

## Extraction and Antidiabetic Evaluation of *Zaleya pentandra*

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**SUMMARY.** The purpose of the study was to examine the phytochemical and antidiabetic potential of the plant *Zaleya pentandra*, commonly known as “itsit”, belonging to the family Aizoaceae. Species from the genus *Zaleya* has been reported as having antidiabetic, antimalarial, antimicrobial, antioxidant, and antipyretic properties. The aerial parts of the plant were dried under shade, grounded to fine powder and subjected to extraction by using dichloromethane and methanol at room temperature for 24 hr. For isolation purpose, 15 g methanol extract of *Z. pentandra* were subjected to column chromatography and five fractions were obtained. The fraction No. 3 was further purified and the pure compound was subjected to physical, chemical and spectroscopic techniques like UV, IR, <sup>1</sup>H-NMR, <sup>13</sup>C-NMR and HREI-MS for the structure elucidation. The UV spectrum showed absorption bands at 230 and 270 nm. IR spectrum of compound showed absorption bands at 3343, 1726, 1598, and 2928 cm<sup>-1</sup>. The molecular formula was established by HREI-MS. The <sup>1</sup>H-NMR spectrum of compound displayed a signal at δ 7.60, 7.61, 7.77, 4.21, and 3.30. The <sup>13</sup>C-NMR spectrum of compound disclosed twenty-four carbon signals. The compound was named “pentandradiol” and is novel compound. The α-glucosidase inhibition test was conducted and dichloromethane extract of *Z. pentandra* showed significant inhibitory activity against α-glucosidase. The plant that is rich in α-glucosidase inhibitor can be used for treating diabetes.

**RESUMEN.** El objetivo del estudio fue examinar el potencial fitoquímico y antidiabético de la planta *Zaleya pentandra*, comúnmente conocida como “itsit”, perteneciente a la familia Aizoaceae. Se ha descrito que las especies del género *Zaleya* tienen propiedades antidiabéticas, antimaláricas, antimicrobianas, antioxidantes y antipiréticas. Las partes aéreas de la planta se secaron bajo la sombra, se trituraron a polvo fino y se sometieron a extracción utilizando diclorometano y metanol a temperatura ambiente durante 24 h. A fines del aislamiento, se sometieron a cromatografía en columna 15 g de extracto de metanol de *Z. pentandra* y se obtuvieron cinco fracciones. La fracción No.3 se purificó y el compuesto puro se sometió a técnicas físicas, químicas y espectroscópicas como UV, IR, <sup>1</sup>H-RMN, <sup>13</sup>C-RMN y HREI-MS para la elucidación de la estructura. El espectro UV mostró bandas de absorción a 230 y 270 nm. El espectro IR del compuesto mostró bandas de absorción a 3343, 1726, 1598 y 2928 cm<sup>-1</sup>. La fórmula molecular se estableció por HREI-MS. El espectro de <sup>1</sup>H-NMR del compuesto mostró señales a δ 7.60, 7.61, 7.77, 4.21 y 3.30. El espectro de <sup>13</sup>C-NMR del compuesto reveló veinticuatro señales de carbono. El nuevo compuesto se denominó “pentandradiol”. Se realizó la prueba de inhibición de la α-glucosidasa y el extracto de diclorometano de *Z. pentandra* mostró una actividad inhibitoria significativa contra la α-glucosidasa. La planta, rica en inhibidor de α-glucosidasa, puede usarse para tratar la diabetes.

**KEY WORDS:** antidiabetic activity, pentandradiol, *Zaleya pentandra*.

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