

**S4 Table.** Detected mutations of the 10 epithelial ovarian cancer (EOC) patients**EOC1**

Gene	cHGVS	pHGVS	Exonic function	A	P0	P1	T
<i>ABL1</i>	c.G401A	p.R134H	Nonsynonymous SNV				0.004
<i>CTNNB1</i>	c.G1564A	p.A522T	Nonsynonymous SNV				0.005
<i>ERBB3</i>	c.A3790C	p.N1264H	Nonsynonymous SNV				0.016
<i>FGFR2</i>	c.C200T	p.A67V	Nonsynonymous SNV				0.003
<i>GNAS</i>	c.C285A	p.H95Q	Nonsynonymous SNV				0.007
<i>MAP2K2</i>	c.G328A	p.A110T	Nonsynonymous SNV				0.004
<i>TP53</i>	c.C271G	p.L91V	Nonsynonymous SNV	0.722	0.097		0.714
<i>TP53</i>	c.G338A	p.G113D	Nonsynonymous SNV				0.005

**EOC2**

Gene	cHGVS	pHGVS	Exonic function	A	P0	P1	T
<i>ABL1</i>	c.G3062T	p.R1021L	Nonsynonymous SNV	0.005			
<i>APC</i>	c.G1056T	p.L352F	Nonsynonymous SNV	0.010			
<i>EGFR</i>	c.2533_2534insTTTTTTTTTTTTTT	p.N845fs	Frameshift insertion	0.011			
<i>EGFR</i>	c.2536delC	p.Q846fs	Frameshift deletion	0.018		0.002	
<i>EGFR</i>	c.2538_2549del	p.846_850del	Nonframeshift deletion	0.016			
<i>EGFR</i>	c.C2552G	p.A851G	Nonsynonymous SNV	0.020			
<i>EGFR</i>	c.C2554G	p.P852A	Nonsynonymous SNV	0.020			
<i>EGFR</i>	c.C2555A	p.P852H	Nonsynonymous SNV	0.020			
<i>EGFR</i>	c.C2567T	p.P856L	Nonsynonymous SNV	0.021	0.008	0.013	
<i>EGFR</i>	c.G2558T	p.S853I	Nonsynonymous SNV	0.022	0.006	0.009	
<i>ERBB3</i>	c.G2442T	p.W814C	Nonsynonymous SNV	0.010			
<i>ETV4</i>	c.C280A	p.P94T	Nonsynonymous SNV	0.011			
<i>ETV5</i>	c.C1129A	p.L377I	Nonsynonymous SNV	0.009			
<i>ETV5</i>	c.C806A	p.P269Q	Nonsynonymous SNV	0.009			
<i>FANCA</i>	c.G2766T	p.E922D	Nonsynonymous SNV	0.009			
<i>FGFR2</i>	c.1966_1982del	p.E656fs	Frameshift deletion				0.021
<i>GNAS</i>	c.G146T	p.W49L	Nonsynonymous SNV	0.009			
<i>GNAS</i>	c.G728T	p.R243L	Nonsynonymous SNV	0.009			

<i>JAK3</i>	c.C1066A	p.Q356K	Nonsynonymous SNV	0.010											
<i>MLH1</i>	c.G65T	p.G22V	Nonsynonymous SNV	0.011											
<i>MPL</i>	c.G807T	p.W269C	Nonsynonymous SNV	0.008											
<i>NOTCH1</i>	c.C185A	p.P62Q	Nonsynonymous SNV	0.008											
<i>NOTCH1</i>	c.C2282A	p.P761H	nonsynonymous SNV	0.006											
<i>NOTCH1</i>	c.C2662A	p.H888N	Nonsynonymous SNV	0.007											
<i>NOTCH1</i>	c.C304A	p.L102M	Nonsynonymous SNV	0.006											
<i>NOTCH1</i>	c.C3605A	p.P1202H	Nonsynonymous SNV	0.007											
<i>NOTCH1</i>	c.C500A	p.P167Q	Nonsynonymous SNV	0.006											
<i>NOTCH1</i>	c.C7126A	p.Q2376K	Nonsynonymous SNV	0.006											
<i>NOTCH1</i>	c.G6260T	p.R2087L	Nonsynonymous SNV	0.007											
<i>NTRK1</i>	c.575_589del	p.192_197del	Nonframeshift deletion	0.042	0.166									0.262	
<i>PDGFRA</i>	c.G497T	p.G166V	Nonsynonymous SNV	0.012											
<i>PTPN11</i>	c.C1282T	p.P428S	Nonsynonymous SNV										0.004		
<i>RET</i>	c.C1697A	p.P566H	Nonsynonymous SNV	0.005											
<i>SMARCB1</i>	c.G882T	p.L294F	Nonsynonymous SNV	0.005											
<i>SMARCB1</i>	c.G995T	p.R332L	Nonsynonymous SNV	0.008											
<i>SRC</i>	c.G1388T	p.R463L	Nonsynonymous SNV	0.009											
<i>TP53</i>	c.C628T	p.R210X	Stop-gain	0.075	0.223									0.687	

