

PP-070– *In vitro* anti-herpes activity of *Salvia desoleana* Atzei & V. Picci essential oil

Valeria Cagno^a, Barbara Sgorbini^b, Cinzia Sanna^c, Cecilia Cagliero^b, Mauro Ballero^c, Carlo Bicchi^b, David Lembo^a, Patrizia Rubiolo^{b*}

^a Dipartimento di Scienza e Tecnologia del Farmaco, Università degli Studi di Torino, Via Pietro Giuria 9, I-10125 Torino, Italy

^b Laboratory of Molecular Virology, Department of Clinical and Biological Sciences, Università degli Studi di Torino, I- 10043, Torino, Italy

^c Dipartimento di Scienze della Vita e dell'Ambiente, Università degli Studi di Cagliari, Viale S. Ignazio 13, I-09123 Cagliari, Italy

*Corresponding author. Email: patrizia.rubiolo@unito.it

Abstract (max 350 words, 1 template page)

Salvia desoleana Atzei & V. Picci is an indigenous species in Sardinia island used in folk medicine to treat menstrual, digestive and central nervous system disease. Nowadays, it is widely cultivated for the pleasant smell of its essential oil, whose antimicrobial and antifungal activities have been already screened (Peana et al. 1999, Sokovic et al. 2009).

Within a project aiming to investigate the potential antiviral activity of endemic plants from Sardinia, this study evaluated the *in vitro* anti-Herpes Simplex Virus (HSV-2) activity of *Salvia desoleana* essential oil (EO) and its main components: linalyl acetate (25%), alpha terpinyl acetate (16%) and germacrene D (18%).

The results showed that *S. desoleana* EO inhibits both acyclovir sensitive and acyclovir resistant HSV-2 strains with IC₅₀ values of 23.72 µg/ml for the former and 28.57 µg/ml for the latter. Moreover, a significant suppression of HSV-2 replication was observed with an EC₅₀ value of 33.01 µg/ml (95% CI: 26.26 to 41.49) when the EO was added post-infection.

A bioassay-guided fractionation procedure was therefore adopted to identify the active fraction(s) and/or compounds in *S. desoleana* EO. Among the fractions resulting from flash column chromatography on Silica gel, that containing 84% of germacrene D showed a similar spectrum of activity of *S. desoleana* EO although increased because of the germacrene D enrichment (EC₅₀ of 10.19 µg/ml against HSV-2 and 6.58 µg/ml against HSV-2 acyclovir resistant) and with a stronger suppression in post-infection stage.

In conclusion, *S. desoleana* EO and germacrene D can be of interest to develop new and alternative anti-HSV-2 products also active against acyclovir-resistant HSV-2 strains.

Keywords: *Salvia desoleana*, Germacrene D, antiviral activity, HSV-2

REFERENCES

Peana A.T., Moretti M.D.L., Juliano C. (1999) Chemical composition and antimicrobial action of the essential oils of *Salvia desoleana* and *S. Sclarea*. *Planta medica*, 65(8), 752-4.

Sokovic M.D., Brkic, D.D., Dzamic, A.M., Ristic M.S., Marin P.D. (2009). Chemical composition and antifungal activity of *Salvia desoleana* Atzei & Picci essential oil and its major components. *Flavour and Fragrance Journal*, 24(2), 83-87.