



## FREE RADICAL SCAVENGING PROPERTIES OF SOME WINE PROBES

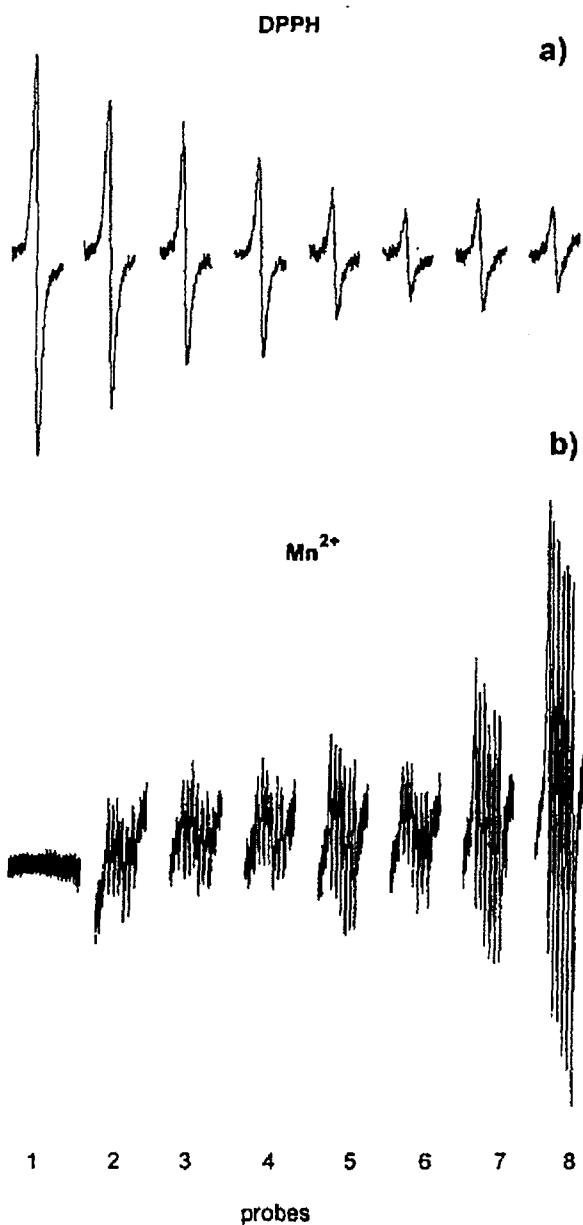
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Beneficial properties of wine to human organism are subject of growing discussions in the last few years. Not only people drinking wine confirm this benefit, but there is also experimental evidence on the scavenging properties of wine probes, which may be compared with action of some vitamins or even some medicines, which also benefitly act as scavengers of free radicals in the living organisms. Investigations of scavenging properties of wine probes are a subject of investigations in our laboratory and some of the results obtained are presented here.

There are already few reports in the literature testing the scavenging properties of wine probes. We included these techniques in our experiments and, additionally, we look for further new procedures. Some of the preliminary results are summarised here. Our preliminary investigations are demonstrated on 8 probes from Slovak wine districts, consisting of one reference (alcohol 12% by vol), 3 probes of white wine and 4 probes of red wine. According to the literature so far, wine probes contain paramagnetic species ( $Mn^{2+}$ , characterised with sextet spectrum, and a singlet line around  $g=2,00$ ). In our probes we observed  $Mn^{2+}$  as shown in Fig.1b, but no significant evidence for a single line of free radical was found. Preliminary, according to Fig.1b, we can conclude that  $Mn^{2+}$  content in the red wines is generally higher than in the white ones. More detailed comparison of the individual probes is not justified at the present stage of study.

Further, we investigated the scavenging activities of the probes adding solution of dinitro-pikril hydrazyl (DPPH-stable radical) to them. Their ability to terminate free radicals resulted in the decrease of the final DPPH concentrations in the probes. As it can be seen from Fig.1a here, the red wines have significantly higher capability to scavenge free radicals than the probes of white wines.



Our further investigations are focused on the scavenging abilities of wine probes towards hydroxyl and carbon-centred radicals as well as their antioxidant activities in the lipid peroxidation. Preliminary we found similar trends as indicated above, which imply a higher scavenging capacity of the red wines than white ones.

**Fig.1** Scavenging ability of various wine probes as tested towards a constant amount of DPPH free radical. The decrease of the EPR line is proportional to the scavenging ability of the corresponding probe (a) and (b) the relative concentrations of Mn(II) ions as characterised by the intensity of the corresponding EPR spectrum.

The investigated probes are:  
 (1) - reference - 5% ethanol  
 (2) - (4) probes of white wine  
 (5) - (8) probes of red wine

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