

# In vivo measurements of control coefficients for hexokinase and glucose-6-phosphate dehydrogenase in *Xenopus laevis* oocytes

Ureta, Tito

Fernández, Waldy Y.

Centelles, Josep J.

Cascante, Marta

Hexokinase and glucose-6-phosphate dehydrogenase activities were increased in *Xenopus laevis* oocytes by microinjection of commercial pure enzymes. The effect of increased fractional activities on glycogen synthesis or on the production of  $^{14}\text{CO}_2$  (the oxidative portion of the pentose phosphate pathway) was investigated by microinjection of  $[1-^{14}\text{C}]$ glucose and measurements of the radioactivity in glycogen and  $\text{CO}_2$ . Control coefficients calculated from the data show that hexokinase plays an important role in the control of glycogen synthesis (control coefficient=0.7) but its influence on the control of the pentose phosphate pathway is almost nil (control coefficient=-0.01). Glucose-6-phosphate dehydrogenase injections did not affect the production of  $^{14}\text{CO}_2$  by the pentose phosphate pathway, indicating that other factors control the operation of this pathway. In addition, an almost null control of this enzyme on glycogen synthesis flux was observed.

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