

IN VITRO ANTIOXIDANT ACTIVITY OF AGED EXTRACTS OF SOME ITALIAN SPONTANEOUS *ALLIUM* SPECIES

Nencini Cristina, Micheli Lucia, Giorgi Giorgio, Franchi Gian Gabriele

Department of Pharmacology “Giorgio Segre”, University of Siena

Antioxidant activity of fresh *Allium sativum* L. (garlic) is well known mainly due to unstable organosulphur compounds as allicin and flavonoids (1,2). Extracts of fresh garlic that are aged over a prolonged period (up to 20 months) to produce aged garlic extract (AGE) contain antioxidant phytochemicals that prevent oxidative damage by scavenging free radicals (3). Long term extraction of garlic ages the extract, creating antioxidant properties by modifying unstable molecules (such as allicin) and increasing stable and water soluble organosulphur compounds, such as S-allylcysteine and S-allylmercaptocysteine.

In this study we investigated the *in vitro* antioxidant activity of aged (up to 20 months) 15% hydroethanolic extracts of bulbs of three *Allium* spontaneous species which are endemic for Italian flora (4): *Allium neapolitanum* Cyr., *Allium subhirsutum* L., *Allium roseum* L., and to compare with the *in vitro* antioxidant activity of aged 15% hydroethanolic of bulbs of garlic (*Allium sativum* L.). Moreover we investigated the *in vitro* antioxidant activity of aged 15% hydroethanolic extracts of different parts of *Allium neapolitanum* Cyr. (bulblets, flowers, and leaves). The antioxidant potential of aged extracts of all species has been evaluated using two different spectrophotometric assays: 2,2-diphenylpicrylhydrazyl (DPPH°) test (5) and the ferric reducing/antioxidant power (FRAP) assay (6). Flowers of *A. neapolitanum* and bulbs of *A. sativum* exhibited the strongest radical scavenging activity (IC_{50} : 1.00 ± 0.225 mg/ml and 0.97 ± 0.125 mg/ml respectively) and antioxidant activity (FRAP values are 20.60 μ mol/g and 16.13 μ mol/g of aged extract respectively), followed by *A. neapolitanum* leaves (IC_{50} : 7.66 ± 0.157 mg/ml and FRAP value 16.68 μ mol/g of aged extract). The results obtained underlined the highest antioxidant capacity of the garlic bulbs compared with bulbs of spontaneous species confirmed the literature data; interesting information are achieved by parts of the plant, flowers and leaves of *Allium neapolitanum*, generally not studied.

References

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