



Sample Information

Patient Name: 陳瑞財**Gender:** Male**ID No.:** N121640784**History No.:** 45223889**Age:** 61**Ordering Doctor:** DOC8647B 吳沛禧**Ordering REQ.:** 0BAHEYZ**Signing in Date:** 2021/01/06**Path No.:** S110-98018**MP No.:** F21002**Assay:** Oncomine Focus Assay**Sample Type:** FFPE**Block No.:** S109-64736A**Percentage of tumor cells:** 30%**Note:**

Sample Cancer Type: Non-Small Cell Lung Cancer

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Relevant Non-Small Cell Lung Cancer Variants

Gene	Finding	Gene	Finding
ALK	Not detected	NTRK1	Not detected
BRAF	Not detected	NTRK2	Not detected
EGFR	EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (EGFR exon 19 deletion), EGFR p.(T790M) c.2369C>T, EGFR amplification	NTRK3	Not detected
ERBB2	Not detected	RET	Not detected
KRAS	KRAS amplification	ROS1	Not detected
MET	Not detected		



Relevant Biomarkers

Tier	Genomic Alteration	Relevant Therapies (In this cancer type)	Relevant Therapies (In other cancer type)	Clinical Trials
IA	EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAA GCA EGFR exon 19 deletion epidermal growth factor receptor Allele Fraction: 0.780	bevacizumab* + erlotinib ² erlotinib + ramucirumab ^{1,2} osimertinib ^{1,2} afatinib + cetuximab atezolizumab + bevacizumab + chemotherapy bevacizumab + gefitinib gefitinib + chemotherapy	None	98
IA	EGFR p.(T790M) c.2369C>T epidermal growth factor receptor Allele Fraction: 0.604	osimertinib ^{1,2}	None	67
IIC	PIK3CA p.(E545K) c.1633G>A phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha Allele Fraction: 0.212	None	alpelisib + hormone therapy ^{1,2}	13
IIC	KRAS amplification KRAS proto-oncogene, GTPase	None	None	8
IIC	EGFR amplification epidermal growth factor receptor	None	None	4

Public data sources included in relevant therapies: FDA¹, NCCN, EMA², ESMO

Tier Reference: Li et al. Standards and Guidelines for the Interpretation and Reporting of Sequence Variants in Cancer: A Joint Consensus Recommendation of the Association for Molecular Pathology, American Society of Clinical Oncology, and College of American Pathologists. J Mol Diagn. 2017 Jan;19(1):4-23.

* Includes biosimilars

Alerts informed by public data sources: ⛔ Contraindicated, 🛡️ Resistance

EGFR p.(T790M) c.2369C>T ⛔ **gefitinib**²
🛡️ afatinib, dacomitinib, erlotinib, gefitinib

Public data sources included in alerts: FDA¹, NCCN, EMA², ESMO

Variant Details

DNA Sequence Variants

Gene	Amino Acid Change	Coding	Variant ID	Locus	Allele Fraction	Transcript	Variant Effect	Coverage
PIK3CA	p.(E545K)	c.1633G>A	COSM763	chr3:178936091	0.212	NM_006218.3	missense	1999
EGFR	p.(E746_A750del)	c.2236_2250delGAA TTAAGAGAAGCA	COSM6225	chr7:55242465	0.780	NM_005228.4	nonframeshift Deletion	1966
EGFR	p.(T790M)	c.2369C>T	COSM6240	chr7:55249071	0.604	NM_005228.4	missense	1997
ALK	p.(D1529E)	c.4587C>G	.	chr2:29416366	1.000	NM_004304.4	missense	1998
ALK	p.(I1461V)	c.4381A>G	.	chr2:29416572	0.995	NM_004304.4	missense	1997
ALK	p.(=)	c.3375C>A	.	chr2:29445458	1.000	NM_004304.4	synonymous	1995



Variant Details (continued)

DNA Sequence Variants (continued)

Gene	Amino Acid Change	Coding	Variant ID	Locus	Allele Fraction	Transcript	Variant Effect	Coverage
FGFR3	p.(=)	c.1953G>A	.	chr4:1807894	0.997	NM_000142.4	synonymous	1999
PDGFRA	p.(=)	c.1701A>G	.	chr4:55141055	1.000	NM_006206.5	synonymous	1998
FGFR4	p.(P136L)	c.407C>T	.	chr5:176517797	0.985	NM_213647.2	missense	1999
EGFR	p.(=)	c.2361G>A	.	chr7:55249063	0.153	NM_005228.4	synonymous	2000
RET	p.(=)	c.2307G>T	.	chr10:43613843	0.520	NM_020975.4	synonymous	1996

Copy Number Variations

Gene	Locus	Copy Number
EGFR	chr7:55198956	14.97
KRAS	chr12:25364761	6.63

Biomarker Descriptions

EGFR (epidermal growth factor receptor)

Background: The EGFR gene encodes the epidermal growth factor receptor (EGFR) tyrosine kinase, a member of the ERBB/human epidermal growth factor receptor (HER) family. In addition to EGFR/ERBB1/HER1, other members of the ERBB/HER family include ERBB2/HER2, ERBB3/HER3, and ERBB4/HER4¹. EGFR ligand induced dimerization results in kinase activation and leads to stimulation of oncogenic signaling pathways including the PI3K/AKT/MTOR and RAS/RAF/MEK/ERK pathways. Activation of these pathways promote cell proliferation, differentiation, and survival^{2,3}.

Alterations and prevalence: Recurrent somatic mutations in the tyrosine kinase domain (TKD) of EGFR are observed in approximately 10-20% of lung adenocarcinoma, and at higher frequencies in never-smoker, female, and Asian populations^{4,5,6,7}. The most common mutations occur near the ATP-binding pocket of the TKD and include short in-frame deletions in exon 19 (EGFR exon 19 deletion) and the L858R amino acid substitution in exon 21⁸. These mutations constitutively activate EGFR resulting in downstream signaling, and represent 80% of the EGFR mutations observed in lung cancer. A second group of less prevalent activating mutations include E709K, G719X, S768I, L861Q, and short in-frame insertion mutations in exon 20^{9,10,11,12}. EGFR activating mutations in lung cancer tend to be mutually exclusive to KRAS activating mutations¹³. In contrast, a different set of recurrent activating EGFR mutations in the extracellular domain include R108K, A289V and G598V and are primarily observed in glioblastoma^{8,14}. Amplification of EGFR is observed in several cancer types including 30% of glioblastoma, 12% of esophageal cancer, 10% of head and neck cancer, 5% of bladder cancer, and 5% of lung squamous cell carcinoma^{5,6,7,14,15}. Deletion of exons 2-7, encoding the extracellular domain of EGFR (EGFRvIII), results in overexpression of a ligand-independent constitutively active protein and is observed in approximately 30% of glioblastoma^{16,17,18}.

Potential relevance: Approved first-generation EGFR tyrosine kinase inhibitors (TKIs) include erlotinib¹⁹ (2004) and gefitinib²⁰ (2015), which block the activation of downstream signaling by reversible interaction with the ATP-binding site. Although initially approved for advanced lung cancer, the discovery that drug sensitivity was associated with exon 19 and exon 21 activating mutations allowed first-generation TKIs to become subsequently approved for front-line therapy in lung cancer tumors containing exon 19 or exon 21 activating mutations. Second-generation TKIs afatinib²¹ (2013) and dacomitinib²² (2018) bind EGFR and other ERBB/HER gene family members irreversibly and were subsequently approved. First- and second-generation TKIs afatinib, dacomitinib, erlotinib, and gefitinib are recommended for the treatment NSCLC harboring EGFR exon 19 insertions, exon 19 deletions, point mutations L861Q, L858R, S768I, and codon 719 mutations, whereas EGFR exon 20 insertions confer resistance to the same therapies²³. In lung cancer containing EGFR exon 19 or 21 activating mutations, treatment with TKIs is eventually associated with the emergence of drug resistance²⁴. The primary resistance mutation that emerges following treatment with first-generation TKI is T790M, accounting for



Biomarker Descriptions (continued)

50-60% of resistant cases⁸. Third generation TKIs were developed to maintain sensitivity in the presence of T790M. Osimertinib²⁵ (2015) is an irreversible inhibitor indicated for metastatic EGFR T790M positive lung cancer and for the first-line treatment of metastatic NSCLC containing EGFR exon 19 deletions or exon 21 L858R mutations. Like first-generation TKIs, treatment with osimertinib is associated with acquired resistance. In this case, resistance is associated with the C797S mutation, and occurs in 22-44% of cases²⁴. The T790M and C797S mutations may be each selected following sequential treatment with a first-generation TKI followed by a third-generation TKI or vice versa²⁶. T790M and C797S can occur in either cis or trans allelic orientation²⁶. If C797S is observed following progression after treatment with a third-generation TKI in the first-line setting, sensitivity may be retained to first-generation TKIs²⁶. If C797S co-occurs in trans with T790M following sequential treatment with first- and third-generation TKIs, patients may exhibit sensitivity to combination first- and third-generation TKIs, but resistance to third-generation TKIs alone^{26,27}. However, C797S occurring in cis conformation with T790M, confers resistance to first- and third-generation TKIs²⁶. Fourth-generation TKIs are in development to overcome acquired C797S and T790M resistance mutations after osimertinib treatment. EGFR targeting antibodies including cetuximab (2004), panitumumab (2006), and necitumumab (2016) are under investigation in combination with EGFR-targeting TKIs for efficacy against EGFR mutations. The bispecific antibody, JNJ-61186372²⁸, targeting EGFR and MET, and the TKI mobocertinib²⁹, each received a breakthrough designation from the FDA (2020) for NSCLC tumors harboring EGFR exon 20 insertion mutations. The Oncoprex immunogene therapy CNVN-202³⁰ in combination with osimertinib received a fast track designation from the FDA (2020) for NSCLC tumors harboring EGFR mutations that progressed on osimertinib alone. BDTX-189³¹ was granted a fast track designation (2020) for the treatment of solid tumors harboring an EGFR exon 20 insertion mutation.

KRAS (KRAS proto-oncogene, GTPase)

Background: The KRAS proto-oncogene encodes a GTPase that functions in signal transduction and is a member of the RAS superfamily which also includes NRAS and HRAS. RAS proteins mediate the transmission of growth signals from the cell surface to the nucleus via the PI3K/AKT/MTOR and RAS/RAF/MEK/ERK pathways, which regulate cell division, differentiation, and survival^{32,33,34}.

Alterations and prevalence: Recurrent mutations in RAS oncogenes cause constitutive activation and are found in 20-30% of cancers. KRAS mutations are observed in up to 10-20% of uterine cancer, 30-35% of lung adenocarcinoma and colorectal cancer, and about 60% of pancreatic cancer⁶. The majority of KRAS mutations consist of point mutations occurring at G12, G13, and Q61^{6,35,36}. Mutations at A59, K117, and A146 have also been observed but are less frequent^{7,37}.

