

Tables S1 *EGFR*-mutant non-small cell lung cancer, prospective trials

**Meta-analysis: proportion**

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Gettinger <i>JCO</i> 2015 (33)	12	16.667	2.086 to 48.414	6.60	7.40
Gettinger <i>JCO</i> 2016 (34)	7	14.286	0.361 to 57.872	4.06	4.69
Nishio <i>ESMO Open</i> 2016 (35)	20	5.000	0.127 to 24.873	10.66	11.41
Leighl <i>Lancet Respir Med</i> 2019 (36)	74	5.405	1.492 to 13.266	38.07	31.20
Nishio <i>Cancer Science</i> 2019 (37)	10	0.000	0.000 to 30.850	5.58	6.34
Gulley <i>Lancet Oncol</i> 2017 (38)	9	0.000	0.000 to 33.627	5.08	5.80
Horn <i>Eur J Cancer</i> 2018 (39)	10	0.000	0.000 to 30.850	5.58	6.34
Peters <i>JCO</i> 2017 (1 <sup>st</sup> line) (40)	13	23.077	5.038 to 53.813	7.11	7.92
Peters <i>JCO</i> 2017 (2 <sup>nd</sup> line) (40)	18	0.000	0.000 to 18.530	9.64	10.45
Peters <i>JCO</i> 2017 (3 <sup>rd</sup> line) (40)	14	7.143	0.181 to 33.868	7.61	8.44
Total (fixed effects)	187	7.015	3.871 to 11.526	100.00	100.00
Total (random effects)	187	7.158	3.711 to 11.618	100.00	100.00

**Test for heterogeneity**

Q	10.0264
DF	9
Significance level	P=0.3484
I <sup>2</sup> (inconsistency)	10.24%
95% CI for I <sup>2</sup>	0.00 to 50.56

Tables S2 *EGFR*-wild-type non-small cell lung cancer, prospective trials

**Meta-analysis: proportion**

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Gettinger <i>JCO</i> 2015 (33)	56	19.643	10.235 to 32.433	4.47	7.48
Gettinger <i>JCO</i> 2016 (34)	30	30.000	14.735 to 49.396	2.43	4.74
Nishio <i>ESMO Open</i> 2016 (35)	56	28.571	17.295 to 42.210	4.47	7.48
Leighl <i>Lancet Respir Med</i> 2019 (36)	449	22.717	18.921 to 26.877	35.32	18.71
Nishio <i>Cancer Science</i> 2019 (37)	19	31.579	12.576 to 56.550	1.57	3.29
Gulley <i>Lancet Oncol</i> 2017 (38)	101	9.901	4.851 to 17.455	8.01	10.73
Horn <i>Eur J Cancer</i> 2018 (39)	55	27.273	16.138 to 40.962	4.40	7.38
Peters <i>JCO</i> 2017 (1 <sup>st</sup> line) (40)	104	19.231	12.160 to 28.126	8.24	10.90
Peters <i>JCO</i> 2017 (2 <sup>nd</sup> line) (40)	201	21.393	15.936 to 27.714	15.86	14.76
Peters <i>JCO</i> 2017 (3 <sup>rd</sup> line) (40)	193	18.135	12.969 to 24.308	15.23	14.53
Total (fixed effects)	1264	21.145	18.932 to 23.492	100.00	100.00
Total (random effects)	1264	21.277	17.883 to 24.881	100.00	100.00

**Test for heterogeneity**

Q	17.1964
DF	9
Significance level	<b>P=0.0457</b>
I <sup>2</sup> (inconsistency)	47.66%
95% CI for I <sup>2</sup>	0.00 to 74.75

