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Occurrence, Biological Activity and Metabolism of 6-shogaol

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Abstract

As one of the main bioactive compounds of dried ginger, 6-shogaol has been widely used to alleviate many ailments. It is also a major pungent flavor component, and its precursor prior to dehydration is 6-gingerol, which is reported to be responsible for the pungent flavor and biological activity of fresh ginger. Structurally, gingerols including 6-gingerol have a β-hydroxyl ketone moiety and is liable to dehydrate to generate an α,β-unsaturated ketone under heat and/or acidic conditions. The conjugation of the α,β-unsaturated ketone skeleton in the chemical structure of 6-shogaol explicates its higher potency and efficacy than 6-gingerol in terms of antioxidant, anti-inflammatory, anticancer, antiemetic and other bioactivities. Research on the health benefits of 6-shogaol has been conducted and results have been reported recently; however, scientific data are scattered due to a lack of systematic collection. In addition, action mechanisms of the preventive and/or therapeutic actions of 6-shogaol remain obscurely non-collective. Herein, we review the preparations, biological activity and mechanisms, and metabolism of 6-shogaol as well as the properties of 6-shogaol metabolites.

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