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Article

Synthesis, AntiÃƒÂ¢Ã‚Ã‚Â•inflammatory, and Arginase Inhibitory Activity of Piceatannol and Its Analogs

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Abstract

The present study describes the synthesis of piceatannol (**2**) and its analogs (**3ÃƒÂ¢Ã‚Â€Ã‚Â“8**) using WittigÃƒÂ¢Ã‚Â€Ã‚Â•Horner reaction, Colvin rearrangement, and Sonogashira reaction as key steps and also evaluation of their inhibitory potency on the production of inflammatory mediator nitric oxide (NO) in lipopolysaccharide (LPS)ÃƒÂ¢Ã‚Â€Ã‚Â•induced RAWÃƒÂ¢Ã‚Â€Ã‚Â•264.7 macrophages. Three compounds **7** (90.1%), **8** (60.8%), and **6** (55.2%) were found to potently inhibit NO production induced by LPS without affecting the viability of RAWÃƒÂ¢Ã‚Â€Ã‚Â•264.7 cells. In addition, their Arginase I and II inhibition activity was also evaluated. In this study, three compounds, *i.e.*, compounds **2ÃƒÂ¢Ã‚Â€Ã‚Â“4** were showed good inhibition activity to both arginase I and II. Of

the synthesized compounds, compound **2** exhibited maximum inhibitory activity of 28% (arginase I) and 26% (arginase II) at 10 ÃƒÂŽÃ‚Â¼M concentration followed by compounds**3** and **4** of 20 and 22% to arginase I, 22 and 23% to arginase II, respectively.

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