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Effect of fluoroacetate on amino acid metabolism /  
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EFFECT OF FLUOROACETATE ON AMINO ACID METABOLISM IN BRAIN. W. J. Nicklas\*, D. D. Clarke and S. Berl. Chem. Dept., Fordham Univ. and Col. of Physicians and Surgeons, Columbia Univ., New York, N. Y.

Guinea pig brain cortex slices incubated in media containing U-<sup>14</sup>C-aspartate or glutamate (GA) (J. Neurochem. in press) form glutamine (GM) of relative specific activity (RSA) > 1 (GA=1). In the presence of 10<sup>-5</sup>M fluoroacetate (FA) the RSA of GM decreased to values considerably < 1 without any changes in levels of amino acids; the % of label in GA doubled while that in GM decreased correspondingly. Similar results were obtained with l-<sup>14</sup>C-acetate as tracer in vivo (mice) and in vitro. RSA's of GM > 1 have been explained by the compartmentation of GA in cerebral cortex. Consequently the effect of GA may be explained by an inhibition of the flow of metabolites through that pool of GA used preferentially for GM synthesis. This is consistent with the concept of the existence, in brain, of more than one citric acid cycle, one of which is capable of activating acetate much more readily than the other(s) and hence more subject to inhibition by FA. Supported by grants from NINDB and the Cerebral Palsy Foundation.

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