

**P16** CAPILARY ZONE ELECTROPHORESIS OF HYDROXYNITRILE LYASE  
AND  $\beta$ -GLUCOSIDASE FROM SWEET ALMOND

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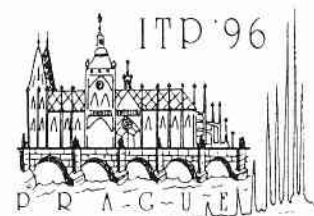
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The extract from defatted almond meal, called emulsin, contains  $\beta$ glucosidases and oxynitrilases. Oxynitrilase catalyzes the formation of a chemical equilibrium between  $\alpha$ -hydroxynitriles and their corresponding aldehydes and HCN. In the presence of an excess of HCN this enzyme catalyzes the stereospecific addition of HCN to a number of aldehydes to form optically active  $\alpha$ -hydroxynitriles which are useful building blocks for asymmetric organic synthesis. Glycosylhydrolases usually catalyze the stereospecific hydrolysis of glycosidic bonds but they can also be used for the formation of glycosidic bonds by means of two processes: reverse hydrolysis and transglycosylation. Both enzymes are currently used in our laboratory for synthetic applications. In particular we use the  $\beta$ -glucosidase from almond to glycosylate various alcohol bearing allyl functionalities with the aim of producing glycosyl monomers which produce hydrophilic polymer coatings and DNA separation matrices. The isolation of the enzymes from sweet almonds requires a fractional ammonium sulphate precipitation followed by ion exchange chromatography on a DEAE cellulose. Capillary zone electrophoresis provided an excellent tool for the analysis of enzymes in the different purification steps. The separation of the enzyme isoforms was achieved in capillary columns coated with polyacryloylaminoethoxyethanol (polyAAEE) at different pH values.

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