Potential relevance: Currently, no therapies are approved for KRAS aberrations. However, the KRAS G12C inhibitor, sotorasib (AMG 510)³⁸, was granted fast track designation (2019) for previously treated non-small cell lung cancer (NSCLC) patients with KRAS G12C mutations. Additionally, onvansertib³⁹ was granted fast track designation (2020) for second-line treatment of patients with KRAS-mutated metastatic colorectal cancer (mCRC). The EGFR antagonists, cetuximab⁴⁰ and panitumumab⁴¹, are contraindicated for treatment of colorectal cancer patients with KRAS mutations in exon 2 (codons 12 and 13), exon 3 (codons 59 and 61), and exon 4 (codons 117 and 146)³⁷. Additionally, KRAS mutations are associated with poor prognosis in NSCLC⁴².

PIK3CA (phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha)

Background: The PIK3CA gene encodes the phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha of the class I phosphatidylinositol 3-kinase (PI3K) enzyme⁴³. PI3K is a heterodimer that contains a p85 regulatory subunit, which couples one of four p110 catalytic subunits to activated tyrosine protein kinases^{44,45}. The p110 catalytic subunits include p110α, β, δ, γ and are encoded by genes PIK3CA, PIK3CB, PIK3CD, and PIK3CG, respectively⁴⁴. PI3K catalyzes the conversion of phosphatidylinositol (4,5)-bisphosphate (PI(4,5)P2) into phosphatidylinositol (3,4,5)-trisphosphate (PI(3,4,5)P3) while the phosphatase and tensin homolog (PTEN) catalyzes the reverse reaction^{46,47}. The reversible phosphorylation of inositol lipids regulates diverse aspects of cell growth and metabolism^{46,47,48,49}. Recurrent somatic alterations in PIK3CA are frequent in cancer and result in the activation of PI3K/AKT/MTOR pathway, which can influence several hallmarks of cancer including cell proliferation, apoptosis, cancer cell metabolism and invasion, and genetic instability^{50,51,52}.

Alterations and prevalence: Recurrent somatic activating mutations in PIK3CA are common in diverse cancers and are observed in 20-30% of breast, cervical, and uterine cancers and 10-20% of bladder, gastric, head and neck, and colorectal cancers^{6,7}. Activating mutations in PIK3CA commonly cluster in two regions corresponding to the exon 9 helical (codons E542/E545) and exon 20 kinase (codon H1047) domains, each having distinct mechanisms of activation^{53,54,55}. PIK3CA resides in the 3q26 cytoband, a region frequently amplified (10-30%) in diverse cancers including squamous carcinomas of the lung, cervix, head and neck, and esophagus, and in serous ovarian and uterine cancers^{6,7}.



Biomarker Descriptions (continued)

Potential relevance: The PI3K inhibitor, alpelisib⁵⁶, is FDA approved (2019) in combination with fulvestrant for the treatment of patients with PIK3CA-mutated, hormone receptor (HR)-positive, human epidermal growth factor receptor 2 (HER2)-negative, advanced or metastatic breast cancer. Additionally, a phase Ib study of alpelisib with letrozole in patients with metastatic estrogen receptor (ER)-positive breast cancer, the clinical benefit rate, defined as lack of disease progression ≥ 6 months, was 44% (7/16) in PIK3CA-mutated tumors and 20% (2/20) in PIK3CA wild-type tumors⁵⁷. Specifically, exon 20 H1047R mutations were associated with more durable clinical responses in comparison to exon 9 E545K mutations⁵⁷. However, alpelisib did not improve response when administered with letrozole in patients with ER+ early breast cancer with PIK3CA mutations⁵⁸. Case studies with MTOR inhibitors sirolimus and temsirolimus report isolated cases of clinical response in PIK3CA mutated refractory cancers^{59,60}.

Relevant Therapy Summary

☒ In this cancer type
 ☐ In other cancer type
 ☒ In this cancer type and other cancer types
 ☒ No evidence

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA

Relevant Therapy	FDA	NCCN	EMA	ESMO	Clinical Trials*
osimertinib	●	●	●	●	● (III)
erlotinib + ramucirumab	●	●	●	●	×
bevacizumab + erlotinib	×	●	●	●	×
afatinib + cetuximab	×	●	×	×	×
bevacizumab (Fujifilm Kyowa Kirin Biologics) + erlotinib	×	×	●	×	×
bevacizumab (Samsung Bioepis) + erlotinib	×	×	●	×	×
atezolizumab + bevacizumab + carboplatin + paclitaxel	×	×	×	●	×
bevacizumab + gefitinib	×	×	×	●	×
gefitinib + carboplatin + pemetrexed	×	×	×	●	×
apatinib + EGFR tyrosine kinase inhibitor	×	×	×	×	● (IV)
bevacizumab + osimertinib, osimertinib	×	×	×	×	● (IV)
EGFR tyrosine kinase inhibitor	×	×	×	×	● (IV)
icotinib hydrochloride	×	×	×	×	● (IV)
icotinib hydrochloride, chemotherapy	×	×	×	×	● (IV)
icotinib hydrochloride, radiation therapy	×	×	×	×	● (IV)
atezolizumab, bevacizumab, chemotherapy	×	×	×	×	● (III)
durvalumab, chemotherapy	×	×	×	×	● (III)

* Most advanced phase (IV, III, II/III, II, I/II, I) is shown and multiple clinical trials may be available.



Relevant Therapy Summary (continued)

● In this cancer type ○ In other cancer type ⓘ In this cancer type and other cancer types ✕ No evidence

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

Relevant Therapy	FDA	NCCN	EMA	ESMO	Clinical Trials*
osimertinib, chemotherapy	✕	✕	✕	✕	● (III)
D-0316, icotinib hydrochloride	✕	✕	✕	✕	● (II/III)
anlotinib hydrochloride, icotinib hydrochloride	✕	✕	✕	✕	● (II)
anlotinib hydrochloride, osimertinib	✕	✕	✕	✕	● (II)
atezolizumab, bevacizumab	✕	✕	✕	✕	● (II)
atezolizumab, chemotherapy	✕	✕	✕	✕	● (II)
avitinib, AZD-3759	✕	✕	✕	✕	● (II)
bevacizumab, atezolizumab	✕	✕	✕	✕	● (II)
bevacizumab, atezolizumab, chemotherapy	✕	✕	✕	✕	● (II)
bevacizumab, osimertinib	✕	✕	✕	✕	● (II)
bintrafusp alfa, chemoradiation therapy, durvalumab	✕	✕	✕	✕	● (II)
chemotherapy, atezolizumab, bevacizumab	✕	✕	✕	✕	● (II)
crizotinib + chemotherapy	✕	✕	✕	✕	● (II)
durvalumab, tremelimumab, chemotherapy	✕	✕	✕	✕	● (II)
EGFR tyrosine kinase inhibitor + chemotherapy, EGFR tyrosine kinase inhibitor	✕	✕	✕	✕	● (II)
EGFR tyrosine kinase inhibitor, apatinib	✕	✕	✕	✕	● (II)
EGFR tyrosine kinase inhibitor, chemotherapy	✕	✕	✕	✕	● (II)
EGFR tyrosine kinase inhibitor, radiation therapy	✕	✕	✕	✕	● (II)
famitinib, almonertinib	✕	✕	✕	✕	● (II)
nivolumab, ipilimumab	✕	✕	✕	✕	● (II)
osimertinib, bevacizumab	✕	✕	✕	✕	● (II)
osimertinib, necitumumab	✕	✕	✕	✕	● (II)
osimertinib, radiation therapy	✕	✕	✕	✕	● (II)
osimertinib, ramucirumab	✕	✕	✕	✕	● (II)
osimertinib, savolitinib	✕	✕	✕	✕	● (II)

* Most advanced phase (IV, III, II/III, II, I/II, I) is shown and multiple clinical trials may be available.



Relevant Therapy Summary (continued)

☒ In this cancer type
 ☐ In other cancer type
 ☒ In this cancer type and other cancer types
 ✕ No evidence

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

Relevant Therapy	FDA	NCCN	EMA	ESMO	Clinical Trials*
pembrolizumab, chemotherapy	✕	✕	✕	✕	● (II)
ramucirumab, chemotherapy, cytokine	✕	✕	✕	✕	● (II)
SH-1028	✕	✕	✕	✕	● (II)
tyrosine kinase inhibitors, radiation therapy	✕	✕	✕	✕	● (II)
ASK120067	✕	✕	✕	✕	● (I/II)
CBT-502, anlotinib hydrochloride	✕	✕	✕	✕	● (I/II)
DZD-9008	✕	✕	✕	✕	● (I/II)
EMB01	✕	✕	✕	✕	● (I/II)
KP-673	✕	✕	✕	✕	● (I/II)
AB-928, zimberelimab, chemotherapy	✕	✕	✕	✕	● (I)
alisertib, osimertinib	✕	✕	✕	✕	● (I)
alisertib, sapanisertib, osimertinib	✕	✕	✕	✕	● (I)
amivantamab, lazertinib	✕	✕	✕	✕	● (I)
BCA101	✕	✕	✕	✕	● (I)
C-005	✕	✕	✕	✕	● (I)
CK-101	✕	✕	✕	✕	● (I)
FCN-411	✕	✕	✕	✕	● (I)
genolimzumab, fruquintinib	✕	✕	✕	✕	● (I)
lazertinib, amivantamab	✕	✕	✕	✕	● (I)
nazartinib, trametinib	✕	✕	✕	✕	● (I)
neratinib, palbociclib, everolimus, trametinib	✕	✕	✕	✕	● (I)
niraparib, osimertinib	✕	✕	✕	✕	● (I)
osimertinib, ipilimumab	✕	✕	✕	✕	● (I)
pirotinib	✕	✕	✕	✕	● (I)
telaglenastat, sapanisertib	✕	✕	✕	✕	● (I)
telisotuzumab vedotin, osimertinib	✕	✕	✕	✕	● (I)

* Most advanced phase (IV, III, II/III, II, I/II, I) is shown and multiple clinical trials may be available.



Relevant Therapy Summary (continued)

☒ In this cancer type
 ☐ In other cancer type
 ☒ In this cancer type and other cancer types
 ✕ No evidence

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

Relevant Therapy	FDA	NCCN	EMA	ESMO	Clinical Trials*
TNO-155, nazartinib	✕	✕	✕	✕	● (I)
TQB 3804	✕	✕	✕	✕	● (I)
TY-9591	✕	✕	✕	✕	● (I)
U3-1402	✕	✕	✕	✕	● (I)

EGFR p.(T790M) c.2369C>T

Relevant Therapy	FDA	NCCN	EMA	ESMO	Clinical Trials*
osimertinib	●	●	●	●	● (II)
anlotinib hydrochloride, osimertinib	✕	✕	✕	✕	● (IV)
apatinib + EGFR tyrosine kinase inhibitor	✕	✕	✕	✕	● (IV)
icotinib hydrochloride, radiation therapy	✕	✕	✕	✕	● (IV)
durvalumab, chemotherapy	✕	✕	✕	✕	● (III)
icotinib hydrochloride, chemotherapy	✕	✕	✕	✕	● (III)
osimertinib, chemotherapy	✕	✕	✕	✕	● (III)
sintilimab, bevacizumab (Innovent Biologics), chemotherapy	✕	✕	✕	✕	● (III)
toripalimab, chemotherapy	✕	✕	✕	✕	● (III)
abivertinib	✕	✕	✕	✕	● (II)
apatinib, chemotherapy	✕	✕	✕	✕	● (II)
atezolizumab, bevacizumab	✕	✕	✕	✕	● (II)
avitinib	✕	✕	✕	✕	● (II)
bevacizumab, osimertinib	✕	✕	✕	✕	● (II)
D-0316	✕	✕	✕	✕	● (II)
durvalumab, tremelimumab, chemotherapy	✕	✕	✕	✕	● (II)
EGFR tyrosine kinase inhibitor + chemotherapy, EGFR tyrosine kinase inhibitor	✕	✕	✕	✕	● (II)
EGFR tyrosine kinase inhibitor, apatinib	✕	✕	✕	✕	● (II)

* Most advanced phase (IV, III, II/III, II, I/II, I) is shown and multiple clinical trials may be available.



