



**S8 Fig.** Stacked bar plot indicating best response after first-line chemotherapy according to *STK11* mutation in IHC (A). Kaplan-Meier plot for progression-free survival according to specific gene mutation for *STK11* in IHC (B), *KRAS* in EHC (C), *ERBB2* amplification in EHC (D), *ERBB2* in EHC (E), *PBRM1* in EHC (F), *SMAD4* in IHC (G), *ATM* in IHC (H), *APC* in IHC (I), *STK11* in IHC (J), *MRE11* in IHC (K), and *EGFR* amplification in IHC (L). p-value was calculated using the log-rank test. CCA, cholangiocarcinoma; IHC, immunohistochemistry; PD, progressive disease; PFS, progression-free survival; PR, partial response; SD, stable disease.