Breast Sample
Amanda Payne

Diagnosis
Invasive lobular carcinoma

Accession No.
1109

xT

Date of Birth
1972-11-07

Sex
Male

Physician
Dr. Donald Fowler

Institution
Lopez, Fisher and Bryan

Tumor specimen:
source Breast
CollectedDate 2023-09-16
ReceivedDate 2023-09-18
TumorPercentage 59%

Normal specimen:
source Blood
CollectedDate 2023-09-23
ReceivedDate 2023-09-29

GENOMIC VARIANTS

Somatic - Potentially Actionable		variant allele fraction
FOXL2	c.402C>G p.C134W Nonsense-GOF	15.4%

Somatic - Biologically Relevant		
NF1	c.6926del p.C134W Spliceregionvariant-GOF	33.58%
CDKN2A	c.151G>A p.N1465S Frameshift-GOF	24.97%

Germline - Pathogenic

No Germline - Pathogenic variants were found in the limited set of genes on which we report.

Pertinent Negatives

BLM RB1 BRCA2 CSF3R

IMMUNOTHERAPY MARKERS

Tumor Mutational Burden		Microsatellite Instability Status
1 m/Mb	58%	Stable Equivocal **High**

FDA-APPROVED THERAPIES, Current Diagnosis

KRAS G12C Inhibitors	**Sotorasib**	NCCN, Consensus, Non-Small Cell Lung Cancer MSK OncoKB, Level 1 KRASp.G12C G12C-GOF

FDA-APPROVED THERAPIES, Other Indications

KRAS G12C Inhibitors	**Sotorasib**	NCCN, Consensus, Non-Small Cell Lung Cancer MSK OncoKB, Level 1 KRASp.G12C G12C-GOF

ADDITIONAL INDICATORS

Unfavorable Prognosis	NCCN, Consensus, Non-Small Cell Lung Cancer KRASp.G12C Gain-of-function

CLINICAL TRIALS

A Study of VS-6766 v. VS-6766 + Defactinib in Recurrent G12V, Other KRAS and BRAF Non-Small Cell Lung Cancer	**Phase 2** City, state - x mi **KRAS mutation**
A Phase 1/2 Study of MRTX849 in Patients With Cancer Having a KRAS G12C Mutation KRYSTAL-1	**Phase 1/2** City, state - x mi **KRAS mutation** **STK11 mutation**
First-in-human Study of DRP-104 (Sirpiglenastat) as Single Agent and in Combination With Atezolizumab in Patients With Advanced Solid Tumors. (NCT04471415)	**Phase 1/2** City, state - x mi **NFE2L2 mutation** **STK11 mutation**

VARIANTS OF UNKNOWN SIGNIFICANCE

Somatic	Mutation effect	Variant allele fraction
STAG2	c.3113A>G p.R1012X Nonsense-LOF NM_001011645	14.49%
STAT5B	c.1924A>C p.N713_A714insKGKGGG Spliceregionvariant-GOF NM_001011645	5.58%
PRKCA	c.1387G>C p.D463H Missensevariant(exon2)-GOF NM_001011645	2.01%
BRCA2	c.5946delT p.S1982Rfs*22 Nonsense-GOF NM_001011645	4.43%
DICER1	c.5439G>C p.W1831* Nonsense-GOF NM_001011645	1.08%
CSF1R	c.1085A>G p.N648S Spliceregionvariant-LOF NM_001011645	4.41%
CTNNB1	c.98C>T p.D32N Frameshift-LOF NM_001011645	2.63%
CHD6	c.4800C>G p.I1600M Missensevariant(exon2)-GOF NM_001011645	4.36%
MYOD1	c.365T>G p.L122R Nonsense-GOF NM_001011645	5.95%

LOW COVERAGE REGIONS

STAT5B ARID2 MYOD1

SOMATIC VARIANT DETAILS - POTENTIALLY ACTIONABLE

FOXL2 c.402C>G p.C134W Nonsense-GOF VAF: 15.4%

TP53 encodes a protein that is a transcription factor that regulates the expression of genes involved in cell cycle arrest, apoptosis, and DNA repair. TP53 is a tumor suppressor gene that is mutated in many cancers. Mutations in TP53 are associated with cancer progression.

SOMATIC VARIANT DETAILS - BIOLOGICALLY RELEVANT

NF1 c.6926del p.C134W Spliceregionvariant-GOF VAF: 33.58%

FAT1 encodes a transmembrane protein involved in tumor suppressor signaling. FAT1 protein can regulate transcriptional activity by sequestering beta-catenin, thereby preventing it from entering the nucleus. Loss of function mutations and copy number loss of FAT1 are associated with cancer progression.

CDKN2A c.151G>A p.N1465S Frameshift-GOF VAF: 24.97%

KRAS is a GDP/GTP binding protein that acts as an intracellular signal transducer. KRAS is involved in several pathways involved in cellular proliferation and survival, including the PI3K-AKT-mTOR pathway and the Ras-Raf-MEK-ERK pathway. Activating mutations, copy number gains, and overexpression of KRAS are associated with cancer progression.

CLINICAL HISTORY

Diagnosed on

2023-09-09