olaparib, rucaparib, talazoparib
Akt/mTor inhibitors	PIK3CA	NGS	DNA tumor	AZD5363, BYL719, MK-2206, ipataserib, everolimus, temsirolimus