Relevant Therapy Summary (continued)

☒ In this cancer type
 ☐ In other cancer type
 ☒ In this cancer type and other cancer types
 ✕ No evidence

EGFR p.(T790M) c.2369C>T (continued)

Relevant Therapy	FDA	NCCN	EMA	ESMO	Clinical Trials*
EGFR tyrosine kinase inhibitor, chemotherapy	✕	✕	✕	✕	● (II)
EGFR tyrosine kinase inhibitor, radiation therapy	✕	✕	✕	✕	● (II)
famitinib, almonertinib	✕	✕	✕	✕	● (II)
icotinib hydrochloride	✕	✕	✕	✕	● (II)
KN046	✕	✕	✕	✕	● (II)
nivolumab, ipilimumab	✕	✕	✕	✕	● (II)
osimertinib, bevacizumab	✕	✕	✕	✕	● (II)
osimertinib, radiation therapy	✕	✕	✕	✕	● (II)
ramucirumab, chemotherapy, cytokine	✕	✕	✕	✕	● (II)
SH-1028	✕	✕	✕	✕	● (II)
toripalimab, anlotinib hydrochloride, chemotherapy	✕	✕	✕	✕	● (II)
tyrosine kinase inhibitors, radiation therapy	✕	✕	✕	✕	● (II)
ASK120067	✕	✕	✕	✕	● (I/II)
DZD-9008	✕	✕	✕	✕	● (I/II)
EMB01	✕	✕	✕	✕	● (I/II)
KP-673	✕	✕	✕	✕	● (I/II)
alisertib, osimertinib	✕	✕	✕	✕	● (I)
alisertib, sapanisertib, osimertinib	✕	✕	✕	✕	● (I)
amivantamab	✕	✕	✕	✕	● (I)
BCA101	✕	✕	✕	✕	● (I)
C-005	✕	✕	✕	✕	● (I)
CK-101	✕	✕	✕	✕	● (I)
FCN-411	✕	✕	✕	✕	● (I)
lazertinib, amivantamab	✕	✕	✕	✕	● (I)
nazartinib, trametinib	✕	✕	✕	✕	● (I)
neratinib, palbociclib, everolimus, trametinib	✕	✕	✕	✕	● (I)

* Most advanced phase (IV, III, II/III, II, I/II, I) is shown and multiple clinical trials may be available.



Relevant Therapy Summary (continued)

☒ In this cancer type
 ☐ In other cancer type
 ☒ In this cancer type and other cancer types
 ✕ No evidence

EGFR p.(T790M) c.2369C>T (continued)

Relevant Therapy	FDA	NCCN	EMA	ESMO	Clinical Trials*
osimertinib, necitumumab	✕	✕	✕	✕	● (I)
Palcitocla, osimertinib	✕	✕	✕	✕	● (I)
pirotinib	✕	✕	✕	✕	● (I)
TQB 3804	✕	✕	✕	✕	● (I)
TQB3456	✕	✕	✕	✕	● (I)
TY-9591	✕	✕	✕	✕	● (I)
U3-1402	✕	✕	✕	✕	● (I)
YK-029A	✕	✕	✕	✕	● (I)
YZJ-0318	✕	✕	✕	✕	● (I)

PIK3CA p.(E545K) c.1633G>A

Relevant Therapy	FDA	NCCN	EMA	ESMO	Clinical Trials*
alpelisib + fulvestrant	○	○	○	○	✕
EGFR tyrosine kinase inhibitor, chemotherapy	✕	✕	✕	✕	● (II)
everolimus	✕	✕	✕	✕	● (II)
paxalisib	✕	✕	✕	✕	● (II)
samotolisib	✕	✕	✕	✕	● (II)
sirolimus	✕	✕	✕	✕	● (II)
temsirolimus	✕	✕	✕	✕	● (II)
copanlisib, nivolumab, ipilimumab	✕	✕	✕	✕	● (I/II)
TAS-117, futibatinib	✕	✕	✕	✕	● (I/II)
copanlisib, olaparib, durvalumab	✕	✕	✕	✕	● (I)
GDC-0077	✕	✕	✕	✕	● (I)
gedatolisib + palbociclib	✕	✕	✕	✕	● (I)
paxalisib, radiation therapy	✕	✕	✕	✕	● (I)

* Most advanced phase (IV, III, II/III, II, I/II, I) is shown and multiple clinical trials may be available.



Relevant Therapy Summary (continued)

☒ In this cancer type
 ☐ In other cancer type
 ☒ In this cancer type and other cancer types
 ✕ No evidence

KRAS amplification

Relevant Therapy	FDA	NCCN	EMA	ESMO	Clinical Trials*
ASTX029	✕	✕	✕	✕	● (I/II)
mirdametinib, lifirafenib	✕	✕	✕	✕	● (I/II)
RMC-4630, cobimetinib	✕	✕	✕	✕	● (I/II)
BGB-3245	✕	✕	✕	✕	● (I)
LXH254	✕	✕	✕	✕	● (I)
LY3214996, midazolam, abemaciclib, chemotherapy, encorafenib, cetuximab	✕	✕	✕	✕	● (I)
RMC-4630	✕	✕	✕	✕	● (I)
RMC-4630, pembrolizumab	✕	✕	✕	✕	● (I)

EGFR amplification

Relevant Therapy	FDA	NCCN	EMA	ESMO	Clinical Trials*
nimotuzumab + chemotherapy	✕	✕	✕	✕	● (II)
osimertinib, necitumumab	✕	✕	✕	✕	● (II)
BCA101	✕	✕	✕	✕	● (I)
neratinib, palbociclib, everolimus, trametinib	✕	✕	✕	✕	● (I)

* Most advanced phase (IV, III, II/III, II, I/II, I) is shown and multiple clinical trials may be available.



Relevant Therapy Details

Current FDA Information

☒ In this cancer type
 ☐ In other cancer type
 ☒ In this cancer type and other cancer types

FDA information is current as of 2020-10-14. For the most up-to-date information, search www.fda.gov.

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA

● erlotinib + ramucirumab

Cancer type: Non-Small Cell Lung Cancer

Label as of: 2020-07-06

Variant class: EGFR exon 19 deletion

Indications and usage:

CYRAMZA® is a human vascular endothelial growth factor receptor 2 (VEGFR2) antagonist indicated:

- as a single agent or in combination with paclitaxel, for treatment of advanced or metastatic gastric or gastro-esophageal junction adenocarcinoma with disease progression on or after prior fluoropyrimidine- or platinum-containing chemotherapy.
- in combination with erlotinib, for first-line treatment of metastatic non-small cell lung cancer with epidermal growth factor receptor (EGFR) exon 19 deletions or exon 21 (L858R) mutations.
- in combination with docetaxel, for treatment of metastatic non-small cell lung cancer with disease progression on or after platinum-based chemotherapy. Patients with EGFR or ALK genomic tumor aberrations should have disease progression on FDA-approved therapy for these aberrations prior to receiving CYRAMZA®.
- in combination with FOLFIRI, for the treatment of metastatic colorectal cancer with disease progression on or after prior therapy with bevacizumab, oxaliplatin, and a fluoropyrimidine.
- as a single agent, for the treatment of hepatocellular carcinoma in patients who have an alpha fetoprotein of ≥ 400 ng/mL and have been treated with sorafenib.

Reference:

https://www.accessdata.fda.gov/drugsatfda_docs/label/2020/125477s037lbl.pdf

● osimertinib

Cancer type: Non-Small Cell Lung Cancer

Label as of: 2020-05-23

Variant class: EGFR exon 19 deletion

Indications and usage:

TAGRISSO® is a kinase inhibitor indicated for

- the first-line treatment of patients with metastatic NSCLC whose tumors have epidermal growth factor receptor (EGFR) exon 19 deletions or exon 21 L858R mutations, as detected by an FDA-approved test.
- the treatment of patients with metastatic EGFR T790M mutation-positive NSCLC, as detected by an FDA-approved test, whose disease has progressed on or after EGFR TKI therapy.

Reference:

https://www.accessdata.fda.gov/drugsatfda_docs/label/2020/208065s016lbl.pdf



EGFR p.(T790M) c.2369C>T

● osimertinib

Cancer type: Non-Small Cell Lung Cancer

Label as of: 2020-05-23

Variant class: EGFR T790M mutation

Indications and usage:

TAGRISSO® is a kinase inhibitor indicated for

- the first-line treatment of patients with metastatic NSCLC whose tumors have epidermal growth factor receptor (EGFR) exon 19 deletions or exon 21 L858R mutations, as detected by an FDA-approved test.
- the treatment of patients with metastatic EGFR T790M mutation-positive NSCLC, as detected by an FDA-approved test, whose disease has progressed on or after EGFR TKI therapy.

Reference:

https://www.accessdata.fda.gov/drugsatfda_docs/label/2020/208065s016lbl.pdf

PIK3CA p.(E545K) c.1633G>A

○ alpelisib + fulvestrant

Cancer type: Breast Cancer

Label as of: 2020-09-01

Variant class: PIK3CA E545K mutation

Other criteria: ERBB2 negative, Hormone receptor positive

Indications and usage:

PIQRAY® is a kinase inhibitor indicated in combination with fulvestrant for the treatment of postmenopausal women, and men, with hormone receptor (HR)- positive, human epidermal growth factor receptor 2 (HER2)-negative, PIK3CA-mutated, advanced or metastatic breast cancer as detected by an FDA-approved test following progression on or after an endocrine-based regimen.

Reference:

https://www.accessdata.fda.gov/drugsatfda_docs/label/2020/212526s001lbl.pdf



Current NCCN Information

- ☒ In this cancer type
 ☐ In other cancer type
 ☒ In this cancer type and other cancer types

NCCN information is current as of 2020-10-01. For the most up-to-date information, search www.nccn.org.
For NCCN International Adaptations & Translations, search www.nccn.org/global/international_adaptations.aspx.

