

Anatomy and Physiology Reading Assignment

Due in lecture Jan 25, 2010

Bradbury 2004

Download the above article from the course website and answer the following questions. Bring your computer printed answers to lecture and be ready to discuss them. Use your own words and do not use jargon that you do not understand:

1. Why is it important that we be able to detect each of the five taste qualities?
2. Zuker found that each bitter taste receptor cell expresses all of the bitter receptor proteins. Previous work suggested that each bitter taste receptor cell expressed only one type of bitter receptor protein. What is the functional consequence of expressing all of them instead of just one type? Why does Zuker think that expressing all of the receptor types makes sense?
3. There are many protein receptor types for bitter tastes, but very few for sweet tastes. Give a possible explanation for this observation?
4. Salty and sour receptors seem to use a different strategy from bitter, sweet and umami receptors. Explain this difference.
5. Explain the differences between the “labeled-line” and “cross-fiber” models for taste-coding. Describe one piece of data that supports the “labeled-line” model.
6. Find one paper published in this field since 2004. You can use ISI Citation Database or Pubmed for this search. Both of these search engines are linked to the course webpage. Find a paper with an understandable abstract, and give a two to three-sentence summary of that abstract (use your own words). Attach a printout of the first page of the paper, or at least of the abstract, to this assignment.