Final Report

Patient

Name: Troy Smith
Date of Birth: 1987-08-02
Sex: Male
Case Number: 4816
Diagnosis: Large cell carcinoma

Specimen Information

Primary Tumor Site: Lung
Specimen Site: Mediastinal lymph nodes
Specimen ID: 4476
Specimen Collected: 2023-09-01
Test Initiated: 2023-09-01

Ordered By

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	17 m/Mb High	BENEFIT	pembrolizumab	level 2
ERBB2	IHC	Protien	Negative | 0	LACK OF BENEFT	trastuzumab, ado-trastuzumab emtansine, pertuzumab, fam-trastuzumab deruxtecan-nxki, lapatinib, neratinib, tucatinib	level 1

Cancer-Type Relevant Biomarkers

BioMarker	Method	Analyte	Result
NRAS	Seq	RNA-Tumor	Mutation not detected
PR	IHC	Protien	Negative| 1+, 51%
CDC73	Seq	DNA-Tumor	Fusion not detected
PD-L1(SP142)	IHC	Protien	Negative| 1+, 17%
SDHA	Seq	DNA-Tumor	Fusion not detected

BioMarker	Method	Analyte	Result
PD-L1(SP142)	IHC	Protien	Negative| 2+, 42%
Mismatch repair status	IHC	Protien	Negative| 1+, 32%

Genomic Signatures

BioMarker	Method	Analyte	Result
Microsatellite instability	Seq	DNA tumor	High
Tumor mutational burden	Seq	DNA tumor	17 mutations/Mb High
Genomic loss of heterozygosity (LOH)	Seq	DNA tumor	High - 19% 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 %
NTRK1	Seq	DNA tumor	Likely Benign	p.P904L	18	c.2711C>T	1.44
MET	Seq	DNA tumor	Likely Benign	p.Y646X	2	c.1937A>C	16.57
SRSF2	Seq	DNA tumor	Likely Benign	p.Y736fs*4	4	c.2207_2212delinsTAGATTC	12.54
HSD3B1	Seq	DNA tumor	Benign	p.G935R	2	c.1849G>T	9.91

Gene Variants of Unknown Significance

Gene	Method	Analyte	Variant Interpretation	Protien Alteration	Exon	DNA Alteration	Allele Frequency %
MPL	Seq	DNA tumor	Variant of uncertain significance	p.P98S	3	A	6.73
HBB	Seq	DNA tumor	Variant of uncertain significance	p.G469S	3	c.1799_1800delinsAA	20.76
ABL1	Seq	DNA tumor	Variant of uncertain significance	p.R222C	20	c.866C>A	3.05
PIK3CA	Seq	DNA tumor	Variant of uncertain significance	p.G607V	4	c.1792C>T	6.26
ERCC2	Seq	DNA tumor	Variant of uncertain significance	p.A322T	14	c.239C>G	9.19

Immunohistochemistry Results

Biomarker	Result
ERBB2	Negative| 2+, 49%
PD-L1(SP142)	Positive| 1+, 50%
PR	Negative| 3+, 36%
AR	Positive| 1+, 55%

Genes Tested with Indeterminate Results by Tumor DNA Sequencing

PIK3CA XPC PTPN11 SMO B2M SRSF2

Final Report

Specimen Information

Specimen ID: 4476

Specimen Collected: 2023-09-01

Specimen Recieved: 2023-09-01

Testing Initiated: 2023-09-01

Gross Description: 4476

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	anastrazole, letrozole, exemestane, fulvestrant, tamoxifen, goserelin, leuprolide
Anti hormonal therapy	PR	IHC	protein	anastrazole, 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