

# EXPLORING BIOLOGICAL AND CHEMICAL PROPERTIES OF OROXYLUM INDICUM (L.) KURZ

M Oliur Rahman<sup>1</sup>, Nahid Sultana<sup>2</sup>, Md Abdur Rashid<sup>1</sup> and Md Abul Hassan<sup>1</sup>

University of Dhaka, Bangladesh

<sup>2</sup>Jagannath University, Bangladesh

The multi-faced biological activities, viz. antioxidant, cytotoxic and antimicrobial potential of methanol extract and its different soluble partitionates of root bark of medicinally important plant *Oroxylum indicum* were evaluated. In the antioxidant assay by DPPH, free radical scavenging method, crude methanolic extract of root bark of *O. indicum* revealed the highest free radical scavenging activity with IC<sub>50</sub> values of 9.29±0.28 µg/ml. The highest amount of phenolics (15.75±0.34 mg of GAE/gm of extractives) was observed in crude methanolic extract of root bark. The chloroform and dichloromethane soluble fraction of crude extract of root bark of methanolic extract of *O. indicum* displayed the highest cytotoxic potential having LC<sub>50</sub> values of 0.63±0.17 µg/ml and 0.67±0.15 µg/ml respectively. In case of antibacterial screening, dichloromethane soluble fraction of methanolic extract of root bark of *O. indicum* showed antibacterial activity with the highest zone of inhibition of 16.0 mm observed in *Bacillus subtilis*. Four compounds were isolated from dichloromethane soluble fraction of methanol extract of root bark of *O. indicum* and the structure of the purified compounds were elucidated by extensive analysis of their high resolution 1H spectroscopic data as well as by comparison with published values. The isolated compounds were: i) AR-017 as 5,7-dihydroxy-3-methoxyflavone, ii) AR-018 as 7-methoxy-3,5 dihydroxyflavone, iii) AR-023 as 5,7-dihydroxyflavone (Chrysin) and iv) AR-030 as 3,4',5,7-tetrahydroxyflavonol (Kaempferol). The 1H NMR of AR-017 displayed two sharp singlets at δ 4.05 (3H) and 13.01 (1H). The <sup>13</sup>C NMR spectrum of the compound AR-018 exhibited 13 signals for 16 carbons. The 1H NMR spectrum of the compound AR-023 demonstrated three sharp singlets at δ 6.24 (1H), 6.49 (1H) and 6.75 (1H), while the 1H NMR (400 MHz, CDCl<sub>3</sub>) spectrum of AR-030 presented characteristic signals for a flavonol moiety.

prof.oliurrahman@gmail.com  
oliur.bot@du.ac.bd