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Dear Dr. Sokoloff

I was very glad to see you again in NIH. I enjoyed your clear lectures very much. Since I returned to Japan, I have been looking for laboratory for Radio-isotope use because in my hospital we are prohibited from using RI for animals. But, I will slove this problem soon.

I am always thinking about the equation to get Vm* and KT*. You gave me a equation to solve Vm* and KT* for methyl glucose as follows.

$$m\,MG = \frac{K\,MG}{K\,IAP} \times \frac{\lambda\,MG}{\lambda\,MG} \qquad \cdots\cdots\cdots ①$$

$$m\,MG = 1 - e^{\frac{-(PS^*)MG}{F}} \qquad \cdots\cdots\cdots ②$$

$$PS^* \cdot Cp^* = Vm^* - PS^* \left(1 + \frac{Cp}{KT}\right) \times KT^* \cdot TRUE \cdot MG \qquad \cdots\cdots\cdots ③$$

I have several question about equation.

Q1. To get Vm* and KT*. We need PS* values at different plasma glucose conecentration. To get diffusion limitation of methyl glucose(m MG), we also need information about λ MG and λ IAP according to Eq①. I know λ MG is different at different plasma glucose concentration. How about λ IAP? Is it different at different plasma glucose concentration?

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Do I need data of λ IAP at different plasma glucose concentrations by different animal group?

Q2. Eq③ is final equation to get Vm* and KT*. I know KT for glucose is about 6.8. However, is KT same value at different plasma glucose concentration and different brain structures?
In pathological condition, I think KT should change. So, according to Eq③, it is impossible to get Vm* and KT* without information of KT.
What do you think about that?
I know you are extremely busy person. But, could you answer my questions?

I am looking forward to seeing in Sendai next year. I will attend reunion party in Sendai.

Sincerely yours

Kentaro Mori

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