



**Supplementary Figure 3.** Interactive target verification. (A) Area under the curve values for ROC curves showed substantial relevance between all five interactive targets and the progression of MASLD. (B) The binding affinity between ursolic acid and the remaining four targets. The results revealed that ursolic acid and SPP1 exhibited high-affinity interaction, with the equilibrium dissociation constant of 7.329E-6, whereas no binding could be detectable between PRM2, THOP1, AKR1B10, and ursolic acid. (C) ELISA assay was used to evaluate the SPP1 expression within the ECM. During this process, liver tissues were dissociated and filtered to exclude the interference from intracellular protein components. ROC, receiver operating characteristic; MASLD, metabolic dysfunction-associated steatotic liver disease; SPP1, secreted phosphoprotein 1; HFD, high-fat diets; NCD, normal control diets; KD, knockdown.