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Synthesis of photolabile Δ lac-acetogenin for photoaffinity labeling of mitochondrial complex I

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Abstract:

Δ lac-Acetogenins are a novel type of inhibitor acting at the terminal electron transfer step of mitochondrial NADH-ubiquinone oxidoreductase (complex I). To identify the binding site of Δ lac-acetogenins by photoaffinity labeling, we synthesized a photolabile Δ lac-acetogenin that possesses a biotin probe to enable the detection and the isolation of the labeled peptide without the use of a radioisotope. The photolabile Δ lac-acetogenin synthesized in this study elicited potent inhibition of bovine heart mitochondrial complex I at the nanomolar level. © Pesticide Science Society of Japan

Keywords:

complex I, acetogenin, respiratory inhibitor

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