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Glutamine-synthesizing activity in lungs of fed, starved, acidotic, diabetic, injured and septic rats.

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Abstract

The maximal catalytic activity of glutamine synthetase was measured in lung homogenates of the rat (being 5.46 +/- 0.29 μ mol/min per g wet wt. or 31.70 +/- 2.62 nmol/min per mg of protein at 37 degrees C, in fed animals). The activity is similar to that of liver, but 16-fold higher than that in quadriceps muscles. Chronic (NH₄Cl-induced) or acute (HCl-induced) metabolic acidosis had no effects on enzyme activity, but there was a marked increase in the activity of glutamine synthetase in starved (30-40%), streptozotocin-diabetic (17%), dexamethasone-treated (18-22%), laparotomized (25-27%) and septic rats (24-45%).