

Supplementary Table S3. Frequencies of mutations found in 341 cancer-related genes in *bona fide* mucinous ovarian cancers from this study and pancreatic ductal carcinomas (ICGC) and mucinous ovarian cancers from Ryland et al. Top significant genes are shown.

Gene Symbol	Mucinous Ovarian Cancer, this study (n=19)		Pancreatic Ductal ICGC (n=177)		p-value
	Cases altered (n)	Cases altered (%)	Cases altered (n)	Cases altered (%)	
TP53	17	89.47	98	55.37	0.005610326
ERBB2	2	10.53	0	0	0.008948195
SETD2	2	10.53	2	1.13	0.04761122
ALOX12B	1	5.26	0	0	0.09693878
BRAF	1	5.26	0	0	0.09693878
CDK12	1	5.26	0	0	0.09693878
ERBB3	1	5.26	0	0	0.09693878
GNAQ	1	5.26	0	0	0.09693878
H3F3C	1	5.26	0	0	0.09693878
IGF1R	1	5.26	0	0	0.09693878
NCOR1	1	5.26	0	0	0.09693878
NKX2-1	1	5.26	0	0	0.09693878
PALB2	1	5.26	0	0	0.09693878
PARK2	1	5.26	0	0	0.09693878
RFWD2	1	5.26	0	0	0.09693878
SHQ1	1	5.26	0	0	0.09693878
TET2	1	5.26	0	0	0.09693878
KRAS	15	78.95	160	90.4	0.1285478
SMAD4	1	5.26	38	21.47	0.1303005
ASXL1	1	5.26	1	0.56	0.1849294

Gene Symbol	Mucinous Ovarian Cancer, this study (n=19)		Mucinous Ovarian Cancer, Ryland et al. (n=12)		p-value
	Cases altered (n)	Cases altered (%)	Cases altered (n)	Cases altered (%)	
RNF43	0	0	4	33.33	0.01573177
BRAF	1	5.26	5	41.67	0.0216928
TP53	17	89.47	6	50	0.03158039
KRAS	15	78.95	5	41.67	0.05636377
BCOR	0	0	2	16.67	0.1419355
CDKN2A	2	10.53	4	33.33	0.1735058
ARID1A	0	0	1	8.33	0.3870968
BTK	0	0	1	8.33	0.3870968
ERBB4	0	0	1	8.33	0.3870968
FAT1	0	0	1	8.33	0.3870968
FBXW7	0	0	1	8.33	0.3870968
GATA3	0	0	1	8.33	0.3870968
MITF	0	0	1	8.33	0.3870968
NOTCH3	0	0	1	8.33	0.3870968
PTPRS	0	0	1	8.33	0.3870968
TET1	0	0	1	8.33	0.3870968