### EOC3

Gene	cHGVS	pHGVS	Exonic function	A	P0	P1	P2	P3	P4	T	OV8_ Re_C_ A	OV8_ Re_C_ P0	OV8_ Re_C_ P1	OV8_ Re_C_ T
<i>ABL1</i>	c.G401A	p.R134H	Nonsynonymous SNV			0.003								
<i>ABL1</i>	c.A2009G	p.N670S	Nonsynonymous SNV										0.189	
<i>ALK</i>	c.C2986A	p.H996N	Nonsynonymous SNV				0.005							
<i>APC</i>	c.G7915A	p.V2639I	Nonsynonymous SNV										0.176	

<i>ATM</i>	c.C2933G	p.S978C	Nonsynonymous SNV	0.020	0.030		
<i>EGFR</i>	c.2536delC	p.Q846fs	frameshift deletion	0.004			
<i>EGFR</i>	c.C1195T	p.L399F	Nonsynonymous SNV	0.006			
<i>ERBB2</i>	c.2492_2493del	p.K831fs	Frameshift deletion		0.026		
<i>ERBB3</i>	c.A3790C	p.N1264H	Nonsynonymous SNV	0.013			
<i>ETV5</i>	c.C488T	p.A163V	Nonsynonymous SNV	0.013			
<i>FGFR1</i>	c.129_131del	p.43_44del	Nonframeshift deletion	0.008	0.013		0.009
<i>FGFR1</i>	c.1920_1922del	p.640_641del	Nonframeshift deletion		0.027		
<i>FGFR1</i>	c.C160T	p.R54C	Nonsynonymous SNV			0.008	
<i>FGFR2</i>	c.1966_1982del	p.E656fs	Frameshift deletion	0.012	0.022		
<i>FGFR4</i>	c.G1210C	p.A404P	Nonsynonymous SNV			0.013	0.007
<i>FGFR4</i>	c.1196_1197insCCGC	p.H399fs	Frameshift insertion				0.011
<i>FGFR4</i>	c.G1202C	p.R401P	Nonsynonymous SNV				0.010
<i>HRAS</i>	c.C202T	p.R68W	Nonsynonymous SNV	0.005			
<i>PIK3R1</i>	c.967dupA	p.Y322fs	Frameshift insertion				0.435
<i>RBI</i>	c.A739G	p.N247D	Nonsynonymous SNV				0.168
<i>ROS1</i>	c.G4813C	p.E1605Q	Nonsynonymous SNV				0.177

<i>SMARC B1</i>	c.C676T	p.P226S	Nonsynonymous SNV			0.003						
<i>TP53</i>	c.337_340del	p.G113fs	Frameshift deletion	0.084	0.359	0.170		0.774	0.495	0.013	0.018	0.834

#### EOC4

Gene	cHGVS	pHGVS	Exonic function	A	P0	P1	P2	P3	P4	P5	T
<i>ALK</i>	c.C4409T	p.A1470V	Nonsynonymous SNV	0.005							
<i>EGFR</i>	c.C2237T	p.A746V	Nonsynonymous SNV	0.004							
<i>ETV1</i>	c.G176C	p.C59S	Nonsynonymous SNV	0.04							
<i>FGFR1</i>	c.129_131del	p.43_44del	Nonframeshift deletion		0.004						
<i>FGFR2</i>	c.1966_1982del	p.E656fs	Frameshift deletion		0.008						
<i>MYCN</i>	c.G92C	p.R31P	Nonsynonymous SNV							0.015	
<i>MYCN</i>	c.100_101del	p.G34fs	Frameshift deletion							0.011	
<i>NOTCH1</i>	c.C6767T	p.A2256V	Nonsynonymous SNV		0.004						
<i>NOTCH1</i>	c.4732_4734del	p.1578_1578del	Nonframeshift deletion		0.006						
<i>PPARG</i>	c.535_536insC CATCAGGTT TGGGCGGAT GCCACAGGC CGAGAAGGA GAAGCT	p.A179fs	Frameshift insertion					0.061			
<i>TP53</i>	c.C80T	p.A27V	Nonsynonymous SNV	0.67	0.018				0.014	0.015	0.729
<i>TP53</i>	c.G338A	p.G113D	Nonsynonymous SNV				0.007				