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA

● osimertinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR exon 19 deletion

NCCN Recommendation category: 1

Population segment (Line of therapy):

- Adenocarcinoma, Large Cell, Non-Small Cell Lung Cancer (NOS), Squamous Cell Carcinoma; Advanced or metastatic disease; EGFR sensitizing mutation discovered prior to first-line systemic therapy (First-line therapy) (Preferred)

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

● afatinib + cetuximab

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR exon 19 deletion

NCCN Recommendation category: 2A

Population segment (Line of therapy):

- Non-Small Cell Lung Cancer; Progression on erlotinib, afatinib, dacomitinib, gefitinib, chemotherapy, or osimertinib; Systemic multiple lesions (Subsequent therapy)

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

● bevacizumab + erlotinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR exon 19 deletion

NCCN Recommendation category: 2A

Population segment (Line of therapy):

- Non-Squamous Non-Small Cell Lung Cancer; Advanced or metastatic disease; No recent history of hemoptysis; Progression on erlotinib +/- (ramucirumab or bevacizumab), afatinib, gefitinib, or dacomitinib; Asymptomatic or symptomatic with brain metastases or isolated lesions (Subsequent therapy)

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]



EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

● erlotinib + ramucirumab

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR exon 19 deletion

NCCN Recommendation category: 2A

Population segment (Line of therapy):

- Adenocarcinoma, Large Cell, Non-Small Cell Lung Cancer (NOS), Squamous Cell Carcinoma; Advanced or metastatic disease; Sensitizing EGFR mutation discovered prior to or during first-line systemic therapy (First-line therapy) (Other Recommended)
- Adenocarcinoma, Large Cell, Non-Small Cell Lung Cancer (NOS), Squamous Cell Carcinoma; Advanced or metastatic disease; Progression on erlotinib +/- (ramucirumab or bevacizumab), afatinib, gefitinib, or dacomitinib; Asymptomatic or symptomatic with brain metastases or isolated lesions (Subsequent therapy)

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

● osimertinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR exon 19 deletion

NCCN Recommendation category: 2A

Population segment (Line of therapy):

- Adenocarcinoma, Large Cell, Non-Small Cell Lung Cancer (NOS), Squamous Cell Carcinoma; Advanced or metastatic disease; Sensitizing EGFR mutation discovered during first-line systemic therapy; Interrupt or complete planned systemic therapy, including maintenance therapy (First-line therapy) (Preferred)
- Adenocarcinoma, Large Cell, Non-Small Cell Lung Cancer (NOS), Squamous Cell Carcinoma; Advanced or metastatic disease; Progression on osimertinib; Asymptomatic or symptomatic with brain or isolated lesions (Subsequent therapy)

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

● bevacizumab + erlotinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR exon 19 deletion

NCCN Recommendation category: 2B

Population segment (Line of therapy):

- Non-Squamous Non-Small Cell Lung Cancer; Advanced or metastatic disease; No recent history of hemoptysis; Sensitizing EGFR mutation discovered prior to or during first-line systemic therapy (First-line therapy) (Useful in Certain Circumstances)

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]



EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

● osimertinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR mutation

NCCN Recommendation category: 2A

Population segment (Line of therapy):

- Non-Small Cell Lung Cancer; Leptomeningeal and spine metastases (Not specified)

Reference: NCCN Guidelines® - NCCN-Central Nervous System Cancers [Version 3.2020]

EGFR p.(T790M) c.2369C>T

● osimertinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR T790M mutation

NCCN Recommendation category: 1

Population segment (Line of therapy):

- Adenocarcinoma, Large Cell, Non-Small Cell Lung Cancer (NOS), Squamous Cell Carcinoma; Advanced or metastatic disease; Progression on erlotinib +/- (ramucirumab or bevacizumab), afatinib, gefitinib, or dacomitinib; Asymptomatic or symptomatic brain metastases (Subsequent therapy)
- Adenocarcinoma, Large Cell, Non-Small Cell Lung Cancer (NOS), Squamous Cell Carcinoma; Advanced or metastatic disease; Progression on erlotinib +/- (ramucirumab or bevacizumab), afatinib, gefitinib, or dacomitinib; Systemic multiple lesions; If not previously given (Subsequent therapy)

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

● osimertinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR T790M mutation

NCCN Recommendation category: 2A

Population segment (Line of therapy):

- Non-Small Cell Lung Cancer; Brain metastases; Use active agents against primary tumor (Not specified)
- Non-Small Cell Lung Cancer; Leptomeningeal and spine metastases (Not specified)

Reference: NCCN Guidelines® - NCCN-Central Nervous System Cancers [Version 3.2020]



EGFR p.(T790M) c.2369C>T (continued)

☒ osimertinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR mutation

NCCN Recommendation category: 2A

Population segment (Line of therapy):

- Non-Small Cell Lung Cancer; Leptomeningeal and spine metastases (Not specified)

Reference: NCCN Guidelines® - NCCN-Central Nervous System Cancers [Version 3.2020]

PIK3CA p.(E545K) c.1633G>A

☐ alpelisib + fulvestrant

Cancer type: Breast Cancer

Variant class: PIK3CA mutation

Other criteria: ERBB2 negative, ER positive, PR positive

NCCN Recommendation category: 1

Population segment (Line of therapy):

- Recurrent or Stage IV Invasive Breast Cancer; Postmenopausal or Premenopausal receiving ovarian ablation or suppression (Second-line or subsequent therapy) (Preferred)

Reference: NCCN Guidelines® - NCCN-Breast Cancer [Version 6.2020]



Current EMA Information

- ☒ In this cancer type
 ☐ In other cancer type
 ☒ In this cancer type and other cancer types

EMA information is current as of 2020-10-14. For the most up-to-date information, search www.ema.europa.eu/ema.

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA

● bevacizumab (Fujifilm Kyowa Kirin Biologics) + erlotinib

Cancer type: Non-Small Cell Lung Cancer

Label as of: 2020-10-12

Variant class: EGFR exon 19 deletion

Reference:

https://www.ema.europa.eu/en/documents/product-information/equidacent-epar-product-information_en.pdf

● bevacizumab (Samsung Bioepis) + erlotinib

Cancer type: Non-Small Cell Lung Cancer

Label as of: 2020-09-02

Variant class: EGFR exon 19 deletion

Reference:

https://www.ema.europa.eu/en/documents/product-information/aybintio-epar-product-information_en.pdf

● bevacizumab + erlotinib

Cancer type: Non-Small Cell Lung Cancer

Label as of: 2020-03-11

Variant class: EGFR exon 19 deletion

Reference:

https://www.ema.europa.eu/en/documents/product-information/avastin-epar-product-information_en.pdf

● erlotinib + ramucirumab

Cancer type: Non-Small Cell Lung Cancer

Label as of: 2020-07-02

Variant class: EGFR exon 19 deletion

Reference:

https://www.ema.europa.eu/en/documents/product-information/cyramza-epar-product-information_en.pdf

● osimertinib

Cancer type: Non-Small Cell Lung Cancer

Label as of: 2020-07-31

Variant class: EGFR exon 19 deletion

Reference:

https://www.ema.europa.eu/en/documents/product-information/tagrisso-epar-product-information_en.pdf



EGFR p.(T790M) c.2369C>T

● osimertinib

Cancer type: Non-Small Cell Lung Cancer

Label as of: 2020-07-31

Variant class: EGFR T790M mutation

Reference:

https://www.ema.europa.eu/en/documents/product-information/tagrisso-epar-product-information_en.pdf

PIK3CA p.(E545K) c.1633G>A

○ alpelisib + fulvestrant

Cancer type: Breast Cancer

Label as of: 2020-07-30

Variant class: PIK3CA mutation

Other criteria: ERBB2 mutation negative, Hormone receptor positive

Reference:

https://www.ema.europa.eu/en/documents/product-information/piqray-epar-product-information_en.pdf



Current ESMO Information

- ☒ In this cancer type
 ☐ In other cancer type
 ☒ In this cancer type and other cancer types

ESMO information is current as of 2020-10-01. For the most up-to-date information, search www.esmo.org.

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA

● atezolizumab + bevacizumab + carboplatin + paclitaxel

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR exon 19 deletion

ESMO Level of Evidence/Grade of Recommendation: III / A

Population segment (Line of therapy):

- Metastatic Non-Squamous; ESMO-Magnitude of Clinical Benefit Scale Version 1.1 Score: 3 (First-line therapy)
- Metastatic; PS 0-1; Without contraindications to immunotherapy after targeted therapies have been exploited (Second-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]

● osimertinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFRi sensitizing mutation

ESMO Level of Evidence/Grade of Recommendation: I / A

Population segment (Line of therapy):

- Advanced stage; ESMO-Magnitude of Clinical Benefit Scale Version 1.1 Score: 4 (First-line therapy) (Preferred)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]

● bevacizumab + erlotinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: I / A

Population segment (Line of therapy):

- Stage IV; PS 0-2 (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]



EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

● bevacizumab + gefitinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: I / A

Population segment (Line of therapy):

- Stage IV; PS 0-2 (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]

● erlotinib + ramucirumab

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: I / A

Population segment (Line of therapy):

- Stage IV; PS 0-2 (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]

● gefitinib + carboplatin + pemetrexed

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: I / A

Population segment (Line of therapy):

- Stage IV; PS 0-2 (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]

● bevacizumab + erlotinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: I / B

Population segment (Line of therapy):

- Stage IV; ESMO-Magnitude of Clinical Benefit Scale Version 1.1 Score: 3 (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]



EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

● bevacizumab + gefitinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: I / B

Population segment (Line of therapy):

- Stage IV; ESMO-Magnitude of Clinical Benefit Scale Version 1.1 Score: 3 (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]

● erlotinib + ramucirumab

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: I / B

Population segment (Line of therapy):

- Stage IV; ESMO-Magnitude of Clinical Benefit Scale Version 1.1 Score: 3 (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]

● gefitinib + carboplatin + pemetrexed

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: I / B

Population segment (Line of therapy):

- Advanced stage (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]

● bevacizumab + erlotinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: III / A

Population segment (Line of therapy):

- Stage IV; PS 3-4 (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]



EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

● bevacizumab + gefitinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: III / A

Population segment (Line of therapy):

- Stage IV; PS 3-4 (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]

● erlotinib + ramucirumab

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: III / A

Population segment (Line of therapy):

- Stage IV; PS 3-4 (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]

● gefitinib + carboplatin + pemetrexed

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR activating mutation

ESMO Level of Evidence/Grade of Recommendation: III / A

Population segment (Line of therapy):

- Stage IV; PS 3-4 (First-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]



EGFR p.(T790M) c.2369C>T

● osimertinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR T790M mutation

ESMO Level of Evidence/Grade of Recommendation: I / A

Population segment (Line of therapy):

- Stage IV; Resistance to first-/second generation EGFR TKI; If not received previously; ESMO-Magnitude of Clinical Benefit Scale Version 1.1 Score: 4 (Second-line therapy)

Reference: ESMO Clinical Practice Guidelines - ESMO-Metastatic Non-Small-Cell Lung Cancer [Online Guideline (15SEP2020 - <https://www.esmo.org/guidelines/lung-and-chest-tumours/clinical-practice-living-guidelines-metastatic-non-small-cell-lung-cancer>); Ann Oncol (2018) 29 (suppl 4): iv192–iv237.]

