Prostate Sample
Mark Abbott

Diagnosis
Small cell carcinoma

Accession No.
5657

xT

Date of Birth
1981-01-13

Sex
Female

Physician
Dr. Bradley Huang

Institution
Chandler-Hernandez

Tumor specimen:
source Prostate
CollectedDate 2023-09-14
ReceivedDate 2023-09-18
TumorPercentage 42%

Normal specimen:
source Blood
CollectedDate 2023-09-17
ReceivedDate 2023-09-22

GENOMIC VARIANTS

Somatic - Potentially Actionable		variant allele fraction
IKZF1	c.3113A>G p.N159Y Missensevariant(exon2)-GOF	39.35%
HBB	c.79G>A p.E7K Missensevariant(exon2)-GOF	14.8%
XPC	c.3113A>G p.S346P Frameshift-LOF	28.56%

Somatic - Biologically Relevant		
PTEN	c.545T>A p.R130Q Nonsense-GOF	7.51%
NCSTN	c.3113A>G p.R130L Spliceregionvariant-GOF	2.35%

Germline - Pathogenic

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

Pertinent Negatives

CDC73

IMMUNOTHERAPY MARKERS

Tumor Mutational Burden

28 m/Mb 82%

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 Frameshift-LOF NM_001011645	12.58%
HRAS	c.35G>T p.G12V Stopgain-LOF NM_001011645	11.95%
ARID2	c.798G>A p.W266* Frameshift-GOF NM_001011645	6.95%
NOTCH1	c.7507C>T p.S2467Gfs*11 Spliceregionvariant-LOF NM_001011645	1.65%
STAG2	c.3113A>G p.R1012X Frameshift-LOF NM_001011645	4.25%
MUTYH	c.1014G>C p.Q338H Frameshift-LOF NM_001011645	9.5%
MPL	c.1543_1544delinsAA p.W515L Nonsense-GOF NM_001011645	4.12%
CHEK2	c.470T>C p.S428F Nonsense-LOF NM_001011645	6.82%

Germline	**Mutation effect**	**Condition**
SDHD	c.34G>A p.G12S Spliceregionvariant-LOF NM_001011645	local
RNF43	c.380G>C p.E318D Nonsense-GOF NM_001011645	night

LOW COVERAGE REGIONS

CHEK2

SOMATIC VARIANT DETAILS - POTENTIALLY ACTIONABLE

IKZF1 c.3113A>G p.N159Y Missensevariant(exon2)-GOF VAF: 39.35%

PTEN encodes a phosphatase that acts as a tumor suppressor by negatively regulating the PI3K-AKT-mTOR pathway. Loss of function mutations, copy number loss, and underexpression of PTEN are associated with cancer progression.

HBB c.79G>A p.E7K Missensevariant(exon2)-GOF VAF: 14.8%

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.

XPC c.3113A>G p.S346P Frameshift-LOF VAF: 28.56%

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.

SOMATIC VARIANT DETAILS - BIOLOGICALLY RELEVANT

PTEN c.545T>A p.R130Q Nonsense-GOF VAF: 7.51%

PTEN encodes a phosphatase that acts as a tumor suppressor by negatively regulating the PI3K-AKT-mTOR pathway. Loss of function mutations, copy number loss, and underexpression of PTEN are associated with cancer progression.

NCSTN c.3113A>G p.R130L Spliceregionvariant-GOF VAF: 2.35%

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.

CLINICAL HISTORY

Diagnosed on

2023-09-05