#### EOC5

Gene	cHGVS	pHGVS	Exonic function	A	P0	P1	P2	T
<i>CTNNB1</i>	c.G1585T	p.E529X	Stop-gain		0.005			
<i>CTNNB1</i>	c.G1564A	p.A522T	Nonsynonymous SNV		0.006			
<i>ETV4</i>	c.C329A	p.S110X	Stop-gain		0.005			

<i>EZH2</i>	c.G1018T	p.D340Y	Nonsynonymous SNV	0.005			
<i>FANCA</i>	c.C1556T	p.A519V	Nonsynonymous SNV			0.006	
<i>FGFR4</i>	c.G1202C	p.R401P	Nonsynonymous SNV	0.007			
<i>NOTCH1</i>	c.G6815A	p.R2272H	Nonsynonymous SNV	0.034			0.307
<i>NOTCH1</i>	c.G5506T	p.D1836Y	Nonsynonymous SNV	0.004			
<i>NOTCH1</i>	c.G1054T	p.D352Y	Nonsynonymous SNV	0.007			
<i>NTRK1</i>	c.C2065T	p.P689S	Nonsynonymous SNV	0.004			
<i>RUNX1</i>	c.T1175G	p.V392G	Nonsynonymous SNV	0.059			
<i>SMO</i>	c.G409T	p.D137Y	Nonsynonymous SNV	0.005			
<i>SRC</i>	c.G577T	p.D193Y	Nonsynonymous SNV	0.005			
<i>SRC</i>	c.G1486T	p.D496Y	Nonsynonymous SNV	0.004			
<i>TP53</i>	c.A442T	p.R148X	Stop-gain	0.340			0.626

#### EOC6

Gene	cHGVS	pHGVS	Exonic function	A	P0	P1	T
<i>BRCA1</i>	c.C3307T	p.P1103S	Nonsynonymous SNV			0.010	
<i>CDH1</i>	c.G2311A	p.V771M	Nonsynonymous SNV			0.022	
<i>ERBB4</i>	c.G1624A	p.E542K	Nonsynonymous SNV			0.020	
<i>FGFR2</i>	c.1966_1982del	p.E656fs	Frameshift deletion				0.023
<i>TP53</i>	c.G418T	p.V140L	Nonsynonymous SNV	0.560			0.799

#### EOC7

Gene	cHGVS	pHGVS	Exonic function	A	P0	P1	P2	P3	T
<i>ABL1</i>	c.G2242T	p.D748Y	Nonsynonymous SNV	0.010					
<i>APC</i>	c.C938A	p.S313X	Stop-gain	0.009					
<i>BRCA1</i>	c.G3664T	p.D1222Y	Nonsynonymous SNV	0.012					
<i>CCND1</i>	c.G73T	p.D25Y	Nonsynonymous SNV	0.014					
<i>EGFR</i>	c.G900T	p.M300I	Nonsynonymous SNV	0.009					

