Supplementary Materials: Figure S1, Figure S2 and Figure S3.

Figure S1. The spectrum of mutations of DDR genes in DDR\textsuperscript{mut} primary liver cancers (N=92 patients). Results include all alterations of 31 sequenced DDR genes.
Figure S2. Associations of DDR mutations with tumor mutation burden (TMB) in primary liver cancer (all TMB values have been transformed by log2).

(A) Comparison of TMB levels in subgroups with or without DDR mutations for each different pathological subtype (N = 357 patients). (B) Comparison of TMB among patients stratified by DDR mutation status in TCGA-LICH cohort (N = 373 patients).
Figure S3. The landscape of cancer-related mutations in DDR$^{\text{wt}}$ (wild type) primary liver cancers (N=265 patients). Oncoprint of select gene alterations, pathways and mutational patterns for DDR$^{\text{wt}}$ primary liver cancers, separated by three different pathological types. The most altered genes include TP53, TERT, CTNNB1, CDKN2A and ARID1A.