PIK3CA p.(E545K) c.1633G>A

○ alpelisib + fulvestrant

Cancer type: Breast Cancer

Variant class: PIK3CA exon 9 mutation

Other criteria: ERBB2 negative, ER positive

ESMO Level of Evidence/Grade of Recommendation: I / B

Population segment (Line of therapy):

- Luminal Advanced Breast Cancer; ESMO-MCBS v1.1 score: 3 (Not specified)

Reference: ESMO Clinical Practice Guidelines - ESMO-ESO-ESMO Advanced Breast Cancer [Annals of Oncology (2020), doi: <https://doi.org/10.1016/j.annonc.2020.09.010> (ABC 5)]

Clinical Trials Summary

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA + EGFR p.(T790M) c.2369C>T + PIK3CA p.(E545K) c.1633G>A

NCT ID	Title	Phase
NCT04552613	Study on the Efficacy of Targeted Therapy of EGFR-sensitive Mutation in Patients With Non-sensitive Lung Cancer Based on Molecular Typing	II

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA + EGFR p.(T790M) c.2369C>T

NCT ID	Title	Phase
NCT04035486	A Phase III, Open-label, Randomized Study of Osimertinib With or Without Platinum Plus Pemetrexed Chemo, as First-line Treatment in Patients With Epidermal Growth Factor Receptor (EGFR) Mutation Positive, Locally Advanced or Metastatic Non-small Cell Lung Cancer (FLAURA2)	III
NCT04029350	A Multi-center, One-arm, Phase II Trial of Anlotinib Combined With Osimertinib as the Second-line Treatment in Stage IIIB-IV NSCLC With Confirmed EGFRm and T790M.	II



Clinical Trials Summary (continued)

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA + EGFR p.(T790M) c.2369C>T (continued)

NCT ID	Title	Phase
NCT03994393	A Phase II Trial of Durvalumab (MEDI4736) and Tremelimumab With Chemotherapy in Metastatic EGFR Mutant Non-squamous Non-small Cell Lung Cancer (NSCLC) Following Progression on EGFR Tyrosine Kinase Inhibitors (TKIs)	II
No NCT ID	A Phase II Study Of Osimertinib For Untreated CNS Metastasis, EGFR T790M-Positive Non-Small Cell Lung Cancer(LOGIK1603/ WJOG9116L).	II
NCT02811354	Phase II Study of AZD9291 in Patients With Advanced Stage Non-small Cell Lung Cancer Following Prior EGFR TKI Therapy With EGFR and T790M Mutations Detected in Plasma Circulating Tumor DNA (PLASMA)	II
NCT04233021	A Phase II, Multi-centre Study, to Evaluate the Efficacy and Safety of Osimertinib Treatment for Patients With EGFR-mutated Non-small Cell Lung Cancer (NSCLC) With Brain or Leptomeningeal Metastases	II
NCT03823807	A Multicenter, Open-label, Phase II Study to Evaluate the Safety and Efficacy of SH-1028 in Locally Advanced or Metastatic NSCLC	II
NCT04426825	A Single Arm, Phase II Study of Atezolizumab (MPDL3280A, Anti-PD-L1 Antibody) in Combination With Bevacizumab in Patients With EGFR Mutation Positive Stage IIIB/IV Non-Squamous Non-Small Cell Lung Cancer Pretreated With Epidermal Growth Factor Receptor Tyrosine-Kinase Inhibitors	II
NCT02824952	Neo-adjuvant Trial With AZD9291 in EGFRm+ Stage IIIA/B NSCLC - a Phase II Open-label Study	II
NCT03502850	A Phase I/II Study to Assess the Safety,Tolerability, Pharmacokinetics and Anti-tumour Activity of ASK120067 in Patients With Locally Advanced or Metastatic T790M Mutation-positive Non-Small Cell Lung Cancer Who Have Progressed Following Prior Therapy With an Epidermal Growth Factor Receptor Tyrosine Kinase Inhibitor Agent	I/II
NCT03420079	A Phase I, Multi-center, Open-label, Single-arm, Dose-escalation and Dose-expansion Clinical Study to Evaluate the Safety, Tolerability, Pharmacokinetics (PK) and Anti-tumor Activities of FCN-411 Monotherapy in Advanced Non-small Cell Lung Cancer	I
NCT03516214	An Open-label, Multicenter, Phase I Dose-escalation Trial of EGF816 and Trametinib in Patients With Non-small Cell Lung Cancer and Acquired EGFR p.T790M-positive Resistance to 1st or 2nd Generation EGFR TKI Therapy	I
NCT02496663	A Phase I Trial of AZD9291 and Necitumumab in EGFR-Mutant Non-small Cell Lung Cancer After Progression on a Previous EGFR Tyrosine Kinase Inhibitor	I
NCT04204473	Phase I, Open-label, Single-arm Study to Evaluate the Safety, Tolerance, Pharmacokinetics and Preliminary Efficacy of TY-9591 Tablets in Advanced NSCLC Patients With Epidermal Growth Factor Receptor(EGFR) Positive Mutation	I
NCT03260491	A Multicenter, Open-Label Phase 1 Study of U3-1402 in Subjects With Metastatic or Unresectable Non-small Cell Lung Cancer	I
NCT03618043	A Phase I, Open-label Study to Assess the Safety and Tolerability of Ascending Doses of SH-1028 Tablets in Patients With Advanced Solid Cancer	I



Clinical Trials Summary (continued)

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA + EGFR amplification

NCT ID	Title	Phase
NCT03944772	A Biomarker-directed Phase II Platform Study in Patients With Advanced Non-Small Lung Cancer Whose Disease Has Progressed on First-Line Osimertinib Therapy	II

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA

NCT ID	Title	Phase
No NCT ID	The Efficacy and Safety of Osimertinib Combined with Bevacizumab in the Treatment of SD Patients with Non-Squamous Cell Lung Cancer	IV
NCT01665417	Randomized, Open Label, Positive Controlled, Multicenter Trial to Evaluate Icotinib as First-line and Maintenance Treatment in EGFR Mutated Patients With Lung Adenocarcinoma	IV
NCT02404675	High Dose Icotinib in Advanced Non-small Cell Lung Cancer With EGFR 21 Exon Mutation (INCREASE): a Randomized, Open-label Study	IV
NCT02103257	Sequential Icotinib Plus Chemotherapy Versus Icotinib Alone as First-line Treatment in Stage IIIB/IV Lung Adenocarcinoma: a Randomized, Open-label, Multicenter Study	IV
No NCT ID	The Continuous Evaluation of EGFR Mutation in EGFR-mutation Positive Lung Cancer Patients During EGFR TKI Treatment	IV
No NCT ID	Apatinib Combined With EGFR-TKI For Patients With EGFR Mutation Who Failed EGFR-TKI: A Prospective Study	IV
No NCT ID	Clinical Study Of Combined Action Of Icotinib And Brain Radiotherapy On EGFR-Mutated Non-Small-Cell Lung Cancer Patients With Brain Metastasis	IV
NCT04058704	A Multi-center, Prospective Study to Determine the Efficiency of Icotinib Combined With Radiation Therapy Early Intervention or Late Intervention For NSCLC Patients With Brain Metastases and EGFR(Epidermal Growth Factor Receptor) Mutation	III
NCT03521154	A Phase III, Randomized, Double-blind, Placebo-controlled, Multicenter, International Study of Osimertinib as Maintenance Therapy in Patients With Locally Advanced, Unresectable EGFR Mutation-positive Non-Small Cell Lung Cancer (Stage III) Whose Disease Has Not Progressed Following Definitive Platinum-based Chemoradiation Therapy (LAURA)	III
NCT01996098	A Multicenter, Randomized, Phase III Trial of Chemotherapy Followed by 6-month or 12-month Icotinib Versus Chemotherapy as Adjuvant Therapy in Stage IIA-IIIA Non-small Cell Lung Cancer Harboring Epidermal Growth Factor Receptor Mutation	III
NCT03991403	Study of Atezolizumab in Combination With Carboplatin + Paclitaxel +Bevacizumab vs With Pemetrexed + Cisplatin or Carboplatin With Stage IV NON-SQUAMOUS NON-SMALL CELL LUNG CANCER With EGFR(+) or ALK(+)	III
No NCT ID	Randomized Phase III Trial Of Icotinib Combined With Thoracic Radiotherapy Vs. Icotinib Alone In Treatment Of Advanced NSCLC Patients With EGFR Mutation	III
NCT03800134	A Phase III, Double-blind, Placebo-controlled, Multi-center International Study of Neoadjuvant/Adjuvant Durvalumab for the Treatment of Patients With Resectable Stages II and III Non-small Cell Lung Cancer (AEGEAN)	III



Clinical Trials Summary (continued)

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

NCT ID	Title	Phase
NCT03992885	Combination Therapy With Icotinib, Pemetrexed and Platinum in Patients With Metastatic Non-squamous Non-small Cell Lung Cancer With EGFR Mutations Who Did Not Progress After Pemetrexed in Combination With Platinum-based Chemotherapy:a Single-arm, Open, Multicenter Clinical Study.	III
NCT04206072	A Phase II/III, Open-Label, Randomised Study to Assess the Safety and Efficacy of D-0316 Versus Icotinib as First Line Treatment in Patients With EGFR Sensitising Mutation, Locally Advanced or Metastatic NSCLC	II/III
NCT03736837	A Multi-center, One-arm Clinical Study of Anlotinib Combined With Icotinib as the First-line Treatment in Patients With EGFR Mutation-positive Advanced NSCLC. The Trial Aims to Evaluate the Efficacy and Safety of This Treatment.	II
No NCT ID	Phase II Study of Platinum-Based Doublet Chemotherapy Plus Atezolizumab, In Completely Resected, P-Stage II-IIIa NSCLC Patients Harboring EGFR Mutation. (WJOG11719L Investigator-Initiated Clinical Trial)	II
NCT04099836	Single Arm Phase II Trial of Atezolizumab and Bevacizumab in Epidermal Growth Factor Receptor (EGFR) Mutant Non-Small Cell Lung Cancer in Patients With Progressive Disease After Receiving Osimertinib (TOP 1901).	II
No NCT ID	Low-dose Decitabine plus Crizotinib in EGFR-Mutation-Positive Advanced Non-Small Cell Lung Cancer Patients :A Open-Label,Single-Arm Phase II Study	II
NCT02820116	An Open-label, Multicenter,Single-arm, Phase II Clinical Study of Icotinib for IIIA - IIIB NSCLC Patients with Epidermal Growth Factor Receptor Mutation	II
NCT03349203	Icotinib as Neoadjuvant and Adjuvant Therapy in EGFR-mutant Stage IIIB or Oligometastasis Non-small Cell Lung Cancer: a Single Arm, Phase II Clinical Study	II
NCT03396185	Icotinib as Consolidation Therapy After Synchronous or Sequential Chemoradiotherapy in Stage IIIA-IIIB Non-small Cell Lung Cancer With EGFR Sensitive Mutation: A Single Center, Single Arm, Open Label and Prospective Clinical Study	II
NCT03749213	Icotinib as Neoadjuvant Therapy in EGFR-mutant Stage IIIA-N2 Non-small Cell Lung Cancer: a Single Arm, Phase II Clinical Study	II
NCT02726568	A Phase II Study to Determine the Efficacy and Safety of High Dose Icotinib Combined With Stereotactic Radiosurgery for NSCLC Patients Harboring EGFR Mutation With Brain Metastases	II
No NCT ID	A Phase II trial of Osimertinib for Elderly patients with Advanced or Postoperative Recurrent Non-Small-Cell Lung Cancer (SPIRAL-0 Study)	II
NCT03433469	A Phase II Study to Evaluate Neoadjuvant Osimertinib Therapy in Patients with Surgically Resectable, EGFR-Mutant Non-Small Cell Lung Cancer	II
NCT03969823	Whole Genomic Landscape of EGFR Mutation-Positive Advanced Non-Small Cell Lung Cancer Treated With First-Line Osimertinib (WARRIOR)	II
No NCT ID	A Phase II Study of osimertinib plus cisplatin/carboplatin+pemetrexed for previously-untreated patients with NSCLC harboring EGFR sensitizing mutations. (NEJ032C/LOGIK1801)	II
NCT03497767	A Randomised Phase II Trial of Osimertinib With or Without Stereotactic Radiosurgery for EGFR Mutated Non-Small Cell Lung Cancer (NSCLC) With Brain Metastases	II



