Spasmolytic Action of Diplotropin, a Furanoflavan from *Diplotropis ferruginea* Benth., Involves Calcium Blockade in Guinea-Pig Ileum

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Diplotropis ferruginea Benth. (Fabaceae) is a tree popularly known in Northeastern Brazil as "sucupira-preta". In the present work, the isolation, identification and pharmacological activity of a furanoflavan-type flavonoid (2,3-*trans*-3,4-*trans*)-3,4,5,8-tetramethoxy-(6,7,2",3")-furanoflavan, which received the trivial name diplotropin is reported. The structure was determined by means of spectroscopic techniques, especially EIMS and 1D and 2D NMR. Diplotropin ($10^{-8} - 3 \cdot 10^{-4}$ M) inhibited the phasic contractions induced by both acetylcholine ($IC_{50} = 4.6 \pm 0.8 \cdot 10^{-5}$ M) and histamine ($IC_{50} = 2.3 \pm 1.1 \cdot 10^{-5}$ M) in guinea-pig ileum. Diplotropin relaxed the ileum pre-contracted with KCl ($EC_{50} = 3.9 \pm 1.1 \cdot 10^{-6}$ M), acetylcholine ($EC_{50} = 3.7 \pm 1.6 \cdot 10^{-6}$ M) and histamine ($EC_{50} = 4.4 \pm 1.4 \cdot 10^{-5}$ M) in a concentration-dependent manner. As the maintenance of tonic contraction induced by these contractile agents involves Ca^{2+} influx through voltage-dependent Ca^{2+} channels, it is suggestive that this relaxation may be due to the blockade of Ca^{2+} influx through those channels. This hypothesis was confirmed by the observation that diplotropin antagonized ($pD'_2 = 4.83 \pm 0.37$) $CaCl_2$ induced contractions in Ca^{2+}-free depolarizing medium ($IC_{50} = 1.5 \pm 0.8 \cdot 10^{-5}$ M).

Key words: Diplotropis ferruginea, Spasmolytic Action, Guinea-Pig Ileum