

Pectate Hydrolases of Parsley (*Petroselinum crispum*) Roots

Dana Flodrová^a, Mária Dzúrová^b, Desana Lišková^b, Fairouz Ait Mohand^b,
Danica Mislovičová^b, Anna Malovíková^b, Zdeněk Voburka^c, Jiřina Omelková^a,
and Eva Stratilová^{b,*}

^a Faculty of Chemistry, Technical University of Brno, Purkyňova 118, CZ-612 00 Brno, Czech Republic

^b Institute of Chemistry, Slovak Academy of Sciences, Dúbravská cesta 9, SK-845 38 Bratislava, Slovakia. Fax: +421-2-5941 02 22. E-mail: chemevi@savba.sk

^c Institute of Organic Chemistry and Biochemistry, Academy of Sciences of Czech Republic, Flemingovo nám. 2, CZ-166 10 Praha, Czech Republic

* Author for correspondence and reprint requests

Z. Naturforsch. **62c**, 382–388 (2007); received December 12, 2006/January 11, 2007

The presence of various enzyme forms with terminal action pattern on pectate was evaluated in a protein mixture obtained from parsley roots. Enzymes found in the soluble fraction of roots (juice) were purified to homogeneity according to SDS-PAGE, partially separated by preparative isoelectric focusing and characterized. Three forms with pH optima 3.6, 4.2 and 4.6 clearly preferred substrates with a lower degree of polymerization (oligogalacturonates) while the form with pH optimum 5.2 was a typical exopolygalacturonase [EC 3. 2.1.67] with relatively fast cleavage of polymeric substrate. The forms with pH optima 3.6, 4.2 and 5.2 were released from the pulp, too. The form from the pulp with pH optimum 4.6 preferred higher oligogalacturonates and was not described in plants previously. The production of individual forms in roots was compared with that produced by root cells cultivated on solid medium and in liquid one.

Key words: Exopolygalacturonase, Oligogalacturonate Hydrolase, Cell Suspension