

Patient	Specimen Information	Ordered By
Name: Michelle Stanley	Primary Tumor Site: Colorectal	
Date of Birth: 1937-09-15	Specimen Site: Rectum	
Sex: Male	Specimen ID: 3849	
Case Number: 4092	Specimen Collected: 2023-07-20	
Diagnosis: Lymphoma	Test Initiated: 2023-07-20	

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 BENEFIT	trastuzumab, ado-trastuzumab emtansine, pertuzumab, fam-trastuzumab deruxtecan-nxki, lapatinib, neratinib, tucatinib	level 1

Cancer-Type Relevant Biomarkers

BioMarker	Method	Analyte	Result
ARID2	Seq	RNA-Tumor	Fusion not detected
FBXW7	Seq	DNA-Tumor	Fusion not detected
ER	IHC	Protien	Negative  2+, 63%
ALK	Seq	RNA-Tumor	Mutation not detected
MUTYH	Seq	RNA-Tumor	Mutation not detected

BioMarker	Method	Analyte	Result
DNMT3A	Seq	DNA-Tumor	Fusion not detected
PD-L1(SP142)	IHC	Protien	Negative  1+, 73%
RNF43	Seq	DNA-Tumor	Mutation not detected
Mismatch repair status	IHC	Protien	Negative  1+, 55%

Genomic Signatures

BioMarker	Method	Analyte	Result
Microsatellite instability	Seq	DNA tumor	Low
Tumor mutational burden	Seq	DNA tumor	17 mutations/Mb High
Genomic loss of heterozygosity (LOH)	Seq	DNA tumor	Low - 6% 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 %
DPYD	Seq	DNA tumor	Benign	p.C481X	2	3	9.29
MYOD1	Seq	DNA tumor	Pathogenic	p.G12X	16	c.436G>A	11.46
FBXW7	Seq	DNA tumor	Benign	p.N515H	2	c	19.26
CSF1R	Seq	DNA tumor	Benign	p.A298P	15	c.115A>C	20.19
JAK2	Seq	DNA tumor	Benign	p.A298P	16	c.892G>C	7.41
IKZF1	Seq	DNA tumor	Benign	p.S2309Cfs*10	2	c.4394A>G	11.91

Gene Variants of Unknown Significance

Gene	Method	Analyte	Variant Interpretation	Protien Alteration	Exon	DNA Alteration	Allele Frequency %
CALR	Seq	DNA tumor	Variant of uncertain significance	p.L857P	19	3	11.62
NCSTN	Seq	DNA tumor	Variant of uncertain significance	p.P128L	17	c.383C>T	22.52
TEK	Seq	DNA tumor	Variant of uncertain significance	p.E455fs*7	17	c	13.77
NF1	Seq	DNA tumor	Variant of uncertain significance	p.I960V	9	c.2624C>A	14.99
SDHD	Seq	DNA tumor	Variant of uncertain significance	p.D842V	17	c.2525A>T	5.97

Immunohistochemistry Results

Biomarker	Result	Biomarker	Result
MSH2	Negative  3+, 29%	MLH1	Positive  3+, 97%
PR	Positive  1+, 69%	AR	Negative  3+, 95%
PMS2	Positive  1+, 69%	ERBB2	Negative  3+, 49%
ER	Negative  3+, 14%	PD-L1(SP142)	Negative  3+, 77%
MSH6	Negative  2+, 4%		

Genes Tested with Indeterminate Results by Tumor DNA Sequencing

MAPK1      KRAS      CD74      CTNNB1      HDAC1      BTK

Specimen Information

Specimen ID: 3849

Specimen Collected: 2023-07-20

Specimen Recieved: 2023-07-20

Testing Initiated: 2023-07-20

Gross Description: 3849

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