PRODUCTION OF BETULIN AND FATTY ACIDS FROM BIRCH BARK

Description
The technology is intended to produce biologically active betulin and fatty acids from birch bark. The activation of birch bark in the presence of alkali reduces the duration of the combined activation-hydrolysis process to about 3-5 min and increases the extent of betulin extraction to 97% of its content in the bark. After separation of betulin, the alkaline solution is used to produce fatty acids, mostly C18 and C22 oxyacids. The yield of fatty acids is 30-35% of the weight of absolutely dry birch bark (for residual moisture of < 1%). Betulin is the most abundant triterpinoid of the lupane series, and its content in birch bark can reach 35%. Betulin and betulinic acid have gastroprotective, hepatoprotective, and antiviral properties and antitumor activity. In addition, betulin and its esters are good emulsifiers, and fatty oxyacids can be used as surfactants, plasticizers, etc.

Technical appraisal and economic benefits
- a severalfold decrease in the duration of the process;
- a factor of 1.5 increase in the yield of betulin;
- production of fatty acids as a by-product.

Application areas
Medicine, pharmaceutics, perfume manufacturing, and food and chemical industries.

Development stage
The production process was tested in a pilot reactor with a volume of 120 liters.

Patent situation
Three patents were granted in the Russian Federation (1997, 1999).

Commercial offers
Joint commercialization of the technology.

Estimated cost
Price is to be negotiated.

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