Tables S3 *EGFR*-mutant non-small cell lung cancer, retrospective studies

**Meta-analysis: proportion**

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Garassino <i>JTO</i> 2018 (44)	102	8.824	4.114 to 16.090	9.38	9.38
Morita <i>Lung Cancer</i> 2020 (45)	116	8.621	4.212 to 15.283	10.66	10.66
Lin <i>J Cancer</i> 2018 (48)	25	12.000	2.547 to 31.219	2.37	2.37
Omori <i>Mol Clin Oncol</i> 2019 (49)	13	0.000	0.000 to 24.705	1.28	1.28
Ahn <i>J Cancer Res Clin Oncol</i> 2019 (50)	23	13.043	2.775 to 33.589	2.19	2.19
Fujimoto <i>Lung Cancer</i> 2018 (51)	64	9.375	3.519 to 19.297	5.92	5.92
Kobayashi <i>Int J Clin Oncol</i> 2017 (52)	16	6.250	0.158 to 30.232	1.55	1.55
Gainor <i>Clin Cancer Res</i> 2016 (17)	22	4.545	0.115 to 22.844	2.09	2.09
Cho <i>J Cancer Res Clin Oncol</i> 2019 (53)	38	15.789	6.023 to 31.253	3.55	3.55
Bylicki <i>Med Baltimore</i> 2020 (58)	42	19.048	8.601 to 34.118	3.92	3.92
Sakamoto <i>Mol Clin Oncol</i> 2019 (59)	24	16.667	4.735 to 37.384	2.28	2.28
Sato <i>Plos One</i> 2019 (60)	9	11.111	0.281 to 48.250	0.91	0.91
Ng <i>Cancer</i> 2019 (61)	12	0.000	0.000 to 26.465	1.18	1.18
Kobayashi <i>Clin Lung Cancer</i> 2018 (62)	16	0.000	0.000 to 20.591	1.55	1.55
Yoshida <i>Ann Oncol</i> 2018 (63)	24	8.333	1.026 to 26.997	2.28	2.28
Haratani <i>Ann Oncol</i> 2017 (64)	25	20.000	6.831 to 40.704	2.37	2.37
Yamada <i>Cancer Med</i> 2019 (65)	27	22.222	8.622 to 42.258	2.55	2.55
Song <i>Sci Rep</i> 2019 (66)	3	33.333	0.840 to 90.570	0.36	0.36
Fang <i>Clin Cancer Res</i> 2019 (67)	7	0.000	0.000 to 40.962	0.73	0.73
Mazières <i>Ann Oncol</i> 2019 (68)	115	12.174	6.818 to 19.582	10.56	10.56
Hastings <i>Ann Oncol</i> 2019 (69)	171	9.942	5.899 to 15.440	15.66	15.66
Guibert <i>Lung Cancer</i> 2019 (70)	5	0.000	0.000 to 52.182	0.55	0.55
Oya <i>Oncotarget</i> 2017 (72)	22	9.091	1.121 to 29.161	2.09	2.09
Schouten <i>Lung Cancer</i> 2018 (73)	9	0.000	0.000 to 33.627	0.91	0.91
Bagley <i>Lung Cancer</i> 2017 (74)	12	8.333	0.211 to 38.480	1.18	1.18
Takeda <i>Oncotarget</i> 2018 (78)	5	20.000	0.505 to 71.642	0.55	0.55
Taniguchi <i>Ann Oncol</i> 2018 (79)	3	33.333	0.840 to 90.570	0.36	0.36
Landi <i>J Immunother Cancer</i> 2019 (80)	102	8.824	4.114 to 16.090	9.38	9.38
Gainor <i>Ann Oncol</i> 2020 (81)	17	17.647	3.799 to 43.432	1.64	1.64
Total (fixed effects)	1069	11.056	9.262 to 13.062	100.00	100.00
Total (random effects)	1069	11.056	9.270 to 12.978	100.00	100.00

**Test for heterogeneity**

Q	27.6009
DF	28
Significance level	P=0.4857
I <sup>2</sup> (inconsistency)	0.00%
95% CI for I <sup>2</sup>	0.00 to 40.50

Table S4 *EGFR*-wild-type non-small cell lung cancer, retrospective studies

**Meta-analysis: proportion**

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Garassino <i>JTO</i> 2018 (44)	1293	19.567	17.437 to 21.836	58.31	24.48
Morita <i>Lung Cancer</i> 2020 (45)	641	22.621	19.436 to 26.060	28.93	23.29
Lin <i>J Cancer</i> 2018 (48)	36	44.444	27.935 to 61.902	1.67	9.02
Omori <i>Mol Clin Oncol</i> 2019 (49)	44	29.545	16.764 to 45.202	2.03	10.20
Kobayashi <i>Int J Clin Oncol</i> 2017 (52)	28	14.286	4.034 to 32.665	1.31	7.65
Gainor <i>Clin Cancer Res</i> 2016 (81)	30	23.333	9.934 to 42.284	1.40	8.01
Cho <i>J Cancer Res Clin Oncol</i> 2019 (53)	140	32.857	25.161 to 41.297	6.35	17.33
Total (fixed effects)	2212	21.835	20.132 to 23.613	100.00	100.00
Total (random effects)	2212	25.652	20.598 to 31.057	100.00	100.00

**Test for heterogeneity**

Q	24.4365
DF	6
Significance level	<b>P=0.0004</b>
I <sup>2</sup> (inconsistency)	75.45%
95% CI for I <sup>2</sup>	48.07 to 88.39

