Oxidation of phenolic compounds from Aloe barbadensis by peroxidase activity: Possible involvement in defence reactions.

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Abstract:
Sephadex LH-20 chromatography and reverse phase-high performance liquid chromatography (RP-HPLC) have been combined to analyse different phenolics in Aloe barbadensis Mill. Among them, a new chromone peak was found. Whole phenolics, and anthrone and chromone fractions were assayed as substrates of endogenous peroxidases (donor:hydrogen - peroxide oxidoreductase, EC 1.11.1.7) and polyphenol oxidases (1,2-benzenediol:oxygen oxidoreductase, EC 1.10.3.1) by following the disappearance of specific RP-HPLC peaks after appropriate incubations in the presence and in absence of H2O2. Chromones, but not anthrones, were found to be good substrates of peroxidases. It is postulated that peroxidase oxidation of chromones may have a protective and sealing effect against infection after wounding. Polyphenol oxidases may have a secondary, if any, effect.