

## **Determination of intracellular hexokinase activity of rat ascites hepatoma AH109A, rat brain, liver and erythrocyte by using HPLC**

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### **Abstract**

Intracellular hexokinase activities of tumor (rat ascites hepatoma AH109A), rat brain, liver and erythrocytes were determined *in vitro* by simultaneous measurement of both <sup>3</sup>H-FDG and <sup>3</sup>H-FDG6P using reversed phase HPLC with an analytical column of Asahipak NH2P-50 4E. Fractions eluted from HPLC were collected and their <sup>3</sup>H activities were determined by liquid scintillation counting. The fractions clearly separated both <sup>3</sup>H-FDG and <sup>3</sup>H-FDG6P and this enabled to measure the time course of <sup>3</sup>H-FDG6P production from <sup>3</sup>H-FDG in the homogenized samples. The intracellular hexokinase activities (the ability to produce FDG6P from FDG per amount of protein) were the highest in AH109A of both from ascites and nodules, and in brain. The liver and the erythrocytes were however, the lower activities. Since this procedure allowed determining the hexokinase activity from tissue including ascites and blood, it may be useful for the laboratory screening for the hexokinase activity, especially for biopsy samples to rule in/out its malignancy.