Final Report

Patient

Name: Sara Bradshaw
Date of Birth: 1991-10-14
Sex: Male
Case Number: 8570
Diagnosis: Invasive ductal carcinoma

Specimen Information

Primary Tumor Site: Breast
Specimen Site: Lymph nodes (axillary
Specimen ID: 4123
Specimen Collected: 2023-05-03
Test Initiated: 2023-05-05

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
HBB	Seq	RNA-Tumor	Mutation not detected
ALK	Seq	RNA-Tumor	Mutation not detected
Mismatch repair status	IHC	Protien	Negative| 2+, 100%

Genomic Signatures

BioMarker	Method	Analyte	Result
Microsatellite instability	Seq	DNA tumor	Low
Tumor mutational burden	Seq	DNA tumor	10 mutations/Mb Low
Genomic loss of heterozygosity (LOH)	Seq	DNA tumor	Low - 11% 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 %
TEK	Seq	DNA tumor	Benign	p.T367N	6	c.1100C>A	3.09
TEK	Seq	DNA tumor	Likely Pathogenic	p.S34X	19	1	21.84
AKT1	Seq	DNA tumor	Likely Pathogenic	p.H362R	20	c.1085A>G	27.9
IDH2	Seq	DNA tumor	Likely Benign	p.Y303H	15	1	4.71
PDGFRB	Seq	DNA tumor	Likely Benign	p.G466E	6	c.1790T>A	16.37

Gene Variants of Unknown Significance

Gene	Method	Analyte	Variant Interpretation	Protien Alteration	Exon	DNA Alteration	Allele Frequency %
BTK	Seq	DNA tumor	Variant of uncertain significance	p.F332V	16	G	24.44
CSF3R	Seq	DNA tumor	Variant of uncertain significance	p.G12V	14	c.183A>G	7.43
ARID2	Seq	DNA tumor	Variant of uncertain significance	p.S1982Rfs*22	20	c.5946delT	3.6
SIX1	Seq	DNA tumor	Variant of uncertain significance	p.F1888L	4	c.5662T>C	7.32
TOP2A	Seq	DNA tumor	Variant of uncertain significance	p.*143Qext*31	6	c.427T>C	3.72

Immunohistochemistry Results

Biomarker	Result
PD-L1(SP142)	Positive| 3+, 79%
PMS2	Negative| 1+, 50%
MSH2	Negative| 2+, 18%

Genes Tested with Indeterminate Results by Tumor DNA Sequencing

PDGFRA SIX1 TEK FOXL2

Specimen Information

Specimen ID: 4123

Specimen Collected: 2023-05-03

Specimen Recieved: 2023-05-05

Testing Initiated: 2023-05-05

Gross Description: 4123

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