Table S5 *KRAS*-mutant non-small cell lung cancer, prospective trials

**Meta-analysis: proportion**

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Peters <i>JCO</i> 2017 (1 <sup>st</sup> line) (40)	33	27.273	13.300 to 45.524	16.67	17.96
Peters <i>JCO</i> 2017 (2 <sup>nd</sup> line) (40)	50	32.000	19.520 to 46.699	25.00	21.39
Peters <i>JCO</i> 2017 (3 <sup>rd</sup> line) (40)	54	18.519	9.255 to 31.430	26.96	22.00
Horn <i>Eur J Cancer</i> 2018 (39)	14	14.286	1.779 to 42.813	7.35	11.17
Gulley <i>Lancet Oncol</i> 2017 (38)	38	7.895	1.659 to 21.377	19.12	19.14
Gettinger <i>JCO</i> 2016 (34)	9	33.333	7.485 to 70.070	4.90	8.34
Total (fixed effects)	198	21.796	16.334 to 28.097	100.00	100.00
Total (random effects)	198	21.856	14.013 to 30.883	100.00	100.00

**Test for heterogeneity**

Q	10.1450
DF	5
Significance level	P=0.0712
I <sup>2</sup> (inconsistency)	50.71%
95% CI for I <sup>2</sup>	0.00 to 80.39

**Table S6** *KRAS*-wild-type non-small cell lung cancer, prospective trials

**Meta-analysis: proportion**

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Peters <i>JCO</i> 2017 (1 <sup>st</sup> line) (40)	104	10.577	5.400 to 18.137	22.93	21.81
Peters <i>JCO</i> 2017 (2 <sup>nd</sup> line) (40)	150	16.000	10.529 to 22.865	32.97	23.69
Peters <i>JCO</i> 2017 (3 <sup>rd</sup> line) (40)	134	17.910	11.826 to 25.467	29.48	23.15
Horn <i>Eur J Cancer</i> 2018 (39)	35	37.143	21.473 to 55.077	7.86	14.55
Gulley <i>Lancet Oncol</i> 2017 (38)	21	4.762	0.120 to 23.816	4.80	11.01
Gettinger <i>JCO</i> 2016 (34)	8	25.000	3.185 to 65.086	1.97	5.78
Total (fixed effects)	452	16.544	13.257 to 20.270	100.00	100.00
Total (random effects)	452	17.396	11.290 to 24.498	100.00	100.00

**Test for heterogeneity**

Q	14.2114
DF	5
Significance level	<b>P=0.0143</b>
I <sup>2</sup> (inconsistency)	64.82%
95% CI for I <sup>2</sup>	15.33 to 85.38

Table S7 *KRAS*-mutant non-small cell lung cancer, retrospective studies

**Meta-analysis: proportion**

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Passiglia <i>Br J Cancer</i> 2019 (112)	206	19.903	14.678 to 26.016	25.21	14.67
Lin <i>J Cancer</i> 2018 (48)	10	30.000	6.674 to 65.245	1.34	4.47
Garde-Noguera <i>Clin Transl Oncol</i> 2018 (113)	19	15.789	3.383 to 39.578	2.44	6.68
Torralvo <i>Cancer Genomic Proteomics</i> 2019 (115)	21	61.905	38.435 to 81.893	2.68	7.07
Gianoncelli <i>Anticancer Res</i> 2020 (116)	43	18.605	8.391 to 33.401	5.36	9.95
Ng <i>Cancer</i> 2019 (61)	56	16.071	7.622 to 28.328	6.94	10.97
Oya <i>Oncotarget</i> 2017 (72)	14	28.571	8.389 to 58.104	1.83	5.56
Schouten <i>Lung Cancer</i> 2018 (73)	84	22.619	14.201 to 33.047	10.35	12.39
Mazières <i>Ann Oncol</i> 2019 (68)	246	26.016	20.650 to 31.971	30.09	14.98
Gainor <i>Ann Oncol</i> 2020 (81)	112	39.286	30.191 to 48.962	13.76	13.26
Total (fixed effects)	811	25.580	22.627 to 28.710	100.00	100.00
Total (random effects)	811	26.699	20.516 to 33.377	100.00	100.00

**Test for heterogeneity**

Q	30.8171
DF	9
Significance level	<b>P=0.0003</b>
I <sup>2</sup> (inconsistency)	70.80%
95% CI for I <sup>2</sup>	44.22 to 84.71

Table S8 *KRAS*-wild-type non-small cell lung cancer, retrospective studies

**Meta-analysis: proportion**

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Passiglia <i>Br J Cancer</i> 2019 (112)	324	16.975	13.052 to 21.515	60.86	26.11
Lin <i>J Cancer</i> 2018 (48)	39	5.128	0.627 to 17.324	7.49	18.84
Garde-Noguera <i>Clin Transl Oncol</i> 2018 (113)	32	28.125	13.746 to 46.747	6.18	17.65
Torralvo <i>Cancer Genomic Proteomics</i> 2019 (115)	17	47.059	22.983 to 72.188	3.37	13.57
Gianoncelli <i>Anticancer Res</i> 2020 (116)	117	27.350	19.519 to 36.364	22.10	23.84
Total (fixed effects)	529	19.766	16.470 to 23.401	100.00	100.00
Total (random effects)	529	22.400	13.325 to 33.039	100.00	100.00

