

Table S1 AIC and BIC goodness-of-fit statistics for PFS and OS curve distribution estimations

	OS of pembrolizumab 2 mg		PFS of pembrolizumab 2 mg		OS of pembrolizumab 10 mg		PFS of pembrolizumab 10 mg		OS of pembrolizumab long		PFS of pembrolizumab long		OS of docetaxel long	
	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC
	llogis	1753.181	1760.862	1696.041	1703.722	1650.207	1657.9	1754.99	1762.683	5139.961	5149.034	4499.65	4508.723	2504.287
lnorm	1752.948	1760.63	1700.309	1707.99	1647.265	1654.958	1756.052	1763.745	5135.918	5144.991	4500.397	4509.471	2511.068	2518.744
weibull	1772.871	1780.552	1782.791	1790.472	1664.729	1672.422	1812.754	1820.447	5197.835	5206.909	4693.218	4702.291	2559.955	2567.63
exp	1773.398	1777.239	1792.32	1796.16	1666.342	1670.189	1824.407	1828.253	5221.535	5226.07	4856.623	4861.16	2560.446	2564.283
gamma	1774.606	1782.287	1792.228	1799.909	1666.595	1674.288	1821.467	1829.16	5209.989	5219.062	4759.331	4768.405	2562.444	2570.12
gompertz	1754.771	1762.452	1716.258	1723.932	1648.974	1656.666	1769.829	1777.522	5151.048	5160.121	4545.172	4554.245	2530.551	2538.227

AIC, Akaike Information Criterion; BIC, Bayesian information criterion; OS, overall survival; PFS, progression-free survival.

Table S2 Adverse event rates in model

Incidence rate	Incidence rate in pembrolizumab 2 mg/kg	Incidence rate in pembrolizumab 10 mg/kg	Incidence rate in docetaxel	Reference
Severe skin reaction	0.0087	0.0087	0.0058	KEYNOTE-010
Fatigue	0.0116	0.0173	0.0321	KEYNOTE-010
Neutropenia	0	0	0.111	KEYNOTE-010
Diarrhea	0.0058	0	0.0204	KEYNOTE-010
Pneumonitis	0.0203	0.0202	0.0058	KEYNOTE-010

Table S3 Survival distribution estimation and distribution parameter variation in one-way deterministic sensitivity analysis (DSA) and probabilistic sensitivity analysis (PSA)

Survival model	Distribution estimate from Keynote-010	Range for DSA	Parameters for PSA
OS docetaxel (long term)	Log-logis	Shape (1.3946–1.6775) Scale (10.6728–13.5470)	Generate numbers from correlated multivariate gamma distribution
OS pembrolizumab (long term)	Log-norm	Meanlog (2.7943–3.0077) Sdlog (1.3189–1.4876)	Generate numbers from correlated multivariate gamma distribution
PFS pembrolizumab (long term)	Log-ogis	Shape (1.1664–1.3279) Scale (5.5860–6.8824)	Generate numbers from multivariate gamma distribution correlated with OS curve parameters

Table S4 Reconstructed hazard ratio (HR) between pembrolizumab 10 mg/kg and pembrolizumab 2 mg/kg groups and HR variation in one-way deterministic sensitivity analysis (DSA) and probabilistic sensitivity analysis (PSA)

Pembrolizumab 10 vs. 2 mg/kg	Constant	Range for DSA	Parameters for PSA
PFS	0.898	0.7976–1.102	Log-normal (mean =0.9375, sd =1.0859)
OS	0.8512	0.7036–1.03	Log-normal (mean =0.8512, sd =1.1021) correlated with HR for PFS

OS, overall survival; PFS, progression-free survival.