

**Table S1. Tumor purity of AC samples in the ORIEN and YCU cohorts estimated using the ESTIMATE package.**

<b>ORIEN (n = 6)</b>		<b>YCU (n = 6)</b>	
sample	tumor purity	sample	tumor purity
B1	0.678	B1	0.891
B2	0.679	B2	0.717
B3	0.710	B3	0.909
B4	0.744	B4	0.913
S1	0.736	S1	0.881
S2	0.647	S2	0.937
S2	0.647	S2	0.937

B1–B4 indicate breast AC samples, whereas S1–S2 indicate cutaneous AC samples.