



## Anticholinesterase Activity of Extracts and Isolated Coumarins from Roots of *Ferulago blancheana*, *F. pachyloba*, *F. trachycarpa* and *F. bracteata*

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**SUMMARY.** The study reports the anticholinesterase activities of *Ferulago blancheana*, *F. pachyloba*, *F. trachycarpa* and *F. bracteata*. Anticholinesterase activity from the methanol extracts from aerial parts and roots of these species and their n-hexane, dichloromethane, ethyl acetate, n-butanol and aqueous residue fractions along with the isolated compounds osthole (1), imperatorin (2), bergapten (3), prantschimgin (4), peucedanol-2'-benzoate (5), grandivitol (6), suberosin (7), xanthotoxin (8), felamidin (9), marmesin (10), umbelliferone (11), and ulopterol (12) and a sterol mixture consisted of stigmasterol (13),  $\beta$ -sitosterol (14) were evaluated by Ellman method. Dichloromethane fraction of root from *F. blancheana* showed strong inhibition against acetylcholinesterase (55.67%) and dichloromethane fraction of root from *F. bracteata* demonstrated strong inhibition against butyrylcholinesterase (99.78%) at 20  $\mu$ g/mL. Peucedanol-2'-benzoate (75.59%) and umbelliferone (61.09%) demonstrated strong inhibition against acetylcholinesterase. Prantschimgin (74.82%) and felamidin (77.11%) demonstrated strong inhibition against butyrylcholinesterase. Dichloromethane fractions of roots from these species had a notable anticholinesterase activities.

**RESUMEN.** El estudio informa las actividades anticolinesterasas de *Ferulago blancheana*, *F. pachyloba*, *F. trachycarpa* y *F. bracteata*. La actividad anticolinesterásica de los extractos metanólicos de las partes aéreas y raíces de estas especies y sus fracciones de n-hexano, diclorometano, acetato de etilo, n-butanol y residuo acuoso, junto con los compuestos aislados ostoleto (1), imperatorina (2), bergapten (3), prantschimgina (4), peucedanol-2'-benzoato (5), grandivitol (6), suberosina (7), xanthotoxina (8), felamidina (9), marmesina (10), umbelliferona (11) y ulopterol (12) y una mezcla de esteroides consistió en estigmasterol (13),  $\beta$ -sitosterol (14), fueron evaluados por el método de Ellman. La fracción de diclorometano de la raíz de *F. blancheana* mostró una fuerte inhibición frente a acetilcolinesterasa (55,67%) y la fracción de diclorometano de la raíz de *F. bracteata* demostró una fuerte inhibición contra la butirilcolinesterasa (99,78%) a 20  $\mu$ g/mL. El peucedanol-2'-benzoato (75,59%) y la umbelliferona (61,09%) mostraron una fuerte inhibición contra acetilcolinesterasa. Prantschimgina (74,82%) y felamidina (77,11%) demostraron una fuerte inhibición contra butirilcolinesterasa. Las fracciones de diclorometano de las raíces de estas especies tuvieron una notable actividad anticolinesterásica.

**KEY WORDS:** Anticholinesterase, *Ferulago*, felamidin, peucedanol-2'-benzoate, prantschimgin, umbelliferone.

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