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Design and synthesis of new lupeol derivatives and their α-glucosidase inhibitory and cytotoxic activities

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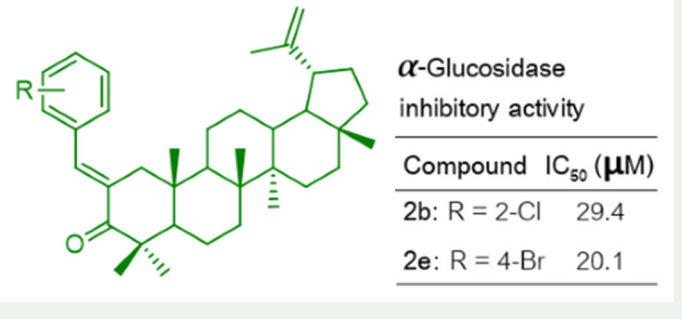
ABSTRACT

A series of lupeol derivatives **2**, **2a-2f**, **2a-2h**, **3a-3e**, and **4a-4b** were designed, synthesised and evaluated for their α-glucosidase inhibitory and cytotoxic activities. Among synthetic derivatives, lupeol analogues **2b** and **2e** containing a benzylidene chain exhibited the best activity against α-glucosidase and superior to the positive agent with the IC_{50} values of 29.4 ± 1.33 and 20.1 ± 0.91 μM, respectively. Lupeol analogues **2d** and **3a** showed weak cytotoxicity against K562 cell line with the IC_{50} values of 76.6 ± 2.40 and 94.4 ± 1.51 μM, respectively.



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Lupeol derivative; α-glucosidase inhibition; cytotoxicity

1. Introduction

Diabetes mellitus (DM), also known as diabetes, is a condition that impairs the body's ability to process blood glucose, otherwise known as blood sugar. There are three

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