3150 consecutive chronic HBV carriers who underwent liver biopsy at three affiliated hospitals of Fujian Medical University, Xiamen Hospital of Traditional Chinese Medicine, and the Affiliated Hospital of Putian University

External validation group: 331 consecutive chronic HBV carriers who underwent liver biopsy at Huashan Hospital Affiliated to Fudan University

2092 patients having HCC, HAV, HCV, HDV, HEV, drug-induced liver injury, autoimmune liver disease, or fatty liver were excluded

701 cases with ALT >40 U/L were excluded

581 chronic HBV carriers

External validation group:

106 chronic HBV carriers

581 chronic HBV carriers I (ALT ≤40 U/L)

448 chronic HBV carriers II [ALT ≤35 U/L (male) and ALT ≤25 U/L (female)]

323 chronic HBV carriers III [ALT ≤30 U/L (male) and ALT ≤19 U/L (female)]

167 chronic HBV carriers IV (ALT is 20 U/L)

According to the different criteria of ULN for ALT

Radom assignment at 1:1 ratio

290 Training group

291 Internal validation group

**Supplementary Fig. 1. Flow diagram of the study population.** ALT, alanine aminotransferase; HAV, hepatitis A virus; HBV, hepatitis B virus; HCV, hepatitis C virus; HDV, hepatitis D virus; HEV; hepatitis E virus, ULN, upper limit of normal.