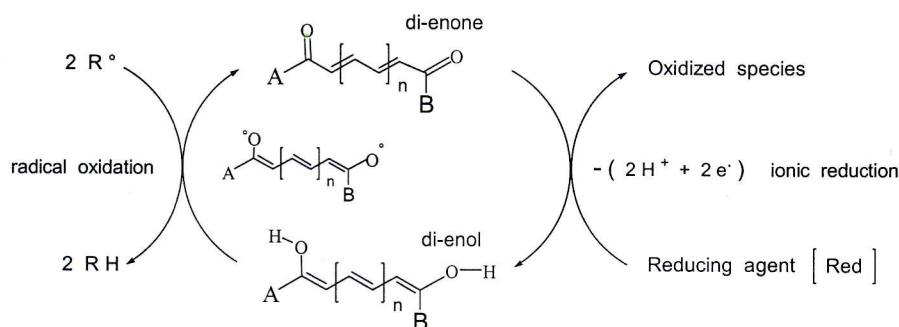


# ANTHOCYANIN OXIDATION STATUS : ARE ANTHOCYANINS GOOD ANTIOXIDANTS AND WHY ?

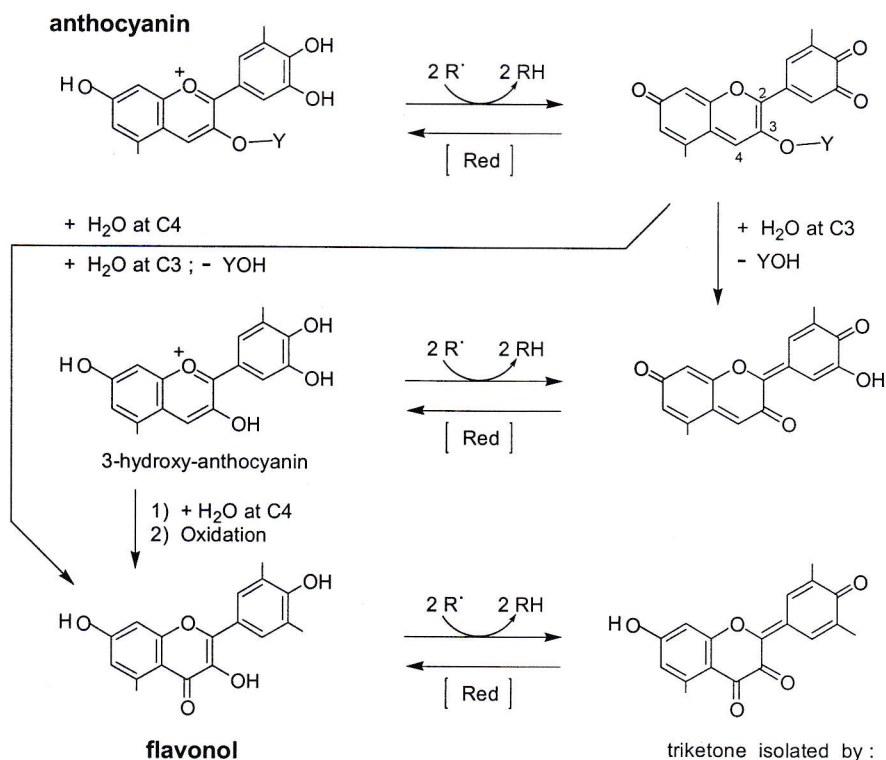
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## The two electron, two proton, two radical mechanism

The abstraction of two hydrogen atoms by two free radicals on a conjugated di-enol structure, lead to a di-enone oxidized, stable and neutral intermediate, after an **internal neutralisation** of both lone electrons. This di-enone can be reduced back to its former form by intervention of a biological active reductive system ( like the  $\text{NAD}^+/\text{NADH}$  system ) , for instance by use of two protons and two electrons :



A number of Flavonoids exhibit a di-enol structure, able to generate the di-enol – di-ketone mechanism, such as the anthocyanins and the flavonols :



- L.V. JORGENSEN et al *Free Rad. Res.* **1998**, 29, 339  
- G. JUNGBLUT et al *J. Chem.Soc. Perkin Trans 2*, **2000**, 1946

The balance of this transformation is the following :

