ACTIN Report (research use only)

PATIENT
EXAMPLE-LUNG-01

REPORT DATE
17-Apr-2025

Gender: Female | Birth year: 1975 | WHO: 1

Tumor: Lung adenocarcinoma | Lesions: Liver, Lung | Stage: IV

Summary

Clinical summary

Gender	**Female**	Birth year	**1975**
WHO	**1**	Tumor	**Lung adenocarcinoma**
Lesions	**Liver, Lung**	Stage	**IV**
Measurable disease (RECIST)	**Yes**	DPYD	***1_HOM (Normal function)**
		UGT1A1	***1_HOM (Normal function)**

Relevant systemic treatment history	**6/2023-1/2025**	**Osimertinib**
Relevant other oncological history	**None**	
Previous primary tumor	**None**	
Relevant non-oncological history	**2023**	**Rheumatoid arthritis**
Recent molecular results	**KRAS G12C (0.3/2 copies)*, KRAS G12D (0.3/2 copies)*, NRAS: No reportable events, BRAF: No reportable events, HER2: No reportable events, MSS**	

Recent molecular results

Hartwig WGS (22-Feb-2025)

Biopsy location	**Lung (purity 50%)**
Molecular tissue of origin prediction	**Lung: Non-small cell: LUAD (98%)**
Tumor mutational load / burden	**TML 160 / TMB 14 mut/Mb**
Microsatellite (in)stability	**Stable**
HR status	**Proficient (0)**
Driver mutations	**EGFR C797S, EGFR L858R, KRAS G12C, KRAS G12D**
Amplified genes	**None**
Deleted genes	**TP53**
Homozygously disrupted genes	**None**
Gene fusions	**MET(exon13)::MET(exon15) fusion**
Virus	**None**
Potential trial events, considered no high driver	**None**

IHC results

PD-L1	**Score > 50%**

Standard of care options considered potentially eligible

There are no standard of care treatment options for this patient

Trials in NL that are open and potentially eligible (3 cohorts from 3 trials)

Trial	Cohort	Molecular	Sites	Warnings
METC 04 TEDR1	Lung cancer C797S cohort	EGFR C797S	NKI-AvL	None
METC 02 KAYRAS	Dose expansion - monotherapy - NSCLC	KRAS G12D	Erasmus MC	Variant(s) G12D in KRAS but subclonal likelihood of > 50%
EGFR-L858R-TRIAL	*EGFR L858R*	*EGFR L858R*	*Elisabeth-TweeSteden Ziekenhuis*	

Trials matched solely on molecular event and tumor type (no clinical data used) are shown in italicized, smaller font.
1 trial filtered due to eligible local trials for the same molecular target and/or the trial is for young adult patients. See Other Trial Matching Results for filtered matches.

International trials that are open and potentially eligible (1 cohort from 1 trial)

Trial	Cohort	Molecular	Sites
KRAS-G12C-TRIAL-DE	KRAS G12C	KRAS G12C	Germany: Stuttgart

International trials are matched solely on molecular event and tumor type (clinical data excluded).
1 trial filtered due to trials recruiting nationally for the same molecular target. See Other Trial Matching Results for filtered matches.

Trials and cohorts that are considered ineligible (2)

Trial	Cohort	Molecular	Ineligibility reasons
METC 03 NO-SEE797ES	Dose escalation - monotherapy	EGFR C797S	C797S in EGFR in canonical transcript
METC 02 KAYRAS	Dose expansion - monotherapy - Colorectum	KRAS G12D	No colorectal cancer

Resistance evidence

Resistance evidence

There are no standard of care treatment options for this patient

Molecular Details

Hartwig WGS (EXAMPLE-LUNG-01-T, 22-Feb-2025)

General

Purity	Ploidy	TML Status	TMB Status	MS Stability	HR Status	DPYD	UGT1A1
50%	2.3	**High (160)**	**High (14)**	Stable	Proficient (0)	*1_HOM (Normal function)	*1_HOM (Normal function)

Predicted tumor origin

	1. Lung: Non-small cell: LUAD
Combined prediction score	**98%**
This score is calculated by combining information on:	
(1) SNV types	60%
(2) SNV genomic localisation distribution	70%
(3) Driver genes and passenger characteristics	80%

