Title: The *SMYD3* VNTR 3/3 polymorphism confers an increased risk and poor prognosis of hepatocellular carcinoma in a Chinese population

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Running title: *SMYD3* gene polymorphism and HCC

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ABSTRACT

Objective: Hepatocellular carcinoma (HCC) is one of the most lethal human malignancies in China, and the genetic link of hepatocarcinogenesis remains to be defined. Thus, we explored the role of SET and myeloid translocation protein 8, Nervy, and DEAF1 (MYND) domain containing protein 3 (*SMYD3*) gene polymorphism on risk and prognosis of HCC.

Methods: A total of 236 patients with HCC who received treatment in Affiliated Hospital of Jining Medical University for the first time and 230 healthy individuals were enrolled in the study. After DNA extraction for all the subjects, polymerase chain reaction (PCR) was used to amplify and sequence variable numbers of tandem repeat (VNTR) loci of *SMYD3* gene. *SMYD3* gene was genotyped and its frequency distribution was calculated. Age, education level, income, smoking and drinking history, HCC family history, tumor node metastasis (TNM) staging, maximum tumor