



Figure 1. Gene profiling of cHCC-CCA identifies two distinct immune subtypes.

A) Hierarchical unsupervised clustering of 96 cHCC-CCA samples reveals two main subgroups characterised by different expression levels of immune-related genes (Immune High-IH, Immune Low-IL). The IH subtype is associated with cirrhosis ($p=0.01$), liver transplantation ($p=0.05$) and lack of microvascular invasion ($p=0.01$) (Fisher's exact test) as well as the amount of different histological contingents ($p=0.005$) (MANOVA). We did not observe any association with other clinical, biological and pathological features. **B)** Volcano plot showing differentially expressed genes between IH and IL cHCC-CCA subtypes. Fold changes and p value of the full list of genes investigated are presented on Supplementary Table 1.

HCC: Hepatocellular carcinoma, CCA: Cholangiocarcinoma, ns: no significance