

# The Chemical Compositions of Essential Oils Derived from *Cryptocarya alba* and *Laurelia sempervirens* Possess Antioxidant, Antibacterial and Antitumoral Activity Potential

Touma, J.  
Navarro, M.  
Sepúlveda, B.  
Pavon, A.  
Corsini, G.  
Fernández, K.  
Quezada, C.  
Torres, A.  
Larrazabal-Fuentes, M.J.  
Paredes, A.  
Neira, I.  
Ferrando, M.  
Bruna, F.f  
Venegas, A.  
Bravo, J.

## Abstract

*Cryptocarya alba* (Peumo; CA) and *Laurelia sempervirens* (Laurel; LS) are herbs native to the Chilean highlands and have historically been used for medicinal purposes by the Huilliches people. In this work, the essential oils were extracted using hydrodistillation in Clevenger apparatus and analyzed by GC-MS to determine their composition. The antioxidant capacity (AC) was evaluated in vitro. The cytotoxicity was determined using cell line cultures both non tumoral and tumoral. The toxicity was determined using the nematode *Caenorhabditis elegans*. The antimicrobial activity was evaluated against 52 bacteria using the agar disc diffusion method and the minimum inhibitory concentrations (MICs) were determined. The principal compounds found in *C. alba* essential oil (CA\_EO) were  $\alpha$ -terpineol (24.96%) and eucalyptol (21.63%) and were isazafrol (91.9%) in *L. sempervirens* essential oil (LS\_EO). Both EOs showed antioxidant capacity in vitro. Both EO showed antibacterial activity against bacteria using. LS\_EO showed more inhibitory effect on these cell lines respect to CA\_EO. Both EOs showed toxicity against the nematode *C.elegans* at 3.12-50 mg/mL. The essential oils of CA and LS have an important bioactive potential in their antioxidant, antibacterial and cytotoxicity activity. Both essential oils could possibly be used in the field of natural medicine, natural food preservation, cosmetics, sanitation and plaguicides among others.

Author keywords

Antimicrobial

Antioxidant

chemical composition

*Cryptocarya alba*

Cytotoxicity

essential oil

*Laurelia sempervirens*

toxicity