Asteraceae plants as potential source of effective acetylcholinesterase inhibitors

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Santolina chamaecyparissus (SC) and *Ambrosia peruviana* (AP) (Asteraceae) are aromatic plants cultivated at the southwest of Buenos Aires province, Argentina, commonly known as camomile and camphor, respectively. The medicinal properties of these species have been extensively investigated and their therapeutic actions have been attributed to certain sesquiterpenes components. In this work we focus our attention on the dichloromethane extract (DCME) of these plants and its bioactive components.

These sub-extracts were analyzed by GC-MS and fractionated by silica gel column chromatography. The isolated active compounds were identified by comparing their ^{1}H and ^{13}C NMR data with those reported in the literature. The active compounds obtained from DCME-SC were identified as manool and α-bisabololol, while dehydroaromandendrene and germacrene B were isolated from DCME-AP. DCME-SC, DCME-AP and the active isolated compounds showed potent antioxidant activity by scavenging free radicals. Good acetylcholinesterase (AChE) inhibition results were also observed for DCME-SC and DCME-AP with IC_{50} values of 60.25 and 68.21 µg/mL, respectively. Compounds isolated from DCME-SC presented a potent inhibition of AChE with IC_{50} values in the range 6.04 - 14.96 µM, while the compounds isolated from DCME-AP presented inhibition with IC_{50} values between 27.12 and 33.89 µM.

These results suggest that this plants and/or their components could lead to the development of new anti-Alzheimer agents.