Leukemia Sample
Tanner Harris

Diagnosis
Chronic lymphocytic leukemia (CLL)

Accession No.
3950

xT

Date of Birth
1988-04-26

Sex
Female

Physician
Dr. Kimberly Lee

Institution
Austin and Sons

Tumor specimen:
source Leukemia
CollectedDate 2023-11-07
ReceivedDate 2023-11-07
TumorPercentage 39%

Normal specimen:
source Blood
CollectedDate 2023-11-09
ReceivedDate 2023-11-10

GENOMIC VARIANTS

Somatic - Potentially Actionable		variant allele fraction
FBXW7	c.1394G>A p.R465H Missensevariant(exon2)-GOF	25.84%
B2M	c.2T>G p.M1R Spliceregionvariant-LOF	7.14%
NOTCH1	c.7398_7399insGG p.S2467Pfs*7 Frameshift-LOF	15.36%
PHF6	c.3113A>G p.R225X Nonsense-LOF	13.59%

Somatic - Biologically Relevant		
PTEN	c.389G>T p.R130L Missensevariant(exon2)-GOF	2.92%
NCSTN	c.3113A>G p.R130L Nonsense-LOF	14.44%

Germline - Pathogenic

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

Pertinent Negatives

SDHD SF3B1 PRKCA

IMMUNOTHERAPY MARKERS

Tumor Mutational Burden

15 m/Mb 77%

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
IKZF1	c.3113A>G p.N159Y Frameshift-GOF NM_001011645	6.53%
JAK2	c.2047A>G p.G996R Stopgain-LOF NM_001011645	9.92%
FGFR4	c.1162G>A p.G388R Nonsense-GOF NM_001011645	11.06%
PHF6	c.3113A>G p.R225X Frameshift-GOF NM_001011645	3.28%
CCND3	c.766_776del11 p.R256fs*64 Frameshift-LOF NM_001011645	3.82%
PTEN	c.389G>C p.R130P Missensevariant(exon2)-GOF NM_001011645	7.65%
PIK3CA	c.1634A>T p.E545V Frameshift-GOF NM_001011645	3.3%
FOXL2	c.402C>G p.C134W Frameshift-GOF NM_001011645	4.96%
PIK3CA	c.3139C>T p.E545K Spliceregionvariant-LOF NM_001011645	8.81%

LOW COVERAGE REGIONS

BRAF KRAS

SOMATIC VARIANT DETAILS - POTENTIALLY ACTIONABLE

FBXW7 c.1394G>A p.R465H Missensevariant(exon2)-GOF VAF: 25.84%

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.

B2M c.2T>G p.M1R Spliceregionvariant-LOF VAF: 7.14%

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.

NOTCH1 c.7398_7399insGG p.S2467Pfs*7 Frameshift-LOF VAF: 15.36%

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.

PHF6 c.3113A>G p.R225X Nonsense-LOF VAF: 13.59%

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.

SOMATIC VARIANT DETAILS - BIOLOGICALLY RELEVANT

PTEN c.389G>T p.R130L Missensevariant(exon2)-GOF VAF: 2.92%

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 Nonsense-LOF VAF: 14.44%

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.

CLINICAL HISTORY

Diagnosed on

2023-11-06