

OP7. EVALUATION OF THE ANTIVIRAL POTENTIAL OF *MARRUBIUM VULGARE* EXTRACTS

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Marrubium vulgare L. (horehound) is a member of the Lamiaceae, represented also with *Marrubii herba* as an EMA monograph with traditional medicinal uses as an expectorant in patients having cough associated with a cold.

In this present study, the antiviral potential of different *M. vulgare* extracts was compared using in vitro angiotensin converting enzyme 2 (ACE2), transmembrane serine protease (TMPRSS), and neuraminidase enzyme (NA) assays, respectively.

Standardized dried extract, aqueous ethanol and other liquid extracts of the European Pharmacopoeia quality *Marrubii herba* were prepared using different extraction methods. ACE2, TMPRSS and NA enzyme inhibitions were performed using commercial kits at 20-50 µg/mL concentrations.

Among the tested extracts, the 30% ethanol extract inhibited the ACE2 enzyme by 78%, the TMPRSS enzyme by 69%, and the NA enzyme by 75%, respectively. The comparative experimental results showed that the best inhibitory activity was observed by the 30% ethanol extract. To the best of our knowledge, this is the first report on the antiviral activity potential of different *M. vulgare* extracts.

As a conclusion, in line with the experimental data from this study, *Marrubium* aqueous ethanol extracts can be utilized against cold and flu due to its antiviral potential. More *in vivo* and clinical work is needed to verify the safe and efficient use of horehound preparations.

Keywords: *Marrubium*; extraction; antiviral; in vitro enzyme assay.

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