

Genomic Cancer Report

Comprehensive somatic mutation analysis · Solid tumor panel v4.1

PATIENT	SAMPLE ID	TUMOR TYPE
Jane Smith, 54F	TUM-2024-04821	Non-small cell lung cancer
REPORT DATE	ORDERING PHYSICIAN	TUMOR PURITY
2026-05-28	Dr. K. Tanaka	72%

Summary

VARIANTS DETECTED 4 3 pathogenic · 1 VUS	ACTIONABLE VARIANTS 3 FDA-approved therapies available	TMB 12.4 mut/Mb Intermediate	MSI STATUS MSS Microsatellite stable
---	---	---	---

Detected variants

COSMIC ClinVar OncoKB/CIVI C

EGFR p.L858R (c.2573T>G)
Chr7:55,191,822 · Exon 21 · missense **Pathogenic**

COSMIC ID: **COSV55497715**
COSM6224

FREQUENCY IN TUMOR TYPE: **~43.0%**
1,842 / 4,280 samples

ClinVar: **Pathogenic**
5★ · 14 submitters

■ T790M secondary mutation confers resistance to 1st/2nd gen EGFR-TKIs — osimertinib preferred

A change in the EGFR gene was found. This is one of the most common and well-studied mutations in lung cancer. Targeted therapies are specifically designed to block this mutation. Your doctor will discuss the most suitable option.

Treatment options

- 1** **Osimertinib (Tagrisso)** FDA approved
EGFR L858R · NSCLC 1L/2L · FDA approved 2018
- 1** **Erlotinib / Gefitinib** FDA approved
EGFR L858R · 1G TKI · resistance risk with T790M co-mutation
- 2A** **Amivantamab + lazertinib** Clinical t
Post-osimertinib progression · NCT04080836

TP53**p.R248W (c.742C>T)**

Chr17:7,674,220 · Exon 7 · missense

Pathogenic

COSMIC ID

COSV52765807

FREQUENCY IN TUMOR TYPE

~3.1%

133 / 4,280 samples

ClinVar

Pathogenic

5★ · 22 submitters

A change in the TP53 gene was found. TP53 normally helps protect cells from becoming cancerous. While no drug specifically targets this change yet, it helps your doctor understand your cancer and choose the best treatment.

Treatment options

STK11**p.Q369* (c.1105C>T)**

Chr19:1,221,464 · Exon 8 · nonsense

Pathogenic

COSMIC ID

COSV56781203

FREQUENCY IN TUMOR TYPE

~8.4%

360 / 4,280 samples

ClinVar

Pathogenic

4★ · 9 submitters

■ STK11 loss associated with reduced PD-L1 immunotherapy response in NSCLC

A change in the STK11 gene was detected. This gene normally helps regulate cell growth. This finding may influence which treatment your doctor recommends, particularly regarding immunotherapy.

Treatment options

2A Pembrolizumab — reduced benefit

STK11 loss associated with IO resistance; consider combination strategies

Caut

1**p.R272C (c.814C>T)**

Chr19:10,486,351 · Exon 4 · missense

VUS

COSMIC ID

COSV99102841

FREQUENCY IN TUMOR TYPE

~1.2%

51 / 4,280 samples

ClinVar

VUS

2★ · 4 submitters

A change in the KEAP1 gene was found. At this time, there is not enough evidence to know whether this change causes cancer or is harmless — we call this a 'variant of uncertain significance.' Your doctor will monitor this finding and update you if new research sheds light on it.

Treatment options

Data sources

Somatic Variants: COSMIC v99 (commercial license) · **Variant Classification:** ClinVar 2026-05 (NCBI) · **Actionability:** OncoKB v4.x + CIViC (accessed 2026-05-28) · **Population Frequency:** gnomAD v4.1

Disclaimer: This report is provided for informational and research purposes only. COSMIC data is used under commercial license and is not approved for clinical decision-making as a standalone resource. All treatment decisions must be made by a qualified oncologist in conjunction with full clinical context. Variant interpretations reflect current evidence as of report date and may change as new data emerge. ClinVar classifications represent community consensus and may differ from institutional interpretations. This sample report contains illustrative data only — no real patient data is included.