

Rooibos inhibits angiotensin-converting enzyme (ACE) *in vitro* and *in vivo*

Green tea (*Camellia sinensis* L.) and Rooibos (*Aspalathus linearis* Dahlg.) inhibit angiotensin-converting enzyme (ACE) *in vitro* and *in vivo*. The ACE inhibitor enalaprilat has been described previously as a competitive inhibitor and sometimes as a non-competitive inhibitor. The aim of this study was to investigate the pharmacological mechanism of ACE inhibition of green tea and Rooibos by enzyme kinetics, and to compare this with enalaprilat. A Michaelis–Menten kinetics and Lineweaver–Burk graph showed mean values of $V_{max} = 3.73\text{mM}$ and $K_m = 0.71\text{mM}$ for green tea, of $V_{max} = 6.76\text{mM}$ and $K_m = 0.78\text{mM}$ for Rooibos, of $V_{max} = 12.54\text{mM}$ and $K_m = 2.77\text{mM}$ for enalaprilat, and of $V_{max} = 51.33\text{mM}$ and $K_m = 9.22\text{mM}$ for the PBS control. Incubating serum with green tea or Rooibos saturated with zinc chloride did not change the inhibitory effect. Enalaprilat preincubated with zinc chloride showed a decrease in the inhibitory effect. In conclusion, green tea, Rooibos and enalaprilat seem to inhibit ACE activity using a mixed inhibitor mechanism. Copyright © 2011 John Wiley & Sons, Ltd.