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Acylation 5,7,3',4'-tetrabenzyl catechin to heterocycles acid chlorides

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Abstract

Flavonoids constitute a large class of complex heterocyclic compounds, which are widespread in the plant world. In recent years, they are widely used in the treatment of many diseases of the blood vessels, liver, hypertension, measles, scarlet fever, typhus, radiation sickness and so on. Currently, actively developed flavonoid chemistry, including chemical modification of the most famous and popular, such as quercetin, krizin, naringinin, kaempferol, galangin, izoramnetin, rutin, catechin and Dihydroquercetin. Previously, we have carried out studies of natural flavonoids and catechins Dihydroquercetin. We studied the reaction fosforyllation, aminometyllation, alkylation and others. Among the compounds found were obtained modified derivatives possessing high biological activity and diverse. One of the most common methods of modification of drugs is the reaction of acylation.

The aim of this study was to obtain the 5,7,3',4'-tetrabenzyl catechin and its acylation chlorides biologically important heterocyclic carboxylic acids. We have developed a new synthetic approach to obtaining tetrabenzylated ether of catechol to simplify the methodology of its receipt. It was then held acylation 5,7,3',4'-tetrabenzylcatechin to heterocyclic carboxylic acid chlorides by free hydroxy at the 3 pozition of flavonoid matrix. The reaction is carried out in the presence of pyridine, dioxane, performing the role of an acceptor of hydrogen chloride. Thus synthesized were mixed derivatives containing both alkyl and acyl moieties. More valuable products, presumably are partially acylated flavonoids, which can be synthesized followed by removal of the benzyl groups by catalytic hydrogenation. Therefore, tetrabenzyl catechol derivatives may be regarded as convenient intermediates for combining substances antioxidant flavonoid matrix with high biological activity characteristic of their esters.

The structure of the compounds was confirmed by NMR spectroscopy on nuclei ^{1}H and ^{13}C and elemental analysis. When NMR analysis showed that acylation was maintained during flavonoid matrix structure and catechin observed disappearance third hydroxyl group proton.

In the future we expected to the tread removal of the benzyl protection.

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