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Transglycosylation of Mogroside V, a Triterpene Glycoside in *Siraitia grosvenori*, by Cyclodextrin Glucanotransferase and Improvement of the Qualities of Sweetness

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Mogroside V (MV), a main sweet triterpene glycoside in the extract of the fruit of Luo-han-guo (*Siraitia grosvenori* Swingle), was transglycosylated by cyclodextrin glucanotransferases (CGTases) using starch as a donor substrate. CGTases from *Bacillus macerans*, *B. circulans*, *B. stearothermophilus* and *Thermoanaerobacter* sp. were effective for the transglycosylation of MV. It was appropriate for the production of glycosylated MV to react 9% (w/v) MV with 20% (w/v) tapioca starch and *B. macerans* enzyme (30 U/g-starch) at 50°C and pH 6.5. Under these conditions, the reaction finished within 24 h and more than 90% of a glycosylation yield was attained. Three products that have 1-3 additional glucose residues were identified as transglycosylation products by mass spectrometry. The greater number of glucose residues introduced, the less intensity of sweetness compared to MV was estimated by sensory evaluation. However the qualities of sweetness such as bitterness, after-taste, and peculiarity were improved by transglycosylation.

Key words: mogroside V, transglycosylation, cyclodextrin glucanotransferase, sweetness, quality of sweetness

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