

Abstract

Hepatoprotective Effect of the N-Alkylated Isobornylamine against CCl₄-Induced Chronic Liver Damage in Mice [†]

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Abstract: Nonalcoholic fatty liver disease (NAFLD) is a chronic liver disease caused by impaired lipid and carbohydrate metabolism, and is characterized by fatty degeneration, necrosis, inflammation, and fibrosis of hepatocytes. There are currently no approved drugs for the treatment of NAFLD, so their search remains an urgent task for present pharmacology. Previously, N-alkylated isobornylamine (compound **1**), a GPR40 agonist, at a dose of 30 mg/kg was shown to resolve fatty liver degeneration in C57Bl/6^{Ay} mice and improve glucose tolerance. As a result, we continued to study the hepatoprotective effect of compound **1** on CCl₄-induced chronic hepatotoxicity model in CD-1 mice. Compound **1** was administered *per os* at doses of 60, 90, 120 and 150 mg/kg daily for 3 weeks, as well as the reference drug silymarin at a dose of 100 mg/kg. At the end of the experiment, a biochemical blood assay was carried out, which showed that compound **1** dose-dependently reduces ALT, AST and ALKP. According to the results of a histological and morphometry liver examination, compound **1** was found to reduce the severity of degenerative-necrotic changes in hepatocytes. More pronounced improvements in doses of 120 and 150 mg/kg were noted. Thus, isobornylamine derivative exhibits a hepatoprotective effect not only in metabolic liver injury, but also in CCl₄-induced chronic liver damage.

Keywords: CCl₄-induced liver damage; hepatoprotection drug; type 2 diabetes; nonalcoholic fatty liver disease; GPR40; FFAR1



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