Colorectal Sample
Gloria Potter

Diagnosis
Lymphoma

Accession No.
2047

xT

Date of Birth
1998-09-08

Sex
Male

Physician
Dr. Laurie Clark

Institution
Soto-Norris

Tumor specimen:
source Colorectal
CollectedDate 2023-09-09
ReceivedDate 2023-09-09
TumorPercentage 51%

Normal specimen:
source Blood
CollectedDate 2023-09-14
ReceivedDate 2023-09-14

GENOMIC VARIANTS

Somatic - Potentially Actionable		variant allele fraction
TEK	c.1354A>G p.N452D Frameshift-GOF	31.81%

Somatic - Biologically Relevant		
IKZF1	c.3113A>G p.N159Y Frameshift-LOF	33.51%
IDH2	c.419G>A p.R172W Spliceregionvariant-LOF	16.96%
ALK	c.3512_3513delinsAT p.R172S Spliceregionvariant-LOF	22.44%
MYO1G	c.145G>A p.T1087I Spliceregionvariant-LOF	13.92%

Germline - Pathogenic

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

Pertinent Negatives

KRAS HDAC2 MET B2M

IMMUNOTHERAPY MARKERS

Tumor Mutational Burden

45 m/Mb 67%

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**
ARID2	c.798G>A p.W266* Spliceregionvariant-LOF NM_001011645	19.15%
TEK	c.1354A>G p.N452D Frameshift-GOF NM_001011645	5.15%
PTPN11	c.1508G>C p.G503A Spliceregionvariant-LOF NM_001011645	6.83%
SRSF2	c.3113A>G p.P95X Nonsense-LOF NM_001011645	3.86%
SMO	c.3113A>G p.A374E Spliceregionvariant-GOF NM_001011645	2.5%
KIT	c.2576T>C p.L813P Spliceregionvariant-LOF NM_001011645	9.5%
PDGFRA	c.1153_1154delinsTC p.K385X Stopgain-LOF NM_001011645	5.29%
MYCN	c.131C>T p.P44L Frameshift-LOF NM_001011645	8.11%
Germline	**Mutation effect**	**Condition**
FLT3	c.1992G>A p.V592A Nonsense-LOF NM_001011645	may
CALR	c.1154_1155insTTGTC p.L367fs*46 Stopgain-LOF NM_001011645	value

LOW COVERAGE REGIONS

FGFR1

SOMATIC VARIANT DETAILS - POTENTIALLY ACTIONABLE

TEK c.1354A>G p.N452D Frameshift-GOF VAF: 31.81%

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

IKZF1 c.3113A>G p.N159Y Frameshift-LOF VAF: 33.51%

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.

IDH2 c.419G>A p.R172W Spliceregionvariant-LOF VAF: 16.96%

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.

ALK c.3512_3513delinsAT p.R172S Spliceregionvariant-LOF VAF: 22.44%

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.

MYO1G c.145G>A p.T1087I Spliceregionvariant-LOF VAF: 13.92%

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.

CLINICAL HISTORY

Diagnosed on

2023-09-05