P16 CAPILARY ZONE ELECTROPHORESIS OF HYDROXYNITRILE LYASE AND ß–GLUCOSIDASE FROM SWEET ALMOND

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The extract from defatted almond meal, called emulsin, contains ßglucosidases and oxynitrilases. Oxynitrilase catalyzes the formation of a chemical equilibrium between α–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 nuber of aldehydes to form optically active α–hydroxynitriles which are usefull building blocks for asimetric 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 process : reverse hydrolysis and transglycosilation. Both enzynes are currently used in our laboratory for synthetic applications. In particular we use the ß–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 chromatigraphy 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 isoformes was achieved in capillary columns coated with polyacryolylaminoethoxyethanol (polyAAEE) at different pH values.

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