

LDHAL6B is a novel prognostic marker and promotes disease progression in multiple myeloma

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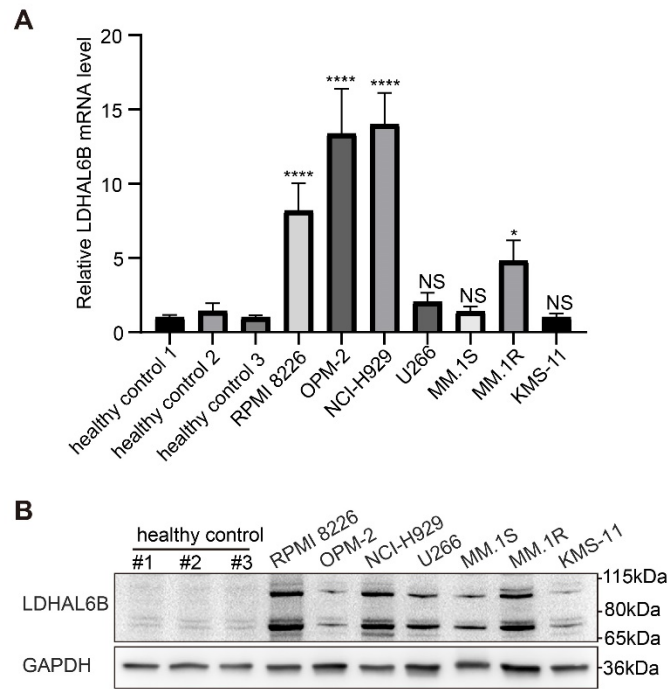