<i>ERBB2</i>	c.G700T	p.D234Y	Nonsynonymous SNV	0.007	
<i>ERBB3</i>	c.G484T	p.D162Y	Nonsynonymous SNV	0.012	
<i>ERBB3</i>	c.C649A	p.H217N	Nonsynonymous SNV	0.007	
<i>FBXW7</i>	c.C923A	p.S308X	Stop-gain	0.010	
<i>FGFR1</i>	c.G1344T	p.M448I	Nonsynonymous SNV	0.006	
<i>FGFR1</i>	c.G840T	p.M280I	Nonsynonymous SNV	0.012	
<i>FGFR2</i>	c.G2116T	p.D706Y	Nonsynonymous SNV	0.007	
<i>FGFR2</i>	c.G1458T	p.M486I	Nonsynonymous SNV	0.009	
<i>FGFR2</i>	c.1966_1982del	p.E656fs	frameshift deletion		0.015
<i>FGFR4</i>	c.G1867T	p.D623Y	Nonsynonymous SNV	0.012	
<i>IDH2</i>	c.G124T	p.D42Y	Nonsynonymous SNV	0.014	
<i>KDR</i>	c.G1875T	p.L625F	Nonsynonymous SNV	0.007	
<i>KIT</i>	c.C2075A	p.S692X	Stop-gain	0.011	
<i>MLH1</i>	c.G1253T	p.R418L	Nonsynonymous SNV	0.008	
<i>MPL</i>	c.C1838A	p.S613X	Stop-gain	0.009	
<i>MTOR</i>	c.G6634T	p.D2212Y	Nonsynonymous SNV	0.013	
<i>MTOR</i>	c.G5347T	p.D1783Y	Nonsynonymous SNV	0.014	
<i>NOTCH1</i>	c.G6076T	p.D2026Y	Nonsynonymous SNV	0.010	
<i>NOTCH1</i>	c.G4597T	p.D1533Y	Nonsynonymous SNV	0.020	
<i>NRAS</i>	c.G3T	p.M1I	Nonsynonymous SNV	0.011	
<i>NTRK2</i>	c.G1515T	p.M505I	Nonsynonymous SNV	0.013	
<i>NTRK2</i>	c.G1831T	p.D611Y	Nonsynonymous SNV	0.005	
<i>PIK3CA</i>	c.C1345T	p.P449S	Nonsynonymous SNV	0.139	0.212
<i>PIK3CA</i>	c.C2616A	p.F872L	Nonsynonymous SNV	0.014	
<i>PIK3CA</i>	c.A3140G	p.H1047R	Nonsynonymous SNV	0.172	
<i>PPARG</i>	c.G604T	p.D202Y	Nonsynonymous SNV	0.013	
<i>PTPN11</i>	c.G1303T	p.D435Y	Nonsynonymous SNV	0.007	
<i>RET</i>	c.C1745A	p.P582H	Nonsynonymous SNV	0.005	

<i>ROS1</i>	c.C5734A	p.L1912M	Nonsynonymous SNV	0.009				
<i>SMAD4</i>	c.C1330A	p.H444N	Nonsynonymous SNV	0.011				
<i>TP53</i>	c.G338A	p.G113D	Nonsynonymous SNV		0.006		0.009	

### EOC8

Gene	cHGVS	pHGVS	Exonic function	A	P0	P1	P2	T
<i>ABL1</i>	c.G2117T	p.G706V	Nonsynonymous SNV			0.035		
<i>AR</i>	c.170_171insGCAGCAGCAGCAGCA	p.L57delinsLQQQQQ	Nonframeshift insertion	0.500				
<i>ATM</i>	c.C2933G	p.S978C	Nonsynonymous SNV					0.022
<i>BRCA1</i>	c.782delG	p.S261fs	Frameshift deletion	0.302				0.782
<i>ETV4</i>	c.G490C	p.E164Q	Nonsynonymous SNV				0.014	
<i>FANCA</i>	c.C3031T	p.R1011C	Nonsynonymous SNV			0.042		
<i>FGFR2</i>	c.1966_1982del	p.E656fs	Frameshift deletion	0.028				0.018
<i>SMO</i>	c.C536T	p.T179M	Nonsynonymous SNV			0.036		
<i>TP53</i>	c.A263G	p.Y88C	Nonsynonymous SNV	0.223				0.770

### EOC9

Gene	cHGVS	pHGVS	Exonic function	A	P0	P1	T
<i>ATM</i>	c.6352_6361del	p.E2118fs	Frameshift deletion		0.034		
<i>EGFR</i>	c.A1975C	p.I659L	Nonsynonymous SNV	0.173	0.360	0.473	
<i>ERBB3</i>	c.A3787C	p.M1263L	Nonsynonymous SNV	0.015			
<i>ERBB3</i>	c.A3790C	p.N1264H	Nonsynonymous SNV	0.015			
<i>ERBB4</i>	c.C3310T	p.Q1104X	Stop-gain				0.142
<i>FGFR1</i>	c.G344T	p.G115V	Nonsynonymous SNV	0.006			
<i>FGFR1</i>	c.129_131del	p.43_44del	Nonframeshift deletion		0.006	0.010	