Clinical Trials Summary (continued)

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

NCT ID	Title	Phase
NCT03769103	Open Label, Multicenter, Phase II Study of Patients With Treatment Naive Metastatic Epidermal Growth Factor Receptor (EGFR) Mutation-Positive Non-Small Cell Lung Cancer (NSCLC) With Brain Metastases Randomized to Stereotactic Radiosurgery (SRS) and Osimertinib or Osimertinib Alone	II
NCT03909334	An Open-Label Randomized Phase II Study of Combining Osimertinib With and Without Ramucirumab in Tyrosine Kinase Inhibitor (TKI)-naïve Epidermal Growth Factor Receptor (EGFR)-Mutant Locally Advanced or Metastatic NSCLC	II
NCT03778229	A Phase II, Single Arm Study Assessing Efficacy of Osimertinib With Savolitinib in Patients With EGFRm + MET+, Locally Advanced or Metastatic Non Small Cell Lung Cancer Who Have Progressed Following Osimertinib Treatment (SAVANNAH Study)	II
NCT03242915	Phase II Multi-center Study of Pembrolizumab in Combination With Platinum-based Doublet Chemotherapy in NSCLC (Non-small Cell Lung Cancer) Patients With Targetable Genetic Alterations in Their Tumor Previously Treated With Appropriate Targeted Agents With Progressive Disease	II
NCT03574402	An Open-label, Multi-center, Phase II Umbrella Study to Assess Efficacy of Targeted Therapy or Immunotherapy Directed by Next Generation Sequencing (NGS) in Chinese Patients With Advanced NSCLC (TRUMP)	II
NCT04042558	A Multicentre Phase II, Open-label, Non-randomized Study Evaluating Platinum-Pemetrexed-Atezolizumab (+/- Bevacizumab) for Patients With Stage IIIB/IV Non-squamous Non-small Cell Lung Cancer With EGFR Mutations, ALK Rearrangement or ROS1 Fusion Progressing After Targeted Therapies	II
NCT03840902	A Multicenter, Double Blind, Randomized, Controlled Study of M7824 With Concurrent Chemoradiation Followed by M7824 Versus Concurrent Chemoradiation Plus Placebo Followed by Durvalumab in Participants With Unresectable Stage III Non-small Cell Lung Cancer	II
NCT02264210	A Randomized, Phase II Trial of Icotinib Versus Observation as Adjuvant Treatment in Stage IB Non-Small Cell Lung Cancer Harboring Activating Epidermal Growth Factor Receptor Mutation	II
NCT03786692	TH-138: Phase II Randomized Trial of Carboplatin + Pemetrexed + Bevacizumab, With or Without Atezolizumab in Stage IV Non-squamous NSCLC Patients Who Harbor a Sensitizing EGFR Mutation or Have Never Smoked	II
NCT02044328	Icotinib as an Adjuvant Therapy for Patients With Stage IIA-IIIA Adenocarcinoma With EGFR Mutation: a Prospective, Exploratory Study	II
NCT03804580	First-Line Treatment With Osimertinib In EGFR-Mutated Non-Small Cell Lung Cancer, Coupled To Extensive Translational Studies	II
NCT04410796	A Phase 2 Randomized Study of Osimertinib Versus Osimertinib Plus Chemotherapy for Patients With Metastatic EGFR-Mutant Lung Cancers That Have Detectable EGFR-Mutant cfDNA in Plasma After Initiation of Osimertinib	II
NCT03667820	Phase II Trial of Osimertinib in Combination With Stereotactic Ablative Radiation (SABR) in EGFR Mutant Advanced Non-Small Cell Lung Cancer (NSCLC)	II
No NCT ID	Osimertinib Combined Bevacizumab in Untreated Epidermal Growth Factor Receptor Mutated Non-small-cell Lung Cancer Patients with Malignant Pleural And/OR Pericardial Effusion -phase II Trial	II
No NCT ID	Randomized Controlled Trial for EGFR-TKIs Plus S-1 or EGFR-TKIs as the First-Line Therapy for Patients with Advanced Non-small Cell Lung Cancer Harboring EGFR Mutations	II



Clinical Trials Summary (continued)

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

NCT ID	Title	Phase
No NCT ID	Single arm, Exploratory Study for Apatinib mesylate Combined with EGFR-TKI in Patients with EGFR Mutation-positive Advanced Non-squamous Non-small-cell Lung Cancer	II
No NCT ID	EGFR-TKI Combined With Stereotactic Body Radiation Therapy Versus TKI alone for Stage IV Oncogene-Driven Non-Small Cell Lung Cancer.	II
NCT03904823	An Open, Single-arm, Multi-center, Phase II Clinical Trial of Famininib Combined With Epidermal Growth Factor Receptor (EGFR) Inhibitor HS-10296 in Patients With Advanced EGFR-mutant Non-Small Cell Lung Cancer (NSCLC)	II
NCT02960607	A Phase II Study of High-dose Icotinib in Previously Treated Non-small Cell Lung Cancer Patients With Epidermal Growth Factor Receptor Mutation	II
NCT03091491	Randomised Phase II Study of Nivolumab Versus Nivolumab and Ipilimumab Combination in EGFR Mutant Non-small Cell Lung Cancer	II
NCT03460275	Osimertinib as First-line Therapy for Patients With EGFR Mutation-positive Locally Advanced or Metastatic Non-squamous Non-Small Cell Lung Cancer(NSCLC), a Single-Arm, Open-Label, Prospective, Multicenter, Phase II Clinical Trial	II
NCT04425681	Phase II Study of Osimertinib With Bevacizumab for Leptomeningeal Metastasis From EGFR-mutation Non-Small Cell Lung Cancer	II
No NCT ID	Phase II Trial Of Docetaxel Plus Ramucirumab Combination Therapy In Patients With Advanced EGFR Gene Mutation Positive Advanced Stage Non-Squamous Cell Non small Cell Lung Cancer	II
No NCT ID	Clinical Study of Combined Action of the First Generation of TKIs and Brain Radiotherapy on EGFR-Mutated Non-Small-Cell Lung Cancer Patients with Brain Metastasis	II
NCT03446417	A Phase 1/2 Open Label, Multicenter Study to Assess the Safety, Tolerability, Pharmacokinetics, and Anti-tumor Activity of ZN-e4 (KP-673) in Patients With Advanced Non-Small Cell Lung Cancer With Activating Epidermal Growth Factor Receptor (EGFR) Mutations	I/II
NCT03983928	A Phase Ib, Open-label, Single Center, Non-randomized Study for Safety and Efficacy of TQB2450 Combined With Anlotinib in Subjects With Advanced Mutation Positive Non-Small Cell Lung Cancer	I/II
NCT03974022	A Phase I/II, Open-Label, Multicenter Study to Assess the Safety, Tolerability, Pharmacokinetics and Anti-tumor Efficacy of DZD9008 in Patients With Advanced Non-Small Cell Lung Cancer (NSCLC) With EGFR or HER2 Mutation	I/II
NCT03797391	First-in-human, Phase I/II, Multicenter, Open-Label Study of EMB-01 in Patients With Advanced/ Metastatic Solid Tumors	I/II
NCT04085315	A Phase I/Ib Study of Alisertib in Combination With Osimertinib in Metastatic EGFR-mutant Lung Cancer	I
NCT04479306	A Ph Ib Study of Osimertinib + Alisertib or Sapanisertib for Osimertinib-Resistant EGFR Mutant Non-Small Cell Lung Cancer (NSCLC) (Crossover Study)	I
NCT02609776	A Phase I, First-in-Human, Open-Label, Dose Escalation Study of JNJ-61186372, a Human Bispecific EGFR and cMet Antibody, in Subjects With Advanced Non-Small Cell Lung Cancer	I
No NCT ID	Phase I Clinical Study of C-005 Tablet In The Treatment Of Advanced Non-Small Cell Lung Cancer	I



Clinical Trials Summary (continued)

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

NCT ID	Title	Phase
No NCT ID	Phase I Clinical Study of Safety, Tolerability, Pharmacokinetics and Initial Efficacy of RX518 in Patients with Advanced Non-small Cell Lung Cancer	I
No NCT ID	The Clinical Observational Study of Neoadjuvant Target Therapy in Stage IIIB and IV Non-small Cell Lung Cancer Patients	I
NCT03976856	A Phase Ib Clinical Study With Extension Phase to Evaluate Safety and Efficacy of Genolimzumab (GB226) in Combination With Fruquintinib in the Treatment of Relapsed or Metastatic NSCLC Patients	I
No NCT ID	Study Of Immunologic Factor In Re-Biopsy Specimen, Peritumoral BALF, And The Peripheral Blood For Predicting Response To Osimertinib In NSCLC Patients	I
NCT02099058	A Multicenter, Phase I/Ib, Open-Label, Dose-Escalation Study of ABBV-399, an Antibody Drug Conjugate, in Subjects With Advanced Solid Tumors	I
NCT03846310	A Phase I/Ib Study to Evaluate the Safety and Tolerability of Immunotherapy Combinations in Participants With Lung Cancer	I
NCT04141644	A Phase Ib Study to Evaluate the Safety and Efficacy of Osimertinib in Combination With Ipilimumab in Patients With EGFR Mutated Non-Small-Cell Lung Cancer Tumors	I
NCT03891615	Phase I Study of Niraparib in Combination With Osimertinib in EGFR-Mutated Advanced Lung Cancer	I
NCT04250545	A Phase I Trial of MLN0128 (Sapanisertib) and CB-839 HCl (Telaglenastat) in Advanced NSCLC Patients	I
NCT03114319	An Open-label, Multi-center, Phase I, Dose Finding Study of Oral TNO155 in Adult Patients With Advanced Solid Tumors	I
No NCT ID	Phase I Study of DZD9008 in EGFR or HER2 Mutant NSCLC Chinese Patients	I
NCT04077463	An Open-label Phase 1/1b Study to Evaluate the Safety and Pharmacokinetics of JNJ-73841937 (Lazertinib), a Third Generation EGFR-TKI, as Monotherapy or in Combinations With JNJ-61186372, a Human Bispecific EGFR and cMet Antibody in Participants With Advanced Non-Small Cell Lung Cancer	I
No NCT ID	Pharmacokinetic and dose finding study of osimertinib in patients with impaired renal function and low body weight	I
NCT03535363	Phase I Trial of Osimertinib With Stereotactic Radiosurgery (SRS) in Patients With Brain Metastases From EGFR Positive Non-Small-Cell Lung Cancer (NSCLC)	I
No NCT ID	Phase I Clinical Study With Advanced Solid Tumors KBP-5209 Treatment	I
NCT03346811	Efficiency of Icotinib in Plasma ctDNA EGFR Mutation-positive Patients Diagnosed With Lung Cancer:a Single Arm,Multi-center,Open-label Study	II
NCT03065387	Phase I Study of the Pan-ERBB Inhibitor Neratinib Given in Combination With Everolimus, Palbociclib, or Trametinib in Advanced Cancer Subjects With EGFR Mutation/Amplification, HER2 Mutation/Amplification, or HER3/4 Mutation or KRAS Mutation	I
NCT04128085	A Phase I, Open-label, Multicenter, Dose Escalation and Expansion Study to Evaluate the Tolerance and Pharmacokinetics of TQB3804 in Subjects With Advanced Malignant Tumors	I