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Supplementary Figures

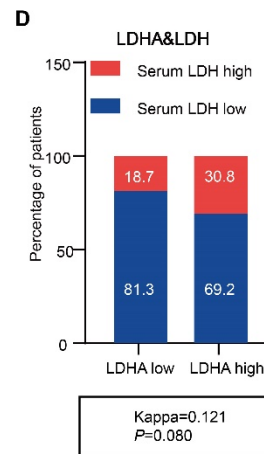
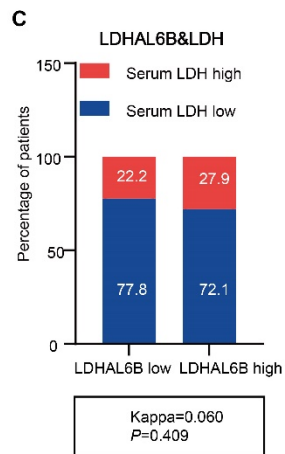
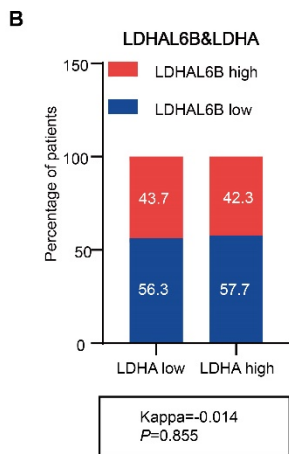
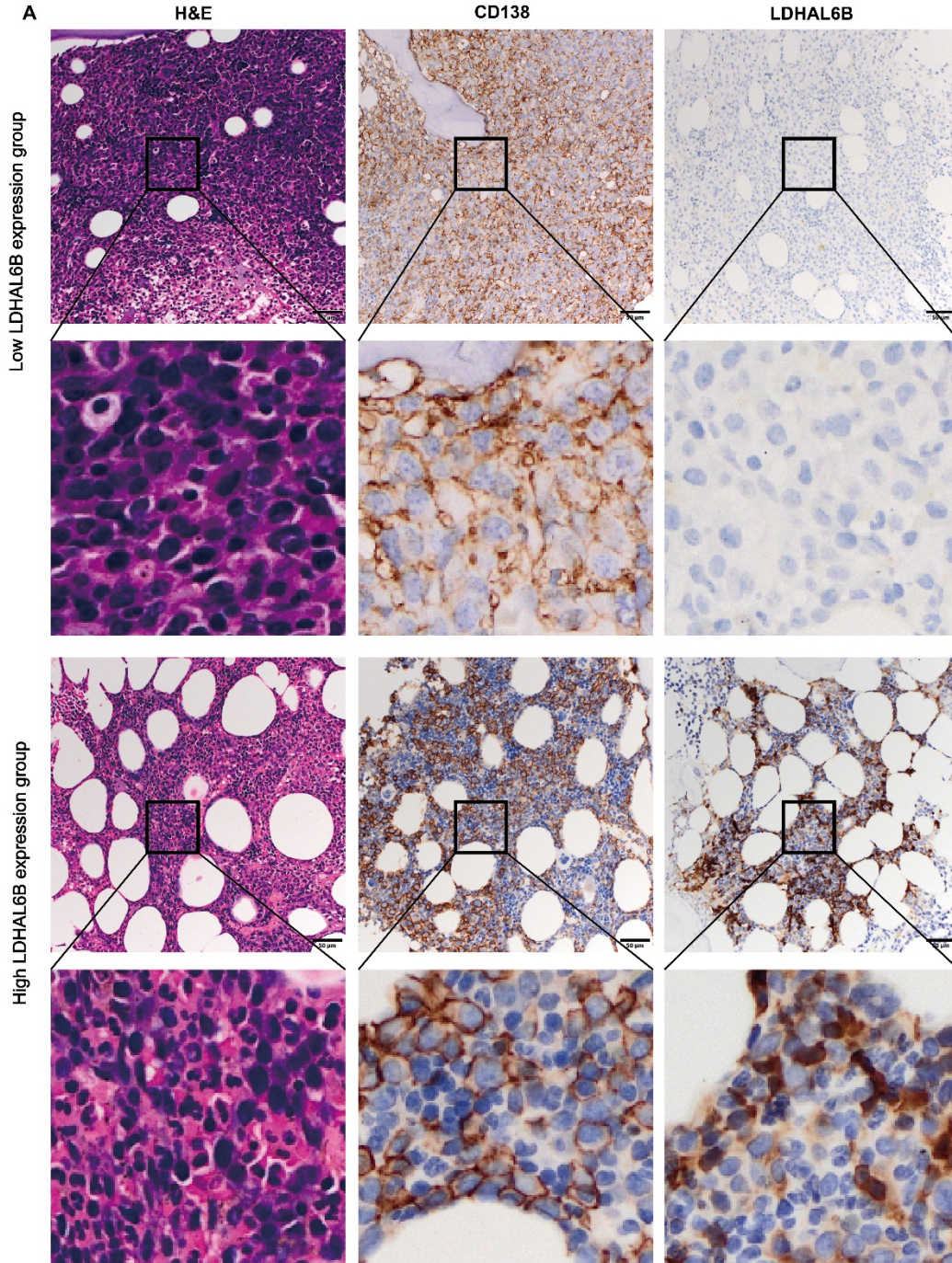


