

**ANTIOXIDANT PROPERTIES OF THE EXTRACTS OBTAINED WITH  
SUPERCRITICAL CO<sub>2</sub> AND SOLVENTS  
FROM VARIOUS *L. alba* AND *L. organoides* CHEMOTYPES**

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Three *Lippia organoides* (carvacrol-rich, thymol-rich and phellandrene-rich) and 2 *Lippia alba* (carvone-rich and citral-rich) chemotypes were subjected to either supercritical fluid extraction (SFE) or solvent extraction (SE) (62.5% methanol). Supercritical CO<sub>2</sub> extractions were carried out on a Thar SFE 2000-2-FMC-50 instrument for 2 h at 60 °C, 300 bar, and CO<sub>2</sub> flow of 37 g/min. The anti-oxidant capacity of the obtained extracts was evaluated using the oxygen radical absorption capacity (ORAC) and the ABTS radical bleaching assays. Trolox® was used as standard quality control measure in all measurements. The phellandrene-rich *L. organoides* SFE extract showed the highest antioxidant capacity (4200 ± 130 µmol Trolox®/g sample) according to the ORAC assay. Solvent extracts of the various chemotypes are seen as an excellent source of natural antioxidants, on the basis of their relatively high antioxidant capacity, between 2100 and 7100 µmol Trolox®/mg sample. The ABTS results showed a strong correlation between antioxidant capacity and carvacrol or thymol concentration. Both phenolic compounds are well-known antioxidants, with antioxidant capacities above 5000 µmol Trolox®/g sample. The extracts from both *L. alba* chemotypes exhibited an antioxidant capacity much lower than that of the extracts from *L. organoides* chemotypes. The extracts obtained from the *L. organoides* chemotypes are a reliable source of natural antioxidants.

**Keywords:** *Lippia organoides*, ORAC, ABTS, carvacrol, thymol.

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