Abstract

The kinetics of glutamate influx and efflux on the glutamate-hydroxyl carrier have been measured and compared in rat liver mitochondria. At pH 7.4 and 25 degrees C, the Michaelis constants and V'max values were in agreement with the Haldane relationship when the alpha pH was accounted for. The Km values for glutamate influx and aspartate efflux on the glutamate-aspartate translocator are also reported. Extrapolation of the maximum velocities to 37 degrees and the intact liver provide values of 5.6 and 2.4 mmol/g dry wt/hr for glutamate influx and efflux, respectively, on the glutamate-aspartate translocator. Both translocators operate by a sequential mechanism with formation of a ternary complex. Their possible regulatory role in urea synthesis by liver is assessed