Supplemental Information

Comparing the Efficacy of Cancer Therapies

between Subgroups in Basket Trials

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Inventory of Supplemental Information

A.

Mutation Type (n= number of patients per subgroup)	Test for larger benefit in tumor volume		Conclusion based on 25% False Discovery Rate
	p-value	Benjamini-Hochberg critical value for 1-sided test	
L755 Hotspot (n =13)	0.031	0.025	N.S.
Exon20 Insertion Hotspot (n= 28)	0.162	0.050	N.S.
S310 Hotspot (n= 30)	0.267	0.075	N.S.
V777 Hotspot (n= 15)	0.276	0.100	N.S.
ERBB3 Nonhotspot (n= 4)	0.421	0.125	N.S.
Other Hotspot (n= 9)	0.529	0.150	N.S.
PKD Nonhotspot (n= 12)	0.651	0.175	N.S.
ERBB3 Hotspot (n= 12)	0.931	0.200	N.S.
PKD Hotspot (n= 14)	0.950	0.225	N.S.
Other Nonhotspot (n= 4)	0.954	0.250	N.S.

B.

Mutation Type (n= number of patients per subgroup)	Test for larger benefit in hazard ratio for progression		Conclusion based on 25% False Discovery Rate
	p-value	Benjamini-Hochberg critical value for 1-sided test	
Exon20 Insertion Hotspot (n= 26)	**0.011**	**0.025**	**Larger Benefit**
S310 Hotspot (n= 30)	0.094	0.050	N.S.
Other Hotspot (n= 8)	0.274	0.075	N.S.
L755 Hotspot (n= 13)	0.456	0.100	N.S.
PKD Hotspot (n= 14)	0.499	0.125	N.S.
PKD Nonhotspot (n= 11)	0.759	0.150	N.S.
V777 Hotspot (n= 15)	0.944	0.175	N.S.
ERBB3 Nonhotspot (n= 4)	0.962	0.200	N.S.
ERBB3 Hotspot (n= 12)	0.970	0.225	N.S.
Other Nonhotspot (n= 4)	0.985	0.250	N.S.

Supplementary Table S1. Benjamini-Hochberg critical values for analysis of neratinib tumor volume responses (A) and hazard ratios for progression (B) by specific mutation type. Related to Figure 2.

A.

| NRTK paralog (n= number of patients per subgroup)	Test for larger benefit in tumor volume		Test for smaller benefit in tumor volume		Conclusion based on 25% False Discovery Rate
	p-value	Benjamini-Hochberg critical value for 2-sided test	p-value	Benjamini-Hochberg critical value for 2-sided test	
NTRK3 (n= 28)	0.147	0.063	0.854	0.125	N.S.
NTRK1 (n= 24)	0.804	0.125	0.197	0.063	N.S.

B.

NRTK fusion partner (n= number of patients per subgroup)	Test for larger benefit in tumor volume		Test for smaller benefit in tumor volume		Conclusion based on 25% False Discovery Rate
	p-value	Benjamini-Hochberg critical value for 2-sided test	p-value	Benjamini-Hochberg critical value for 2-sided test	
ETV6-NTRK3 (n= 27)	0.160	0.042	0.840	0.125	N.S.
TPM3-NTRK1 (n= 9)	0.757	0.083	0.246	0.083	N.S.
LMNA-NTRK1 (n= 5)	0.941	0.125	0.059	0.042	N.S.

