

Enantioselective Hydrolysis of Bromo- and Methoxy-Substituted 1-Phenylethanol Acetates Using Carrot and Celeriac Enzymatic Systems

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Enantioselective hydrolysis of bromo- and methoxy-substituted 1-phenylethanol acetates was conducted using comminuted carrot (*Daucus carota* L.) and celeriac (*Apium graveolens* L. var. *rapaceum*) roots. Hydrolysis of the acetates led to alcohols, preferentially to *R*-(+)-enantiomers. Efficiencies of both reactions – hydrolysis of the acetates with an electron-donating methoxy group and oxidation of the resulting alcohols – increased in the following order: *ortho* < *meta* < *para*. The presence of an electron-withdrawing bromine atom in the aromatic ring had the opposite effect. Oxidation of alcohols with both types of substituents in the aromatic ring showed that location of a substituent had stronger impact on the oxidation rate than its electronic properties.

Key words: Vegetable, Hydrolysis, Oxidation