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Synthesis of Novel Glycyrrhizic and Glycyrrhetic Acid Derivatives with Positive Antiviral Activity

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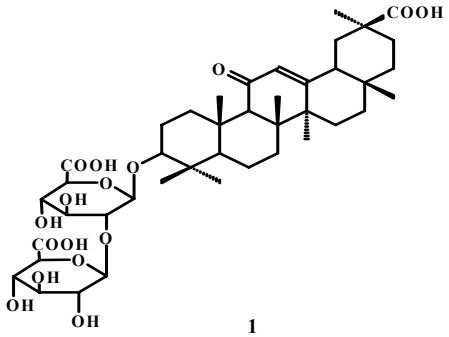
Triterpenes and triterpene glycosides are natural compounds widely distributed in different plants. Combinatorial chemistry of high triterpenoids is a perspective root to desigh novel bioactive compounds for medicine.

To continue of our studies [1] in the field of transformations of Glycyrrhizic Acid (GL) (1) and its aglycon, Glycyrrhetic Acid (GLA) to be the main components of Glycyrrhiza Radix, we synthesised novel derivatives for the structure-antiviral activity studies. GL and GLA derivatives containing amino acids, hydrazides, heterocycles, D-glucosamine were produced by using simple protocols. Glycosylation of 18β-GLA and its related compounds was studied by using iodine containing activators. 3-O-α- and –β-glycosides of 18β- and 18α-GLA, 11-desoxo- and 18,19-dehydro-derivatives to be modified GL analogues were produced. Chemical modifications of 11-desoxo-GL analogues were carried out by the introduction of bioactive esters, amides and aminoacids.



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Transformations of ring A and oxidation of 11-desoxo-GLA in different conditions was studied. Among GL and GLA derivatives produced potent inhibitors of HIV-1 and SARS coV were found.

1. Baltina L.A. Chemical modification of Glycyrrhizic acid as a route to new bioactive compounds for medicine. Current Med Chem 2003; 10: 155-171.

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