Clinical Trials Summary (continued)

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

NCT ID	Title	Phase
NCT04429542	First-in-Human, Phase I/Ib, Open-label, Multicenter Study of Bifunctional EGFR/TGFβ Fusion Protein BCA101 Alone and in Combination With Pembrolizumab in Patients With EGFR-Driven Advanced Solid Tumors	I

EGFR p.(T790M) c.2369C>T

NCT ID	Title	Phase
No NCT ID	Clinical Study Anlotinib Combined with Osimertinib in the Treatment of Advanced Non-Squamous Non-Small Cell Lung Cancer with 1st Generation and 2nd Generation EGFR-TKI Resistance with T790M Mutation	IV
No NCT ID	Apatinib Combined With EGFR-TKI For Patients With EGFR Mutation Who Failed EGFR-TKI: A Prospective Study	IV
No NCT ID	Clinical Study Of Combined Action Of Icotinib And Brain Radiotherapy On EGFR-Mutated Non-Small-Cell Lung Cancer Patients With Brain Metastasis	IV
NCT03802240	A Randomized, Double-blind, Multi-center, Phase III Clinical Study Assessing the Efficacy and Safety of Sintilimab ± IBI305 Combined With Pemetrexed and Cisplatin in Patients With EGFR-mutant Locally Advanced or Metastatic Non-squamous Non-small Cell Lung Cancer Who Have Failed Epidermal Growth Factor Receptor Tyrosine Kinase Inhibitor (EGFR-TKI) Treatment (ORIENT-31)	III
NCT03924050	A Randomized, Double-Blind, Placebo-Controlled, Multicenter, Phase III Study of Pemetrexed + Platinum Chemotherapy With or Without Toripalimab (JS001) in Advanced Non-small Cell Lung Cancer (NSCLC) Participants With TKI-resistant EGFR-mutated Tumors	III
NCT03800134	A Phase III, Double-blind, Placebo-controlled, Multi-center International Study of Neoadjuvant/Adjuvant Durvalumab for the Treatment of Patients With Resectable Stages II and III Non-small Cell Lung Cancer (AEGEAN)	III
NCT03992885	Combination Therapy With Icotinib, Pemetrexed and Platinum in Patients With Metastatic Non-squamous Non-small Cell Lung Cancer With EGFR Mutations Who Did Not Progress After Pemetrexed in Combination With Platinum-based Chemotherapy: a Single-arm, Open, Multicenter Clinical Study.	III
NCT03300115	Single-arm, Multi-center, Phase II Clinical Trial of the Efficacy and Safety of AC0010 in the Treatment of EGFR T790M Mutation-positive Patients With Advanced NSCLC	II
NCT03574402	An Open-label, Multi-center, Phase II Umbrella Study to Assess Efficacy of Targeted Therapy or Immunotherapy Directed by Next Generation Sequencing (NGS) in Chinese Patients With Advanced NSCLC (TRUMP)	II
NCT03861156	A Phase II Study to Assess the Safety and Efficacy of D0316 in Patients With Locally Advanced/ Metastatic Non Small Cell Lung Cancer Whose Tumors Are Epidermal Growth Factor Receptor Mutation Positive	II
No NCT ID	An Evaluation of Tumor Response to Osimertinib by Early FDG-PET Finding In Patients with T790M Positive EGFR Mutated Non-Small Cell Lung Cancer	II
No NCT ID	Phase II Study of Osimertinib in Patients with Non-Small Cell Lung Cancer Who Acquired Resistance to Afatinib (ALCSG-04)	II



Clinical Trials Summary (continued)

EGFR p.(T790M) c.2369C>T (continued)

NCT ID	Title	Phase
NCT03433469	A Phase II Study to Evaluate Neoadjuvant Osimertinib Therapy in Patients with Surgically Resectable, EGFR-Mutant Non-Small Cell Lung Cancer	II
NCT03497767	A Randomised Phase II Trial of Osimertinib With or Without Stereotactic Radiosurgery for EGFR Mutated Non-Small Cell Lung Cancer (NSCLC) With Brain Metastases	II
NCT04316351	Efficacy and Safety of Toripalimab (JS001) Combined With Pemetrexed and Anlotinib for Patients With T790M Positive Non-Small Cell Lung Cancer After Osimertinib Resistance: a Phase II, Multi-center, Single Arm Study	II
NCT03376737	A Single-Arm Phase II Clinical Trial of Apatinib as the Maintenance Therapy in Advanced Lung Adenocarcinoma	II
NCT03838848	A Phase II Study to Evaluate the Efficacy, Safety, and Tolerability of KN046 in Patients With Advanced Non-small Cell Lung Cancer	II
NCT03804580	First-Line Treatment With Osimertinib In EGFR-Mutated Non-Small Cell Lung Cancer, Coupled To Extensive Translational Studies	II
No NCT ID	Osimertinib Combined Bevacizumab in Untreated Epidermal Growth Factor Receptor Mutated Non-small-cell Lung Cancer Patients with Malignant Pleural And/Or Pericardial Effusion -phase II Trial	II
No NCT ID	Randomized Controlled Trial for EGFR-TKIs Plus S-1 or EGFR-TKIs as the First-Line Therapy for Patients with Advanced Non-small Cell Lung Cancer Harboring EGFR Mutations	II
No NCT ID	Single arm, Exploratory Study for Apatinib mesylate Combined with EGFR-TKI in Patients with EGFR Mutation-positive Advanced Non-squamous Non-small-cell Lung Cancer	II
No NCT ID	EGFR-TKI Combined With Stereotactic Body Radiation Therapy Versus TKI alone for Stage IV Oncogene-Driven Non-Small Cell Lung Cancer.	II
NCT03904823	An Open, Single-arm, Multi-center, Phase II Clinical Trial of Famitinib Combined With Epidermal Growth Factor Receptor (EGFR) Inhibitor HS-10296 in Patients With Advanced EGFR-mutant Non-Small Cell Lung Cancer (NSCLC)	II
NCT02960607	A Phase II Study of High-dose Icotinib in Previously Treated Non-small Cell Lung Cancer Patients With Epidermal Growth Factor Receptor Mutation	II
NCT03091491	Randomised Phase II Study of Nivolumab Versus Nivolumab and Ipilimumab Combination in EGFR Mutant Non-small Cell Lung Cancer	II
NCT03460275	Osimertinib as First-line Therapy for Patients With EGFR Mutation-positive Locally Advanced or Metastatic Non-squamous Non-Small Cell Lung Cancer(NSCLC), a Single-Arm, Open-Label, Prospective, Multicenter, Phase II Clinical Trial	II
NCT04425681	Phase II Study of Osimertinib With Bevacizumab for Leptomeningeal Metastasis From EGFR-mutation Non-Small Cell Lung Cancer	II
No NCT ID	Phase II Trial Of Docetaxel Plus Ramucirumab Combination Therapy In Patients With Advanced EGFR Gene Mutation Positive Advanced Stage Non-Squamous Cell Non small Cell Lung Cancer	II
No NCT ID	Clinical Study of Combined Action of the First Generation of TKIs and Brain Radiotherapy on EGFR-Mutated Non-Small-Cell Lung Cancer Patients with Brain Metastasis	II



Clinical Trials Summary (continued)

EGFR p.(T790M) c.2369C>T (continued)

NCT ID	Title	Phase
NCT03446417	A Phase 1/2 Open Label, Multicenter Study to Assess the Safety, Tolerability, Pharmacokinetics, and Anti-tumor Activity of ZN-e4 (KP-673) in Patients With Advanced Non-Small Cell Lung Cancer With Activating Epidermal Growth Factor Receptor (EGFR) Mutations	I/II
NCT03974022	A Phase I/II, Open-Label, Multicenter Study to Assess the Safety, Tolerability, Pharmacokinetics and Anti-tumor Efficacy of DZD9008 in Patients With Advanced Non-Small Cell Lung Cancer (NSCLC) With EGFR or HER2 Mutation	I/II
NCT03797391	First-in-human, Phase I/II, Multicenter, Open-Label Study of EMB-01 in Patients With Advanced/ Metastatic Solid Tumors	I/II
NCT04085315	A Phase I/Ib Study of Alisertib in Combination With Osimertinib in Metastatic EGFR-mutant Lung Cancer	I
NCT04479306	A Ph Ib Study of Osimertinib + Alisertib or Sapanisertib for Osimertinib-Resistant EGFR Mutant Non-Small Cell Lung Cancer (NSCLC) (Crossover Study)	I
No NCT ID	Phase I Clinical Study of C-005 Tablet In The Treatment Of Advanced Non-Small Cell Lung Cancer	I
No NCT ID	Phase I Clinical Study of Safety, Tolerability, Pharmacokinetics and Initial Efficacy of RX518 in Patients with Advanced Non-small Cell Lung Cancer	I
NCT03754244	A Phase I Study of TQ-B3456 on Tolerance and Pharmacokinetics	I
No NCT ID	Evaluation Of The Phase I Clinical Trial Of Safety, Tolerability, Pharmacokinetic Characteristics, And Preliminary Efficacy Of YK-029A Tablets In Patients With Advanced Non-Small Cell Lung Cancer (NSCLC)	I
No NCT ID	A Multicenter, Open and Dose Escalation Phase I Study of YZJ-0318 Maleate Tablets in Patients with Advanced Non-Small Cell Lung Cancer with Positive Epidermal Growth Factor Receptor T790M Mutation.	I
NCT02609776	A Phase I, First-in-Human, Open-Label, Dose Escalation Study of JNJ-61186372, a Human Bispecific EGFR and cMet Antibody, in Subjects With Advanced Non-Small Cell Lung Cancer	I
NCT04001777	A Phase Ib Study of Safety and Efficacy of APG-1252 in Combination With Osimertinib (AZD9291) in EGFR TKI Resistant NSCLC Patients	I
No NCT ID	Phase I Study of DZD9008 in EGFR or HER2 Mutant NSCLC Chinese Patients	I
NCT04077463	An Open-label Phase 1/1b Study to Evaluate the Safety and Pharmacokinetics of JNJ-73841937 (Lazertinib), a Third Generation EGFR-TKI, as Monotherapy or in Combinations With JNJ-61186372, a Human Bispecific EGFR and cMet Antibody in Participants With Advanced Non-Small Cell Lung Cancer	I
No NCT ID	Study Of Immunologic Factor In Re-Biopsy Specimen, Peritumoral BALF, And The Peripheral Blood For Predicting Response To Osimertinib In NSCLC Patients	I
No NCT ID	Pharmacokinetic and dose finding study of osimertinib in patients with impaired renal function and low body weight	I
NCT03535363	Phase I Trial of Osimertinib With Stereotactic Radiosurgery (SRS) in Patients With Brain Metastases From EGFR Positive Non-Small-Cell Lung Cancer (NSCLC)	I
No NCT ID	Phase I Clinical Study With Advanced Solid Tumors KBP-5209 Treatment	I



