

Anatomy and Physiology Reading Questions Hilgemann 2004

Written responses due in lab **September 10**. Your answers **must be** typewritten. Use your own words to answer these questions. Do not simply quote from the article. This is not a group activity, so answer these questions on your own.

1. What does it mean to “inactivate” a channel protein? What is the ball-and-chain mechanism for inactivating voltage-gated potassium channels?
2. The article refers to the amino-terminal domain of the potassium channel. The term “domain” simply refers to a specific region of a protein. But what defines the “amino-terminal” end of a protein? (hint: the answer to this question will not be found in the article. You will need to refer to your textbook or any other text about proteins.)
3. What role does PIP_2 play in controlling the function of Kv channels?
4. What does it mean that AA (arachidonic acid) is an antagonist to PIP_2 ?
5. The author states that there is a gap between “molecular mechanism and physiology”. He suggests two ways to test whether PIP_2 and Kv actually interact in intact cells. Describe one of these possible experiments.

Note: Don't worry if you cannot understand every detail of this article. Try to make sense of the sections relevant to the questions above.