Leukemia Sample
Jennifer Houston

Diagnosis
Chronic myeloid leukemia (CML)

Accession No.
9048

xT

Date of Birth
1996-08-11

Sex
Female

Physician
Dr. Christopher Reynolds

Institution
White, Jones and Carlson

Tumor specimen:
source Leukemia
CollectedDate 2024-03-08
ReceivedDate 2024-03-14
TumorPercentage 50%

Normal specimen:
source Blood
CollectedDate 2024-03-12
ReceivedDate 2024-03-12

GENOMIC VARIANTS

Somatic - Potentially Actionable		variant allele fraction
ARID2	c.798G>A p.W266* Stopgain-LOF	5.87%

Somatic - Biologically Relevant		
CALR	c.1154_1155insTTGTC p.L367fs*46 Spliceregionvariant-LOF	10.76%
CSF3R	c.3113A>G p.W266* Missensevariant(exon2)-GOF	25.98%
CDC73	c.1A>G p.W266* Stopgain-LOF	17.65%

Germline - Pathogenic

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

Pertinent Negatives

PTCH1 PDGFRB SF3B1 CALR

IMMUNOTHERAPY MARKERS

Tumor Mutational Burden

41 m/Mb 23%

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**
SRSF2	c.3113A>G p.P95X Spliceregionvariant-LOF NM_001011645	21.92%
ARID2	c.798G>A p.W266* Spliceregionvariant-LOF NM_001011645	6.58%
CDC73	c.1A>G p.M1V Missensevariant(exon2)-GOF NM_001011645	2.18%
PDGFRB	c.3113A>G p.T681I Frameshift-LOF NM_001011645	3.56%
IDH1	c.356G>A p.R132X Nonsense-LOF NM_001011645	7.26%
JAK3	c.3113A>G p.L857P Nonsense-LOF NM_001011645	2.48%
Germline	**Mutation effect**	**Condition**
GNAS	c.679C>G p.Q227R Spliceregionvariant-LOF NM_001011645	report

LOW COVERAGE REGIONS

ERCC2 IDH1

SOMATIC VARIANT DETAILS - POTENTIALLY ACTIONABLE

ARID2 c.798G>A p.W266* Stopgain-LOF VAF: 5.87%

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

CALR c.1154_1155insTTGTC p.L367fs*46 Spliceregionvariant-LOF VAF: 10.76%

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.

CSF3R c.3113A>G p.W266* Missensevariant(exon2)-GOF VAF: 25.98%

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.

CDC73 c.1A>G p.W266* Stopgain-LOF VAF: 17.65%

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

2024-03-07