Clinical Trials Summary (continued)

EGFR p.(T790M) c.2369C>T (continued)

NCT ID	Title	Phase
NCT03065387	Phase I Study of the Pan-ERBB Inhibitor Neratinib Given in Combination With Everolimus, Palbociclib, or Trametinib in Advanced Cancer Subjects With EGFR Mutation/Amplification, HER2 Mutation/Amplification, or HER3/4 Mutation or KRAS Mutation	I
NCT04128085	A Phase I, Open-label, Multicenter, Dose Escalation and Expansion Study to Evaluate the Tolerance and Pharmacokinetics of TQB3804 in Subjects With Advanced Malignant Tumors	I
NCT04429542	First-in-Human, Phase I/Ib, Open-label, Multicenter Study of Bifunctional EGFR/TGFβ Fusion Protein BCA101 Alone and in Combination With Pembrolizumab in Patients With EGFR-Driven Advanced Solid Tumors	I

PIK3CA p.(E545K) c.1633G>A

NCT ID	Title	Phase
NCT03994796	Genomically-Guided Treatment Trial in Brain Metastases	II
NCT03065062	Phase I Study of the CDK4/6 Inhibitor Palbociclib (PD-0332991) in Combination With the PI3K/mTOR Inhibitor Gedatolisib (PF-05212384) for Patients With Advanced Squamous Cell Lung, Pancreatic, Head & Neck and Other Solid Tumors	I
NCT02688881	Study to Evaluate the Safety and Efficacy of Sirolimus, in Subject With Refractory Solid Tumors	II
NCT03239015	Efficacy and Safety of Targeted Precision Therapy in Refractory Tumor With Druggable Molecular Event	II
NCT03155620	NCI-COG Pediatric MATCH (Molecular Analysis for Therapy Choice) Screening Protocol	II
NCT03213678	NCI-COG Pediatric MATCH (Molecular Analysis for Therapy Choice)- Phase II Subprotocol of LY3023414 in Patients With Solid Tumors	II
NCT03297606	Canadian Profiling and Targeted Agent Utilization Trial (CAPTUR): A Phase II Basket Trial	II
NCT04317105	A Phase I/II Biomarker Driven Combination Trial of Copanlisib and Immune Checkpoint Inhibitors in Patients With Advanced Solid Tumors	I/II
No NCT ID	Phase I/II Study of TAS-117 In Combination With TAS-120 In Patients With Advanced Solid Tumors	I/II
NCT03842228	A Phase Ib Biomarker-Driven Combination Trial of Copanlisib, Olaparib, and MEDI4736 (Durvalumab) in Patients With Advanced Solid Tumors	I
NCT03006172	A Phase I, Open-Label, Dose-Escalation Study Evaluating the Safety, Tolerability, and Pharmacokinetics of GDC-0077 as a Single Agent in Patients With Locally Advanced or Metastatic PIK3CA-Mutant Solid Tumors and in Combination With Endocrine and Targeted Therapies in Patients With Locally Advanced or Metastatic PIK3CA-Mutant Hormone-Receptor Positive Breast Cancer	I
NCT04192981	A Phase I Study With Expansion Cohort of Concurrent GDC-0084 With Radiation Therapy for Patients With Solid Tumor Brain Metastases or Leptomeningeal Metastases Harboring PI3K Pathway Mutations	I



Clinical Trials Summary (continued)

KRAS amplification

NCT ID	Title	Phase
NCT03905148	A Phase Ib, Open-Label, Dose-escalation and Expansion Study to Investigate the Safety, Pharmacokinetics and Antitumor Activities of a RAF Dimer Inhibitor BGB-283 in Combination With MEK Inhibitor PD-0325901 in Patients With Advanced or Refractory Solid Tumors	I/II
NCT04418661	A Phase I, Open-label, Multicenter, Safety Study of SAR442720 in Combination With Pembrolizumab in Patients With Advanced Malignancies	I
NCT03989115	A Phase Ib/II, Open-Label, Multicenter Dose-Escalation and Dose-Expansion Study of the Combination of RMC-4630 and Cobimetinib in Adult Participants With Relapsed/Refractory Solid Tumors With Specific Genomic Aberrations	I/II
NCT03520075	A Phase I/II Study of the Safety, Pharmacokinetics, and Activity of ASTX029 in Subjects With Advanced Solid Tumors	I/II
NCT03634982	A Phase I, Open-Label, Multicenter, Dose-Escalation Study of RMC-4630 Monotherapy in Adult Participants with Relapsed/Refractory Solid Tumors	I
NCT04249843	A First-in-Human, Phase Ia/Ib, Open Label, Dose-Escalation and Expansion Study to Investigate the Safety, Pharmacokinetics, and Antitumor Activity of the RAF Dimer Inhibitor BGB-3245 in Patients With Advanced or Refractory Tumors	I
NCT02607813	A Phase I Dose Finding Study of Oral LXH254 in Adult Patients With Advanced Solid Tumors Harboring MAPK Pathway Alterations	I
NCT02857270	A Phase I Study of an ERK1/2 Inhibitor (LY3214996) Administered Alone or in Combination With Other Agents in Advanced Cancer	I

EGFR amplification

NCT ID	Title	Phase
NCT03574402	An Open-label, Multi-center, Phase II Umbrella Study to Assess Efficacy of Targeted Therapy or Immunotherapy Directed by Next Generation Sequencing (NGS) in Chinese Patients With Advanced NSCLC (TRUMP)	II
NCT04429542	First-in-Human, Phase I/Ib, Open-label, Multicenter Study of Bifunctional EGFR/TGFβ Fusion Protein BCA101 Alone and in Combination With Pembrolizumab in Patients With EGFR-Driven Advanced Solid Tumors	I
NCT03065387	Phase I Study of the Pan-ERBB Inhibitor Neratinib Given in Combination With Everolimus, Palbociclib, or Trametinib in Advanced Cancer Subjects With EGFR Mutation/Amplification, HER2 Mutation/Amplification, or HER3/4 Mutation or KRAS Mutation	I



Alerts Informed By Public Data Sources

Current NCCN Information

Contraindicated
 Not recommended
 Resistance

NCCN information is current as of 2020-10-01. For the most up-to-date information, search www.nccn.org.
For NCCN International Adaptations & Translations, search www.nccn.org/global/international_adaptations.aspx.

EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA

alectinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFRi sensitizing mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "Thus, crizotinib, ceritinib, alectinib, brigatinib, or lorlatinib are not recommended as subsequent therapy for patients with sensitizing EGFR mutations who relapse on EGFR TKI therapy."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

brigatinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFRi sensitizing mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "Thus, crizotinib, ceritinib, alectinib, brigatinib, or lorlatinib are not recommended as subsequent therapy for patients with sensitizing EGFR mutations who relapse on EGFR TKI therapy."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

ceritinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFRi sensitizing mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "Thus, crizotinib, ceritinib, alectinib, brigatinib, or lorlatinib are not recommended as subsequent therapy for patients with sensitizing EGFR mutations who relapse on EGFR TKI therapy."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]



EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

— crizotinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFRi sensitizing mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "Thus, crizotinib, ceritinib, alectinib, brigatinib, or lorlatinib are not recommended as subsequent therapy for patients with sensitizing EGFR mutations who relapse on EGFR TKI therapy."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

— lorlatinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFRi sensitizing mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "Thus, crizotinib, ceritinib, alectinib, brigatinib, or lorlatinib are not recommended as subsequent therapy for patients with sensitizing EGFR mutations who relapse on EGFR TKI therapy."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

— atezolizumab

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "subsequent therapy with pembrolizumab, nivolumab, or atezolizumab is not recommended in patients with EGFR mutations or ALK fusions."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

— nivolumab

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "subsequent therapy with pembrolizumab, nivolumab, or atezolizumab is not recommended in patients with EGFR mutations or ALK fusions."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]



EGFR p.(E746_A750del) c.2236_2250delGAATTAAGAGAAGCA (continued)

– pembrolizumab

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "subsequent therapy with pembrolizumab, nivolumab, or atezolizumab is not recommended in patients with EGFR mutations or ALK fusions."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

EGFR p.(T790M) c.2369C>T

– atezolizumab

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "subsequent therapy with pembrolizumab, nivolumab, or atezolizumab is not recommended in patients with EGFR mutations or ALK fusions."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

– nivolumab

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "subsequent therapy with pembrolizumab, nivolumab, or atezolizumab is not recommended in patients with EGFR mutations or ALK fusions."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

– pembrolizumab

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "subsequent therapy with pembrolizumab, nivolumab, or atezolizumab is not recommended in patients with EGFR mutations or ALK fusions."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]



EGFR p.(T790M) c.2369C>T (continued)

afatinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR T790M mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "The most common known mechanism is the acquisition of T790M (which is a secondary mutation in EGFR), which renders the kinase resistant to erlotinib, gefitinib, dacomitinib, or afatinib."
- "EGFR p.Thr790Met (T790M) is a mutation associated with acquired resistance to EGFR TKI therapy and has been reported in about 60% of patients with disease progression after initial response to erlotinib, gefitinib, or afatinib."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

dacomitinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR T790M mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "The most common known mechanism is the acquisition of T790M (which is a secondary mutation in EGFR), which renders the kinase resistant to erlotinib, gefitinib, dacomitinib, or afatinib."
- "EGFR p.Thr790Met (T790M) is a mutation associated with acquired resistance to EGFR TKI therapy and has been reported in about 60% of patients with disease progression after initial response to erlotinib, gefitinib, or afatinib."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

erlotinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR T790M mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "The most common known mechanism is the acquisition of T790M (which is a secondary mutation in EGFR), which renders the kinase resistant to erlotinib, gefitinib, dacomitinib, or afatinib."
- "EGFR p.Thr790Met (T790M) is a mutation associated with acquired resistance to EGFR TKI therapy and has been reported in about 60% of patients with disease progression after initial response to erlotinib, gefitinib, or afatinib."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]



EGFR p.(T790M) c.2369C>T (continued)

gefitinib

Cancer type: Non-Small Cell Lung Cancer

Variant class: EGFR T790M mutation

Summary:

NCCN Guidelines® include the following supporting statement(s):

- "The most common known mechanism is the acquisition of T790M (which is a secondary mutation in EGFR), which renders the kinase resistant to erlotinib, gefitinib, dacomitinib, or afatinib."
- "EGFR p.Thr790Met (T790M) is a mutation associated with acquired resistance to EGFR TKI therapy and has been reported in about 60% of patients with disease progression after initial response to erlotinib, gefitinib, or afatinib."

Reference: NCCN Guidelines® - NCCN-Non-Small Cell Lung Cancer [Version 8.2020]

Current EMA Information

 Contraindicated  Not recommended  Resistance

EMA information is current as of 2020-10-14. For the most up-to-date information, search www.ema.europa.eu/ema.

EGFR p.(T790M) c.2369C>T

gefitinib

Cancer type: Non-Small Cell Lung Cancer

Label as of: 2019-05-28

Variant class: EGFR T790M mutation

Reference:

https://www.ema.europa.eu/en/documents/product-information/iressa-epar-product-information_en.pdf



Signatures

Testing Personnel:

Laboratory Supervisor:

Pathologist:



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