

Properties of two apyrases from *Solanum tuberosum*

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Two homogeneous isoenzymes of apyrase from Pimpernel and Desirée varieties of *Solanum tuberosum* were obtained by affinity chromatography on agarose-Cibacron Blue or agarose-ATP-phosphonate columns. Both enzymes split POP bonds of organic and inorganic di- and triphosphates. The ratio of ATPase/ADPase is different for the two apyrases: 10 for Pimpernel and 1 for Desirée. All these activities require bivalent metals. Both isoapyrases have the same MW (49 000) but differ in their pI (8.74 for Pimpernel and 6.69 for Desirée). The optimum pH of hydrolysis of organic di- and triphosphates is 6 (except for Pimpernel ADPase) and 5 for inorganic substrates. Chemical modification of tryptophan, tyrosine, arginine and carboxylic residues decreased all enzymic activities of both enzymes. Protection by substrates and inactivation rates of the individual activities are different for each isoenzyme. © 1982.