Final Report

Patient

Name: Dean Murphy
Date of Birth: 1976-09-05
Sex: Female
Case Number: 3158
Diagnosis: Large cell carcinoma

Specimen Information

Primary Tumor Site: Lung
Specimen Site: Pleura
Specimen ID: 4245
Specimen Collected: 2023-09-29
Test Initiated: 2023-09-29

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	10 m/Mb Low	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
PR	IHC	Protien	Negative| 1+, 10%
PD-L1(SP142)	IHC	Protien	Negative| 3+, 81%
GNAS	Seq	DNA-Tumor	Mutation not detected
FLT3	Seq	DNA-Tumor	Fusion not detected
CCND3	Seq	DNA-Tumor	Fusion not detected

BioMarker	Method	Analyte	Result
SIX1	Seq	RNA-Tumor	Stable
PD-L1(SP142)	IHC	Protien	Negative| 2+, 94%
PTEN	Seq	DNA-Tumor	Mutation not detected

Genomic Signatures

BioMarker	Method	Analyte	Result
Microsatellite instability	Seq	DNA tumor	Equivocal
Tumor mutational burden	Seq	DNA tumor	10 mutations/Mb Low
Genomic loss of heterozygosity (LOH)	Seq	DNA tumor	Low - 3% 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 %
RB1	Seq	DNA tumor	Pathogenic	p.G503A	19	c.1508G>C	27.95
KRAS	Seq	DNA tumor	Pathogenic	p.C481X	18	c	26.46
ARID2	Seq	DNA tumor	Pathogenic	p.K385fs*47	13	c.1154_1155insTTGTC	17.97
SIX1	Seq	DNA tumor	Likely Pathogenic	p.G35R	4	1	7.13

Gene Variants of Unknown Significance

Gene	Method	Analyte	Variant Interpretation	Protien Alteration	Exon	DNA Alteration	Allele Frequency %
SIX1	Seq	DNA tumor	Variant of uncertain significance	p.R479H	12	c.1436G>A	25.86
SIX1	Seq	DNA tumor	Variant of uncertain significance	p.G607V	18	c.1820G>T	16.85
NRAS	Seq	DNA tumor	Variant of uncertain significance	p.E455fs*7	9	>	13.57
DNMT3A	Seq	DNA tumor	Variant of uncertain significance	p.D463H	15	c.1387G>C	9.24
STAG2	Seq	DNA tumor	Variant of uncertain significance	p.E23Vfs*17	20	c.5265_5266insC	1.27

Immunohistochemistry Results

Biomarker	Result
PR	Negative| 1+, 26%
PTEN	Negative| 3+, 11%
PD-L1(SP142)	Positive| 2+, 32%
MLH1	Negative| 2+, 10%

Genes Tested with Indeterminate Results by Tumor DNA Sequencing

MAPK1 FGFR1 CALR

Specimen Information

Specimen ID: 4245

Specimen Collected: 2023-09-29

Specimen Recieved: 2023-09-29

Testing Initiated: 2023-09-29

Gross Description: 4245

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