

Comparative subcellular distribution of apyrase from animal and plant sources.

Characterization of microsomal apyrase

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1. 1. Apyrase (ATP: diphosphohydrolase) has been found in the microsomal fraction of rat salivary gland, mammary gland and uterus. 2. 2. This enzyme, already described in plant tissues, is mainly present as a soluble polypeptide in tubers of *Solanum tuberosum*. 3. 3. A fraction of this enzyme is associated with the microsomal fraction with a higher specific activity than the soluble one, for either ATP or ADP as substrate. 4. 4. Apyrase bound to microsomes from rat and potato tissues was characterized in its substrate specificity and effect of inhibitors. 5. 5. The K_m values for ATP and ADP, optimum pH and metal ion requirement were determined. 6. 6. A characteristic common to the microsomal and soluble apyrases is the stimulatory effect of a potato activator protein of soluble plant apyrase. 7. 7. The microsomal-bound apyrase from rat and potato tissues were solubilized and subjected to size-exclusion chromatography. 8. 8. The mammary gland and salivary gland apyrases eluted as molecul