Prostate Sample
Eric Rogers

Diagnosis
Small cell carcinoma

Accession No.
8512

xT

Date of Birth
1953-01-19

Sex
Female

Physician
Dr. Michelle Anderson

Institution
Dorsey-Robertson

Tumor specimen:
source Prostate
CollectedDate 2023-07-13
ReceivedDate 2023-07-16
TumorPercentage 34%

Normal specimen:
source Blood
CollectedDate 2023-07-18
ReceivedDate 2023-07-18

GENOMIC VARIANTS

Somatic - Potentially Actionable		variant allele fraction
FGFR1	c.1966A>G p.K656E Missensevariant(exon2)-GOF	33.56%
HRAS	c.35G>T p.G12V Spliceregionvariant-LOF	9.39%

Somatic - Biologically Relevant		
HBB	c.79G>A p.E122Q Spliceregionvariant-GOF	10.29%
U2AF1	c.3113A>G p.G12X Spliceregionvariant-LOF	5.71%
SRSF2	c.3113A>G p.R156X Nonsense-LOF	14.59%

Germline - Pathogenic

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

Pertinent Negatives

No Pertinent Negatives variants were found in the limited set of genes on which we report.

IMMUNOTHERAPY MARKERS

Tumor Mutational Burden

40 m/Mb 92%

Microsatellite Instability Status

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
MAP2K2	c.383C>T p.P128L Spliceregionvariant-LOF NM_001011645	14.7%
ALK	c.3260C>T p.F1245X Frameshift-LOF NM_001011645	7.53%
ALK	c.3512_3513delinsAT p.L1196M Missensevariant(exon2)-GOF NM_001011645	1.26%
SRSF2	c.3113A>G p.P95X Frameshift-LOF NM_001011645	6.87%
DPYD	c.557A>G p.I560S Nonsense-GOF NM_001011645	8.98%
CHEK2	c.470T>C p.S428F Spliceregionvariant-GOF NM_001011645	5.3%
DDR2	c.1912A>T p.I638F Spliceregionvariant-GOF NM_001011645	8.49%
RB1	c.3113A>G p.F650S Spliceregionvariant-GOF NM_001011645	9.72%
HSD3B1	c.1100= p.T367N Missensevariant(exon2)-GOF NM_001011645	2.78%
STAT5B	c.1924A>C p.N713_A714insKGKGGG Nonsense-GOF NM_001011645	2.47%
NCSTN	c.3113A>G p.A572G Nonsense-LOF NM_001011645	7.84%
MAP2K2	c.383C>T p.P128L Spliceregionvariant-LOF NM_001011645	8.73%

LOW COVERAGE REGIONS

TLR8

SOMATIC VARIANT DETAILS - POTENTIALLY ACTIONABLE

FGFR1 c.1966A>G p.K656E Missensevariant(exon2)-GOF VAF: 33.56%

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.

HRAS c.35G>T p.G12V Spliceregionvariant-LOF VAF: 9.39%

ARID2 encodes a protein that is a subunit of the SWI/SNF chromatin remodeling complex SWI/SNF-B or PBAF. This complex functions in ligand-dependent transcriptional activation. Loss of function mutations and copy number loss of ARID2 are associated with cancer progression.

SOMATIC VARIANT DETAILS - BIOLOGICALLY RELEVANT

HBB c.79G>A p.E122Q Spliceregionvariant-GOF VAF: 10.29%

RBM10 encodes a protein that contains a RNA-binding motif and interacts with RNA homopolymers, and is thought to function in regulating alternative splicing. Loss of function mutations and copy number loss of RBM10 are associated with cancer progression.

U2AF1 c.3113A>G p.G12X Spliceregionvariant-LOF VAF: 5.71%

STK11 (LKB1) encodes an enzyme in the serine/threonine kinase family that is responsible for maintaining energy metabolism and cellular polarization through the activation of AMP-activated protein kinase and other members of the AMPK family. The enzyme also acts as a tumor suppressor by regulating cell growth. Loss of function mutations, copy number loss, epigenetic variation, and underexpression of STK11 are associated with cancer progression.

SRSF2 c.3113A>G p.R156X Nonsense-LOF VAF: 14.59%

BCL11B encodes a C2H2-type zinc finger protein that functions as a transcriptional repressor and plays a role in T-cell development and survival. Loss of function mutations, copy number loss, and fusions resulting in the underexpression of BCL11B are associated with cancer progression.

CLINICAL HISTORY

Diagnosed on

2023-07-11