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Production and physicochemical assessment of new stevia amino acid sweeteners from the natural stevioside

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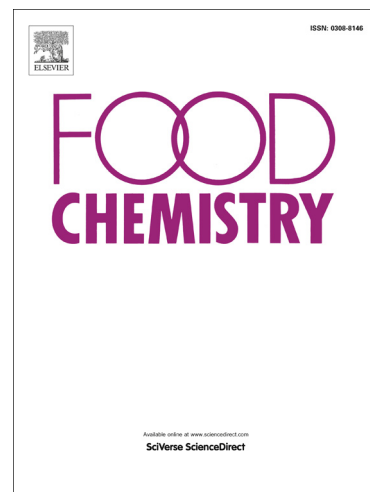
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1 **Production and physicochemical assessment of new stevia amino**
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18 **Abstract**

19 New stevia amino acid sweeteners, stevia glycine ethyl ester (ST-GL) and stevia
20 L-alanine methyl ester (ST-GL), were synthesized and characterized by IR, NMR
21 (¹H NMR and ¹³C NMR) and elemental analysis. The purity of the new
22 sweeteners was determined by HPLC and their sensory properties were evaluated
23 relative to sucrose in an aqueous system. Furthermore, the stevia derivatives (ST-
24 GL and ST-AL) were evaluated for their acute toxicity, melting point, solubility
25 and heat stability. The novel sweeteners were stable in acidic, neutral or basic
26 aqueous solutions maintained at 100°C for 2 h. The sweetness intensity rate of the
27 novel sweeteners was higher than sucrose. Stevia amino acid (ST-GL and ST-
28 AL) solutions had a clean sweetness taste without bitterness when compared to
29 stevioside. The novel sweeteners can be utilized as non-caloric sweeteners in the
30 production of low-calorie food.

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