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Paper

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Apigenin, a Component of *Matricaria recutita* Flowers, is a Central Benzodiazepine Receptors-Ligand with Anxiolytic Effects

H. Viola¹, C. Wasowski², M. Levi de Stein¹, C. Wolfman¹, R. Silveira³, F. Dajas³, J. H. Medina¹, A. C. Paladini²

¹Instituto de Biología Celular, Facultad de Medicina, Paraguay 2155 (1121), Buenos Aires, Argentina

²Instituto de Química y Fisicoquímica Biológicas, Facultad de Farmacia y Bioquímica, Junín 956 (1113), Buenos Aires, Argentina

³Instituto de Investigaciones Biológicas "Clemente Estable", Avda Italia 3318, (11600) Montevideo, Uruguay

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Abstract

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Abstract

The dried flower heads of *Matricaria recutita* L. (Asteraceae) are used in folk medicine to prepare a spasmolytic and sedative tea. Our fractionation of the aqueous extract of this plant led to the detection of several fractions with significant affinity for the central benzodiazepine receptor and to the isolation and identification of 5,7,4-trihydroxyflavone (apigenin) in one of them. Apigenin competitively inhibited the binding of flunitrazepam with a K_i of 4 μM and had no effect on muscarinic receptors, α_1 -adrenoceptors, and on the binding of muscimol to GABA_A receptors. Apigenin had a clear anxiolytic activity in mice in the elevated plus maze without evidencing sedation or muscle relaxant effects at doses similar to those used for classical benzodiazepines and no anticonvulsant action was detected. However, a 10-fold increase in dosage produced a mild sedative effect since a 26% reduction in ambulatory locomotor activity and a 35% decrement in hole-board parameters were evident. The results reported in this paper demonstrate that apigenin is a ligand for the central benzodiazepine receptors exerting anxiolytic and slight sedative effects but not being anticonvulsant or myorelaxant.



Key words

Matricaria recutita - Asteraceae - chamomile - flavonoids - apigenin - sedation - anxiolytic effect - exploration - locomotion - convulsions

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