Final Report

Patient

Name: Vickie Mitchell
Date of Birth: 1928-04-18
Sex: Female
Case Number: 9969
Diagnosis: Follicular thyroid cancer

Specimen Information

Primary Tumor Site: Thyroid
Specimen Site: Perithyroidal tissue
Specimen ID: 2775
Specimen Collected: 2024-02-20
Test Initiated: 2024-02-26

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
MYD88	Seq	DNA-Tumor	Stable
JAK3	Seq	DNA-Tumor	Mutation not detected
IDH1	Seq	RNA-Tumor	Fusion not detected
PD-L1(SP142)	IHC	Protien	Positive| 2+, 90%
PD-L1(SP142)	IHC	Protien	Positive| 3+, 94%

BioMarker	Method	Analyte	Result
AR	IHC	Protien	Positive| 3+, 89%
STAT5B	Seq	DNA-Tumor	Fusion 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	High - 30% 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 %
PTCH1	Seq	DNA tumor	Benign	p.E504K	4	c.1510G>A	36.5
NF1	Seq	DNA tumor	Likely Pathogenic	p.K385L	2	c.1153_1154delinsTC	10.81
FGFR1	Seq	DNA tumor	Likely Benign	p.A374E	8	c	18.4
NRAS	Seq	DNA tumor	Pathogenic	p.W266*	12	c.798G>A	7.81

Gene Variants of Unknown Significance

Gene	Method	Analyte	Variant Interpretation	Protien Alteration	Exon	DNA Alteration	Allele Frequency %
PKLR	Seq	DNA tumor	Variant of uncertain significance	p.L122R	4	c.365T>G	10.24
SRSF2	Seq	DNA tumor	Variant of uncertain significance	p.D842V	2	c.1153_1154delinsTT	24.72
DDR2	Seq	DNA tumor	Variant of uncertain significance	p.T681I	5	A	6.54
TOP2A	Seq	DNA tumor	Variant of uncertain significance	p.G12X	9	c.39C>G	13.99
IDH1	Seq	DNA tumor	Variant of uncertain significance	p.R554W	2	c.1660C>T	5.47
ALDH2	Seq	DNA tumor	Variant of uncertain significance	p.R256fs*64	10	c.766_776del11	4.22

Immunohistochemistry Results

Biomarker	Result
PMS2	Negative| 3+, 48%
PR	Negative| 3+, 88%
AR	Positive| 1+, 50%
PTEN	Positive| 2+, 52%

Genes Tested with Indeterminate Results by Tumor DNA Sequencing

BTK CHEK2 NOTCH1 PRKCA BRAF

Specimen Information

Specimen ID: 2775

Specimen Collected: 2024-02-20

Specimen Recieved: 2024-02-26

Testing Initiated: 2024-02-26

Gross Description: 2775

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