Prostate Sample
Jasmine Hood

Diagnosis
Squamous cell carcinoma

Accession No.
4726

xT

Date of Birth
1960-09-25

Sex
Male

Physician
Dr. Rachel Wright

Institution
Crawford and Sons

Tumor specimen:
source Prostate
CollectedDate 2023-11-30
ReceivedDate 2023-11-30
TumorPercentage 65%

Normal specimen:
source Blood
CollectedDate 2023-12-07
ReceivedDate 2023-12-09

GENOMIC VARIANTS

Somatic - Potentially Actionable		variant allele fraction
BRCA1	c.5265_5266insC p.E23Vfs*17 Frameshift-LOF	15.0%
TOP2A	c.3113A>G p.A1515S Frameshift-LOF	7.18%

Somatic - Biologically Relevant		
ARID2	c.798G>A p.A1515S Stopgain-LOF	10.79%
ALDH2	c.1510G>A p.A1515S Stopgain-LOF	21.97%
DDR2	c.716T>G p.L239R Stopgain-LOF	10.49%
ERCC2	c.3113A>G p.E504K Stopgain-LOF	12.08%
PKLR	c.1436G>A p.F332V Spliceregionvariant-LOF	1.33%

Germline - Pathogenic

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

Pertinent Negatives

MUTYH ALK DNMT3A PTEN

IMMUNOTHERAPY MARKERS

Tumor Mutational Burden

2 m/Mb 31%

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
FGFR1	c.1966A>G p.K656E Frameshift-LOF NM_001011645	6.58%
ARID2	c.798G>A p.W266* Spliceregionvariant-LOF NM_001011645	18.0%
RNF43	c.505G>A p.A169T Nonsense-GOF NM_001011645	8.93%
PIK3CA	c.1624G>C p.E545G Frameshift-GOF NM_001011645	1.99%
TP53	c.743G>A p.V272M Frameshift-GOF NM_001011645	4.02%
B2M	c.2T>G p.M1R Spliceregionvariant-LOF NM_001011645	6.01%
EGFR	c.866C>A p.V769M Spliceregionvariant-GOF NM_001011645	9.45%
STAG2	c.3113A>G p.R1012X Spliceregionvariant-LOF NM_001011645	6.99%
PHF6	c.3113A>G p.R225X Spliceregionvariant-LOF NM_001011645	7.08%
CDKN2A	c.248_249delinsCT p.A102V Missensevariant(exon2)-GOF NM_001011645	1.19%

LOW COVERAGE REGIONS

CHEK2 PTPN11 HDAC2

SOMATIC VARIANT DETAILS - POTENTIALLY ACTIONABLE

BRCA1 c.5265_5266insC p.E23Vfs*17 Frameshift-LOF VAF: 15.0%

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.

TOP2A c.3113A>G p.A1515S Frameshift-LOF VAF: 7.18%

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SOMATIC VARIANT DETAILS - BIOLOGICALLY RELEVANT

ARID2 c.798G>A p.A1515S Stopgain-LOF VAF: 10.79%

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.

ALDH2 c.1510G>A p.A1515S Stopgain-LOF VAF: 21.97%

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.

DDR2 c.716T>G p.L239R Stopgain-LOF VAF: 10.49%

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.

ERCC2 c.3113A>G p.E504K Stopgain-LOF VAF: 12.08%

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.

PKLR c.1436G>A p.F332V Spliceregionvariant-LOF VAF: 1.33%

NFE2L2 acts as a transcription factor for proteins that contain an antioxidant response element (ARE) within their promoter sequence. Genes that contain ARE are involved in injury and inflammation response. Activating mutations and overexpression of NFE2L2 are associated with cancer progression.

CLINICAL HISTORY

Diagnosed on

2023-11-26