Activity staining of plasma amine oxidase after polyacrylamide gel electrophoresis and its application to natural inhibitor screening

Mei-Hsien Lee; Mao-Te Chuang; Wen-Chi Hou

Abstract

Plasma amine oxidase (plasma AO, EC 1.4.3.6) is a copper-containing AO which converts benzylamine (BZ) to benzaldehyde, generating hydrogen peroxide and ammonia. The peroxidase was used as an ancillary enzyme to couple hydrogen peroxide to 3-amino-9-ethylcarbazole (AEC) to achieve plasma AO activity after electrophoresis on native polyacrylamide gels. It was confirmed that plasma AO is inhibited by semicarbazide but neither by clorgyline nor by deprenyl. We also used plasma AO activity staining for the screening of natural inhibitors. This fast and sensitive method can be used in the process of plasma AO purification, characterization, and inhibitor screening.