**Test for heterogeneity**

Q	20.3599
DF	4
Significance level	<b>P=0.0004</b>
I <sup>2</sup> (inconsistency)	80.35%
95% CI for I <sup>2</sup>	53.86 to 91.63



Table S9 *ALK*-rearranged non-small cell lung cancer, retrospective studies

**Meta-analysis: proportion**

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Mazières <i>Ann Oncol</i> 2019 (68)	19	0.000	0.000 to 17.647	25.64	25.64
Heo <i>Thorac Cancer</i> 2019 (125)	14	14.286	1.779 to 42.813	19.23	19.23
Fujimoto <i>Lung Cancer</i> 2018 (51)	11	18.182	2.283 to 51.776	15.38	15.38
Bylicki <i>Med Baltimore</i> 2020 (58)	8	25.000	3.185 to 65.086	11.54	11.54
Ng <i>Cancer</i> 2019 (61)	4	0.000	0.000 to 60.236	6.41	6.41
Kobayashi <i>Clin Lung Cancer</i> 2018 (62)	3	0.000	0.000 to 70.760	5.13	5.13
Bagley <i>Lung Cancer</i> 2017 (74)	3	0.000	0.000 to 70.760	5.13	5.13
Gainor <i>Clin Cancer Res</i> 2016 (17)	6	0.000	0.000 to 45.926	8.97	8.97
Guibert <i>Lung Cancer</i> 2019 (70)	1	0.000	0.000 to 97.500	2.56	2.56
Total (fixed effects)	69	9.602	4.096 to 18.404	100.00	100.00
Total (random effects)	69	9.602	4.108 to 17.078	100.00	100.00

**Test for heterogeneity**

Q	7.8326
DF	8
Significance level	P=0.4500
I <sup>2</sup> (inconsistency)	0.00%
95% CI for I <sup>2</sup>	0.00 to 64.30

Tables S10 *BRAF*-mutant non-small cell lung cancer, retrospective studies

**Meta-analysis: proportion**

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Rihawi <i>JTO</i> 2019 (138)	11	9.091	0.230 to 41.278	9.38	9.38
Guisier <i>JTO</i> 2020 (139)	26	23.077	8.974 to 43.648	21.09	21.09
Schouten <i>Lung Cancer</i> 2018 (73)	4	0.000	0.000 to 60.236	3.91	3.91
Dudnik <i>JTO</i> 2018 (140)	12	25.000	5.486 to 57.186	10.16	10.16
Dudnik <i>Lung Cancer</i> 2019 (141)	4	25.000	0.631 to 80.588	3.91	3.91
Mazières <i>Ann Oncol</i> 2019 (68)	37	24.324	11.773 to 41.199	29.69	29.69
Ng <i>Cancer</i> 2019 (61)	8	25.000	3.185 to 65.086	7.03	7.03
Oya <i>Oncotarget</i> 2017 (72)	1	0.000	0.000 to 97.500	1.56	1.56
Gainor <i>Ann Oncol</i> 2020 (81)	16	43.750	19.753 to 70.122	13.28	13.28
Total (fixed effects)	119	25.143	17.896 to 33.575	100.00	100.00
Total (random effects)	119	25.143	18.037 to 32.993	100.00	100.00

**Test for heterogeneity**

Q	6.0892
DF	8
Significance level	P=0.6372
I <sup>2</sup> (inconsistency)	0.00%
95% CI for I <sup>2</sup>	0.00 to 54.08

Table S11 *RET*-rearranged non-small cell lung cancer, retrospective studies

**Meta-analysis: proportion**

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Mazières <i>Ann Oncol</i> 2019 (68)	16	6.250	0.158 to 30.232	34.00	28.98
Offin <i>JCO PO</i> 2019 (11)	13	0.000	0.000 to 24.705	28.00	26.12
Guisier <i>JTO</i> 2020 (139)	9	33.333	7.485 to 70.070	20.00	21.35
Dudnik <i>Lung Cancer</i> 2018 (141)	5	0.000	0.000 to 52.182	12.00	14.97
Ng <i>Cancer</i> 2019 (61)	2	0.000	0.000 to 84.189	6.00	8.57
Total (fixed effects)	45	9.258	2.904 to 20.867	100.00	100.00
Total (random effects)	45	9.564	1.819 to 22.442	100.00	100.00

**Test for heterogeneity**

Q	6.1108
DF	4
Significance level	P=0.1910
I <sup>2</sup> (inconsistency)	34.54%
95% CI for I <sup>2</sup>	0.00 to 75.36