<i>FGFR2</i>	c.1966_1982del	p.E656fs	Frameshift deletion				0.069
<i>GNAS</i>	c.C205A	p.H69N	Nonsynonymous SNV	0.472	0.513	0.485	
<i>GNAS</i>	c.A1156C	p.T386P	Nonsynonymous SNV	0.011			
<i>GNAS</i>	c.C205A	p.H69N	Nonsynonymous SNV				0.590
<i>MYC</i>	c.477_509del	p.159_170del	Nonframeshift deletion	0.097	0.059		0.183
<i>MYCN</i>	c.100_101del	p.G34fs	Frameshift deletion	0.016	0.011		
<i>MYCN</i>	c.G92C	p.R31P	Nonsynonymous SNV		0.014		
<i>MYCN</i>	c.101_102insCCCCCCCCCCCC CCCCCCCCCCCC	p.G34delinsGPPPPPPPP	Nonframeshift insertion		0.009		
<i>PIK3CA</i>	c.T857C	p.M286T	Nonsynonymous SNV	0.107	0.090		0.283
<i>WT1</i>	c.C1421T	p.A474V	Nonsynonymous SNV			0.004	

### EOC10

<b>Gene</b>	<b>cHGVS</b>	<b>pHGVS</b>	<b>Exonic function</b>	<b>A</b>	<b>P0</b>	<b>P1</b>	<b>T</b>
<i>EGFR</i>	c.A1975C	p.I659L	Nonsynonymous SNV	0.173			
<i>EGFR</i>	c.2533_2534insTTTTTTTTTTTT	p.N845fs	Frameshift insertion			0.001375	
<i>EGFR</i>	c.2536delC	p.Q846fs	Frameshift deletion			0.004695	
<i>EGFR</i>	c.2538_2549del	p.846_850del	Nonframeshift deletion			0.003033	
<i>EGFR</i>	c.C2552G	p.A851G	Nonsynonymous SNV			0.006816	
<i>EGFR</i>	c.C2554G	p.P852A	Nonsynonymous SNV			0.006759	
<i>EGFR</i>	c.C2555A	p.P852H	Nonsynonymous SNV			0.007531	
<i>EGFR</i>	c.G2558T	p.S853I	Nonsynonymous SNV			0.013	
<i>EGFR</i>	c.C2567T	p.P856L	Nonsynonymous SNV			0.017	
<i>ERBB3</i>	c.A3787C	p.M1263L	Nonsynonymous SNV	0.015			
<i>ERBB3</i>	c.A3790C	p.N1264H	Nonsynonymous SNV	0.015			
<i>ERBB3</i>	c.C3923T	p.A1308V	Nonsynonymous SNV			0.003417	
<i>ETV5</i>	c.C575T	p.A192V	Nonsynonymous SNV			0.003297	
<i>FGFR1</i>	c.G344T	p.G115V	Nonsynonymous SNV	0.005594			
<i>FGFR2</i>	c.1966_1982del	p.E656fs	Frameshift deletion			0.011	



<i>FGFR4</i>	c.C266T	p.A89V	Nonsynonymous SNV		0.002399	
<i>GNAS</i>	c.C205A	p.H69N	Nonsynonymous SNV	0.472		
<i>GNAS</i>	c.A1156C	p.T386P	Nonsynonymous SNV	0.011		
<i>GNAS</i>	c.G250A	p.A84T	Nonsynonymous SNV		0.00259	
<i>MLH1</i>	c.C314T	p.A105V	Nonsynonymous SNV		0.003779	
<i>MTOR</i>	c.G3355A	p.V1119I	Nonsynonymous SNV	0.573		
<i>MYC</i>	c.477_509del	p.159_170del	Nonframeshift deletion	0.097		
<i>MYCN</i>	c.100_101del	p.G34fs	frameshift deletion	0.016		
<i>PIK3CA</i>	c.T857C	p.M286T	Nonsynonymous SNV	0.107		
<i>SMARCB1</i>	c.G1048A	p.A350T	Nonsynonymous SNV			0.267
<i>TP53</i>	c.G338A	p.G113D	Nonsynonymous SNV		0.004468	
<i>TP53</i>	c.G250T	p.V84L	Nonsynonymous SNV			0.299

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