**Supplementary Material**

**Tumor mutation burden associated LINC00638/miR-4732-3p/ULBP1 axis promotes immune escape via PD-L1 in hepatocellular carcinoma**

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**Supplementary Material includes:**

Supplementary Methods

Supplementary Figure S1 to Figure S6

Supplementary Table S1 to Table S2

**Supplementary Methods**

***Hematoxylin and eosin (HE) staining***

HE staining was performed according to the instructions of the staining kit (C0105; Beyotime Biotech, ).

**Supplementary Figures and Figure Legends**



**Figure S1. The correlation between OS and hub lncRNAs in HCC.**



**Figure S2. Validation of the eight-lncRNAs PS model in E-TABM-36 cohort.** A. K-M curves result. B. The AUC of the PS for the prediction of 1, 3, 5-year survival rate of HCC. C&D. Risk survival status plot. E. The heatmap of the hub lncRNAs in validation cohort. PS, prognostic score; K-M, Kaplan-Meier; AUC, area under the curve; HCC, hepatocellular carcinoma.



**Figure S3. NGS result of 20 patients with HCC.** MSI-H, microsatellite instability-high; MSS, microsatellite stability; NGS, second generation sequencing.

**D:\博士期间科研项目\LncRNA与肝癌\Fig.S4.tifFigure S4. The ceRNA network visualized by Cytoscape.** Tetragonum, triangle and circular nodes denoted lncRNA, miRNA, and mRNA, respectively.



**Figure S5. PD-L1 expression in HCC. A.** The percentage of PD-L1+ cells in tumor tissues of HCC. **B.** The percentage of PD-L1+ cells in peritumor tissues of HCC. HCC, hepatocellular carcinoma.



**Figure S6. Co-localization analysis of ULBP1 and PD-L1 in HCC cell lines.** ULBP1 and PD-L1 was co-expressed in MHCC97H and PLC/PRF/5 cells. HCC, hepatocellular carcinoma.

**图示

描述已自动生成**

**Figure S7. Co-immunoprecipitation (Co-IP) of ULBP1 and PD-L1 in HCC cell lines.** The relationship between ULBP1 and PD-L1 was validated in MHCC97H (A) and PLC/PRF/5 cells (B). HCC, hepatocellular carcinoma, IgG was used as control.