Supplementary Figure 1. LDHAL6B is upregulated in MM cell lines.

(A) The mRNA expression levels of LDHAL6B in multiple myeloma (MM) cell lines and normal plasma cells were quantified using reverse transcription quantitative polymerase chain reaction (RT-qPCR). (B) The protein expression levels of LDHAL6B in MM cell lines and normal plasma cells was assessed using Western blot (WB) analysis. Healthy control, normal plasma cell.

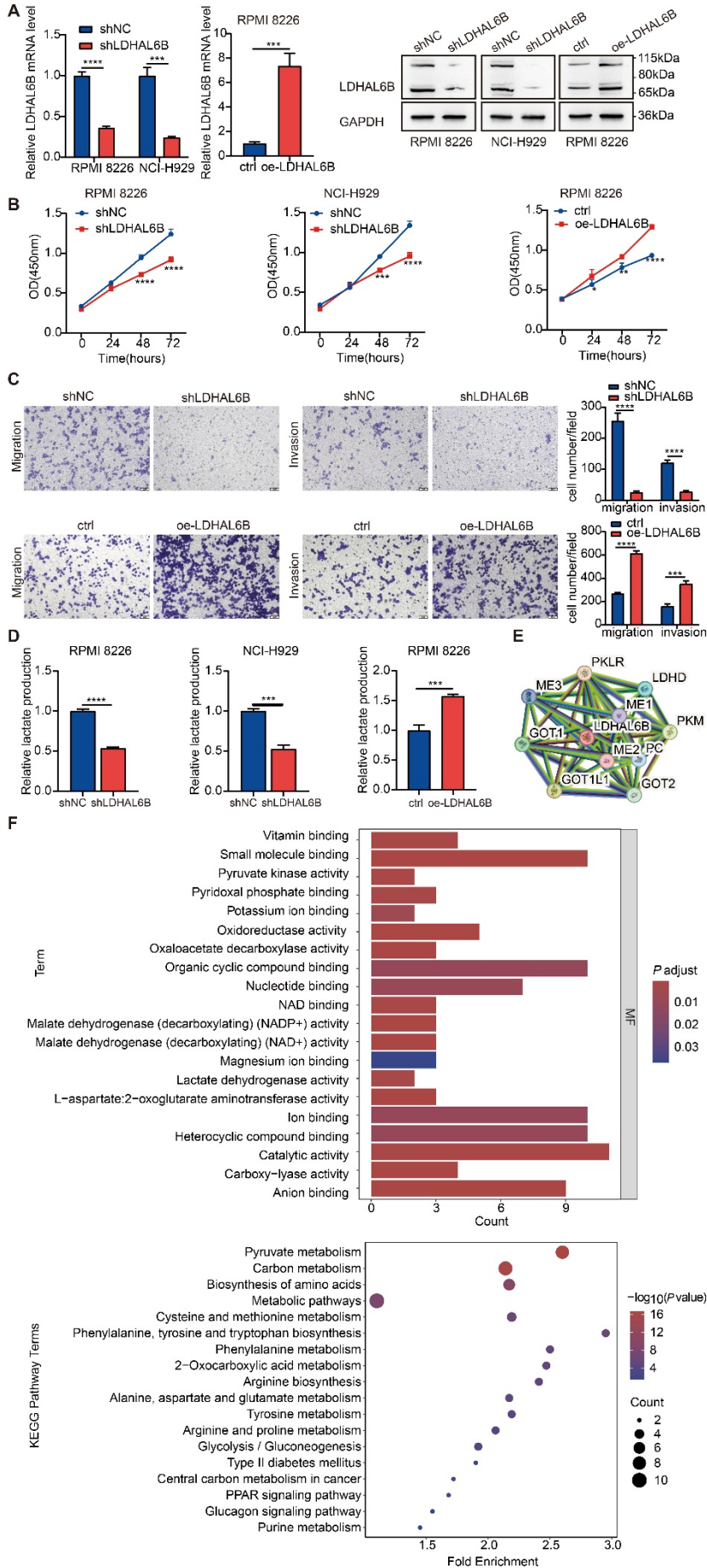
The data are presented as the mean \pm standard deviation (SD) from three independent experiments.

Statistical significance is indicated as * $P < 0.05$, **** $P < 0.0001$, and NS: not significant.



Supplementary Figure 2. Consistency analysis of LDHAL6B expression, LDHA expression, and serum LDH levels.

(A) The protein expression of LDHAL6B in bone marrow biopsy specimens obtained from patients with multiple myeloma (MM) was assessed using immunohistochemistry. Representative cases demonstrating an absence of LDHAL6B expression (upper panel) and stable LDHAL6B expression (lower panel) were indicated by hematoxylin and eosin (H&E) staining, CD138 immunostaining, and LDHAL6B immunostaining. Scale bars represent 50 μm . (B) The percentage of patients exhibiting varying levels of LDHAL6B and LDHA expression is presented. (C) The percentage of patients with differing levels of LDHAL6B and LDH expression is shown. (D) The percentage of patients displaying different levels of LDHA and LDH expression is illustrated. The Kappa test was employed to evaluate the consistency among LDHAL6B expression, LDHA expression, and serum LDH levels in patients. LDH, lactate dehydrogenase.



Supplementary Figure 3. LDHAL6B promotes proliferation, migration, and invasion of MM cells.

(A) The mRNA and protein levels of LDHAL6B in RPMI 8226 and NCI-H929 cells, following LDHAL6B knockdown or overexpression, were measured using reverse transcription quantitative polymerase chain reaction (RT-qPCR) and Western blot (WB) analysis. (B) The effects of LDHAL6B knockdown or overexpression on the proliferation of RPMI 8226 and NCI-H929 cells were assessed using Cell Counting Kit-8 assays. (C) The migratory and invasive capabilities of RPMI 8226 cells with LDHAL6B knockdown or overexpression were evaluated through transwell migration and invasion assays (scale bars = 50 μ m) (left panel), along with the quantification results for cell migration and invasion (right panel). (D) Relative lactate production in RPMI 8226 and NCI-H929 cells following LDHAL6B knockdown or overexpression was measured. (E) The protein-protein interaction network of LDHAL6B was obtained from the STRING online database. (F) Gene Ontology (GO) (upper panel) and Kyoto Encyclopedia of Genes and Genomes (KEGG) (lower panel) analyses were conducted on proteins interacting with LDHAL6B. sh, knockdown; oe, overexpression.

The data are presented as the mean \pm standard deviation (SD) from three independent experiments.

Statistical significance is indicated as follows: * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$, **** $P < 0.0001$.