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Kojic acid-amino acid amide metal complexes and their melanogenesis inhibitory activities.

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Abstract

Tyrosinase plays a critical role in the early stages of the melanin synthetic pathway by catalyzing the oxidation of the substrate. Therefore, tyrosinase inhibitors have been intensively studied in both cosmetic and food industries to develop hypopigmentary agents and prevent enzymatic browning in food. Previously, we reported that kojic acid-amino acid amide (KA-AA-NH(2)) showed enhanced tyrosinase inhibitory activity compared with kojic acid alone, but this was not observed in a cell test because of poor cell permeability. To enhance cell permeability, we prepared copper and zinc complexes of KA-AA-NH(2) and characterized them using FT-IR spectroscopy, ESI-MS spectrometry, and inductively coupled plasma analysis. We then showed that KA-AA-NH(2) copper complexes exhibited melanogenesis inhibitory activity in Mel-Ab cells. Copyright © 2011 European Peptide Society and John Wiley & Sons, Ltd.

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