Other cohorts have a combined prediction of 2% or lower

Drivers

Type	Driver	Trials (Locations)	Trials in Hartwig	Best evidence in External	Resistance in External
Mutation (gain of function)	EGFR C797S (1/4 copies)	TEDR1 (NKI-AvL)		Pre-clinical	
Mutation (gain of function)	EGFR L858R (2/4 copies)		NCT00000006	Approved	
Mutation (gain of function)	KRAS G12C (0.3/2 copies)*		NCT00000009		
Mutation (gain of function)	KRAS G12D (0.3/2 copies)*	KAYRAS (Erasmus MC)			
Deletion	TP53 del, 0 copies				
Known fusion	MET(exon13)::MET(exon15) fusion				

* Variant has > 50% likelihood of being sub-clonal

IHC results

PD-L1	**Score > 50%**

Molecular History

Molecular history

Event	Description	2025-02-22 Hartwig WGS
EGFR L858R (Tier I)	Mutation (gain of function)	VAF 0.5%
EGFR C797S (Tier II)	Mutation (gain of function)	VAF 0.25%
KRAS G12C (Tier III)	Mutation (gain of function)	VAF 0.15%
KRAS G12D (Tier III)	Mutation (gain of function)	VAF 0.15%
MET(exon13)::MET(exon15) fusion (Tier III)	Known fusion Gain of function	Detected
TP53 del (Tier III)	Deletion Unknown protein effect	Detected
TMB		14.0
MSI		Stable

SOC literature efficacy evidence

Standard of care options considered potentially eligible

The following standard of care treatment(s) could be an option for this patient. For further details per study see 'SOC literature details' section in extended report.

There are no standard of care treatment options for this patient

Clinical Details

Clinical summary

Relevant systemic treatment history	**6/2023-1/2025**	**Osimertinib**
Relevant other oncological history	**None**	
Previous primary tumor	**None**	
Relevant non-oncological history	**2023**	**Rheumatoid arthritis**

Patient current details (20-Feb-2025)

Unresolved toxicities grade => 2	**None**
LVEF	**50%**
Cancer-related complications	**None**
Known allergies	**None**
Recent surgeries	**01-Aug-2024 Cholecystectomy**

Tumor details (20-Feb-2025)

Measurable disease	**Yes**
CNS lesion status	**No known CNS lesions**
Brain lesion status	**No known brain lesions**

Active medication details

Medication	Administration route	Start date	Stop date	Dosage	Frequency
St. John's Wort	Oral	01-Feb-2023		300 MILLIGRAMS	1 / 2 DAYS

Blood transfusions

Product	Date
ERTHROCYTES_FILTERED	20-Sep-2024

SOC literature details

There are no standard of care treatment options for this patient

Molecular Evidence

On label clinical evidence

Event	CKB Event	Level A	Level B	Level C	Level D
EGFR C797S	EGFR C797S				AFATINIB *Lung non-small cell carcinoma (2015)*
EGFR L858R	EGFR L858R	OSIMERTINIB *Lung non-small cell carcinoma (2016)* AFATINIB *Lung non-small cell carcinoma (2013)*			

Off label clinical evidence

Event	CKB Event	Level A	Level B	Level C	Level D
None					

Efficacy evidence description

EGFR L858R			
OSIMERTINIB:	Level A (2016)	**Lung non-small cell carcinoma**	Osimertinib is effective in patients with EGFR L858R mutations
AFATINIB:	Level A (2013)	**Lung non-small cell carcinoma**	Afatinib is effective in patients with EGFR L858R mutations
EGFR C797S			
AFATINIB:	Level D (2015)	**Lung non-small cell carcinoma**	In a case-report, afatinib was effective against EGFR L858R/C797S positive lung cancer.

Treatment ranking

Treatment	Events	Score
AFATINIB	EGFR L858R EGFR C797S	2,150
OSIMERTINIB	EGFR L858R	1,900

Other Trial Matching Results

Trials in NL that are open and potentially eligible (1 cohort from 1 trial)

Trial	Cohort	Molecular	Sites	Warnings
EGFR-L858R-TRIAL	EGFR L858R	EGFR L858R	Elisabeth-TweeSteden Ziekenhuis	

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1 trial filtered due to trials recruiting nationally for the same molecular target. See Other Trial Matching Results for filtered matches.

Filtered trials potentially eligible based on molecular results which are potentially recruiting (2)

Trial	Cohort	Molecular	Sites
EGFR-C797S-TRIAL	EGFR C797S	EGFR C797S	Elisabeth-TweeSteden Ziekenhuis
EGFR-BE	EGFR L858R	EGFR L858R	Belgium: Brussels