Supplementary Table S2. Benjamini-Hochberg critical values for analysis of larotrectinib tumor volume responses by genomic status. Related to Figure 3.
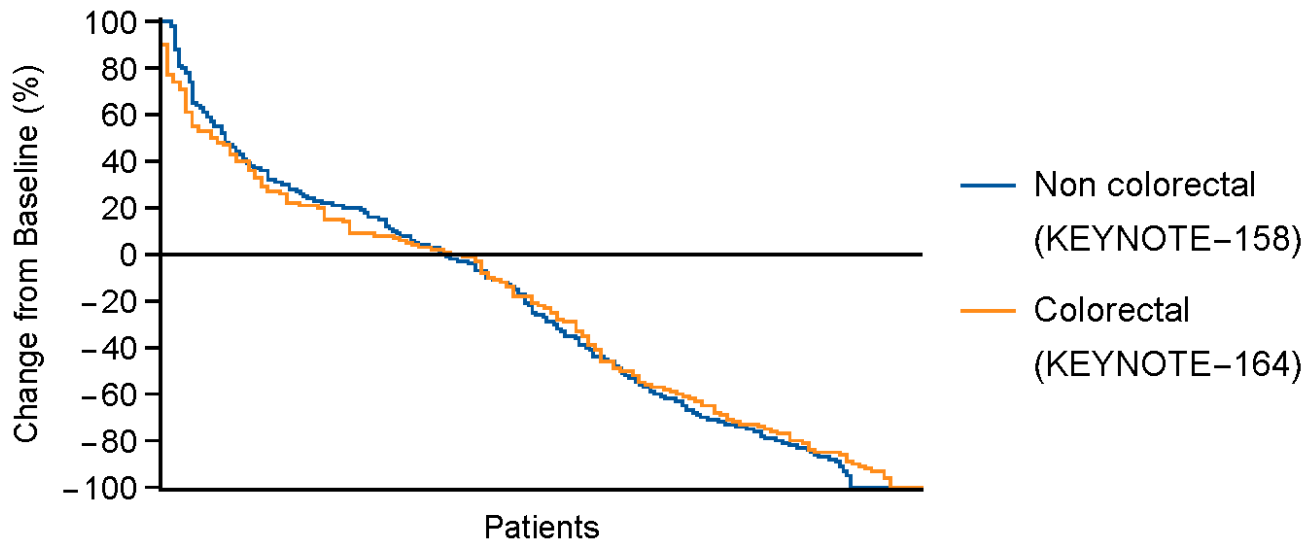
Supplementary Figure S1. Comparison of tumor volume changes in response to pembrolizumab in colorectal and non-colorectal cancers. Related to Figure 4. Patient tumor volume change data was extracted from the KEYNOTE-158 (n=233) and KEYNOTE-164 (n=124) trials. Both trials tested the PD-L1 inhibitor, pembrolizumab, in colorectal and noncolorectal cancers.
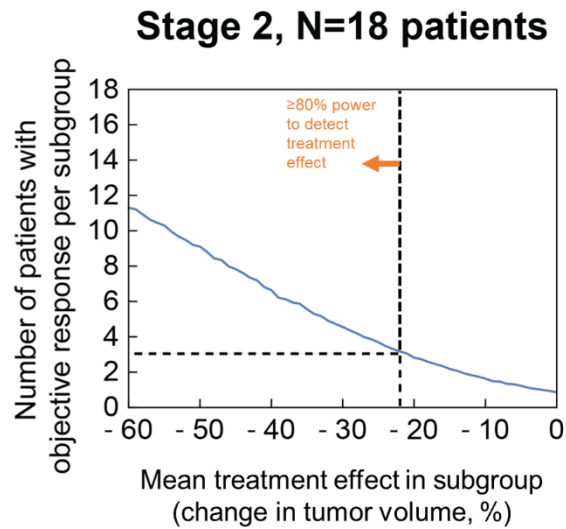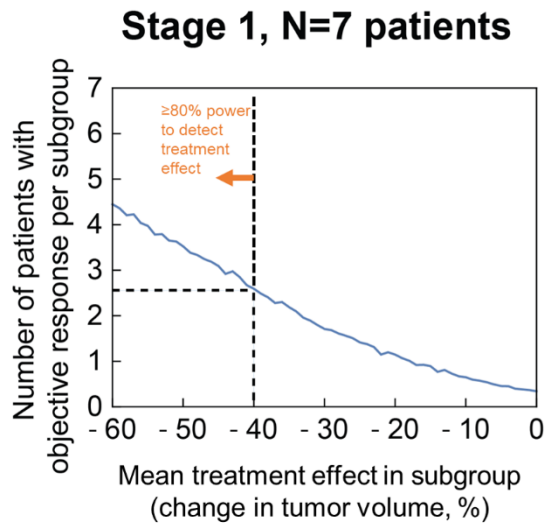
Supplementary Figure S2. Number of responsive patients needed to achieve 80% power using a permutation test. Related to Figure 5. Computational simulation identifies number of patients with objective responses (greater than 30% decrease in tumor volume) in a subgroup, across different average treatment effects. Dotted lines indicate the number of responsive patients needed for 80% power in a permutation test (based on the simulation and tumor volume change values reported in Figure 5, row 2).