

# Comparative steady-state fluorescence studies of cytosolic rat liver (GTP), *Saccharomyces cerevisiae* (ATP) and *Escherichia coli* (ATP) phosphoenolpyruvate carboxykinases

Encinas, M. Victoria

Rojas, M. Cecilia

Goldie, Hughes

Cardemil, Emilio

Two members of the ATP-dependent class of phosphoenolpyruvate (PEP) carboxykinases (*Saccharomyces cerevisiae* and *Escherichia coli* PEP carboxykinase), and one member of the GTP-dependent class (the cytosolic rat liver enzyme) have been comparatively analyzed by taking advantage of their intrinsic fluorescence. The *S. cerevisiae* and the rat liver enzymes show intrinsic fluorescence with a maximum emission characteristic of moderately buried tryptophan residues, while the *E. coli* carboxykinase shows somewhat more average exposure for these fluorophores. The fluorescence of the three proteins was similarly quenched by the polar compound acrylamide, but differences were observed for the ionic quencher iodide. For the ATP-dependent enzymes, these last experiments indicate more exposure to the aqueous media of the tryptophan population of the *E. coli* than of the *S. cerevisiae* enzyme. The effect of nucleotides on the emission intensities and quenching efficiencies revealed substrate-induced co