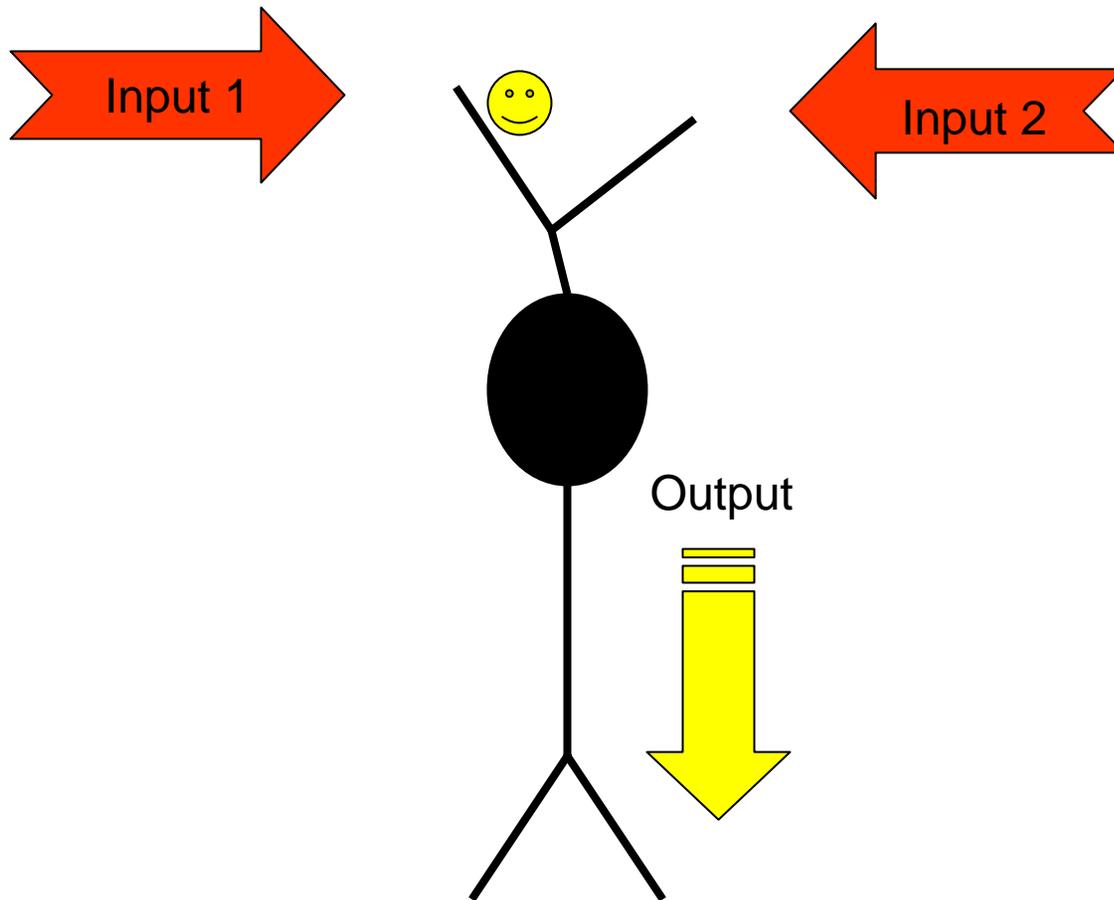# Synaptic tagging.
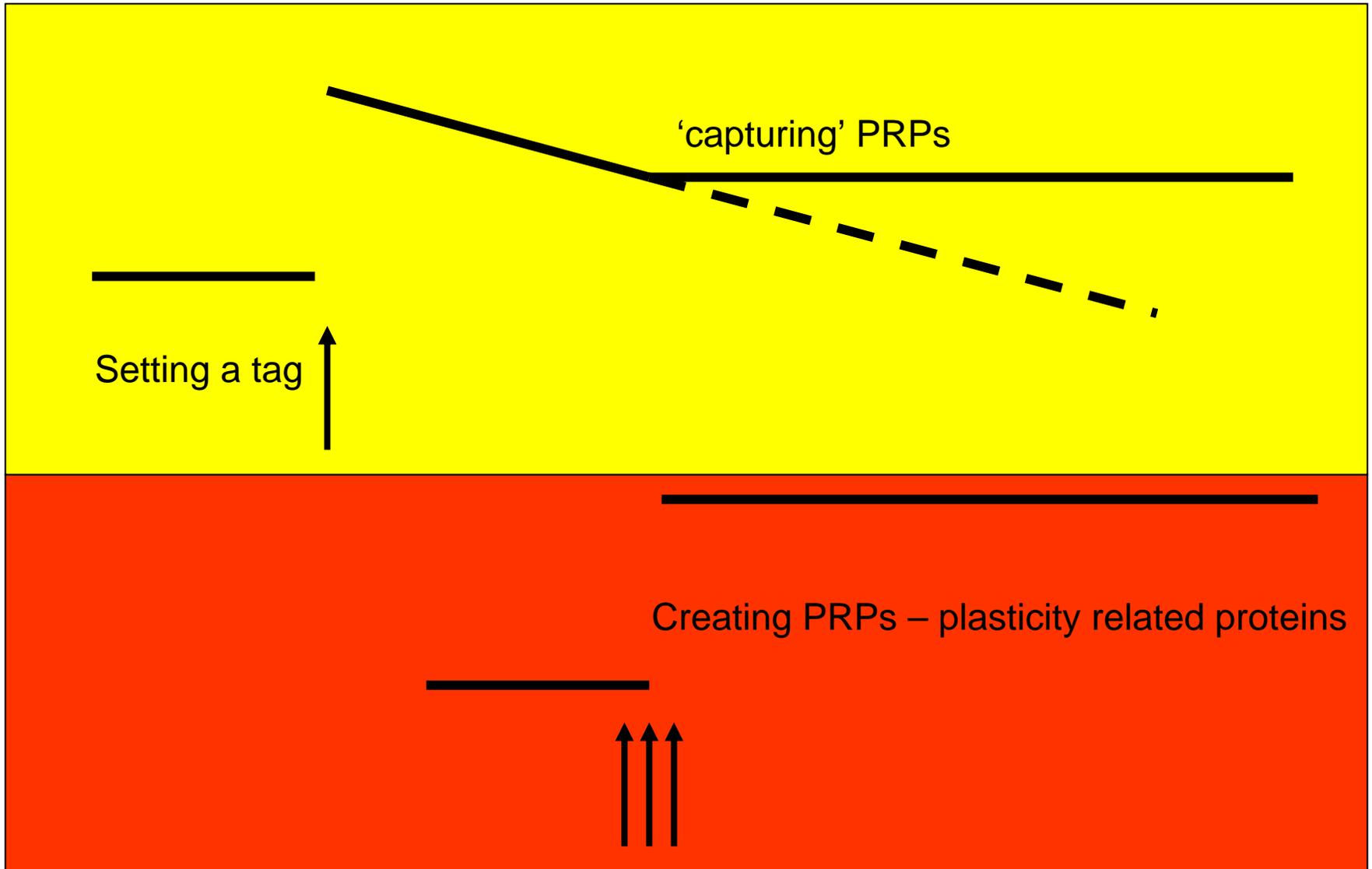
# Tagging
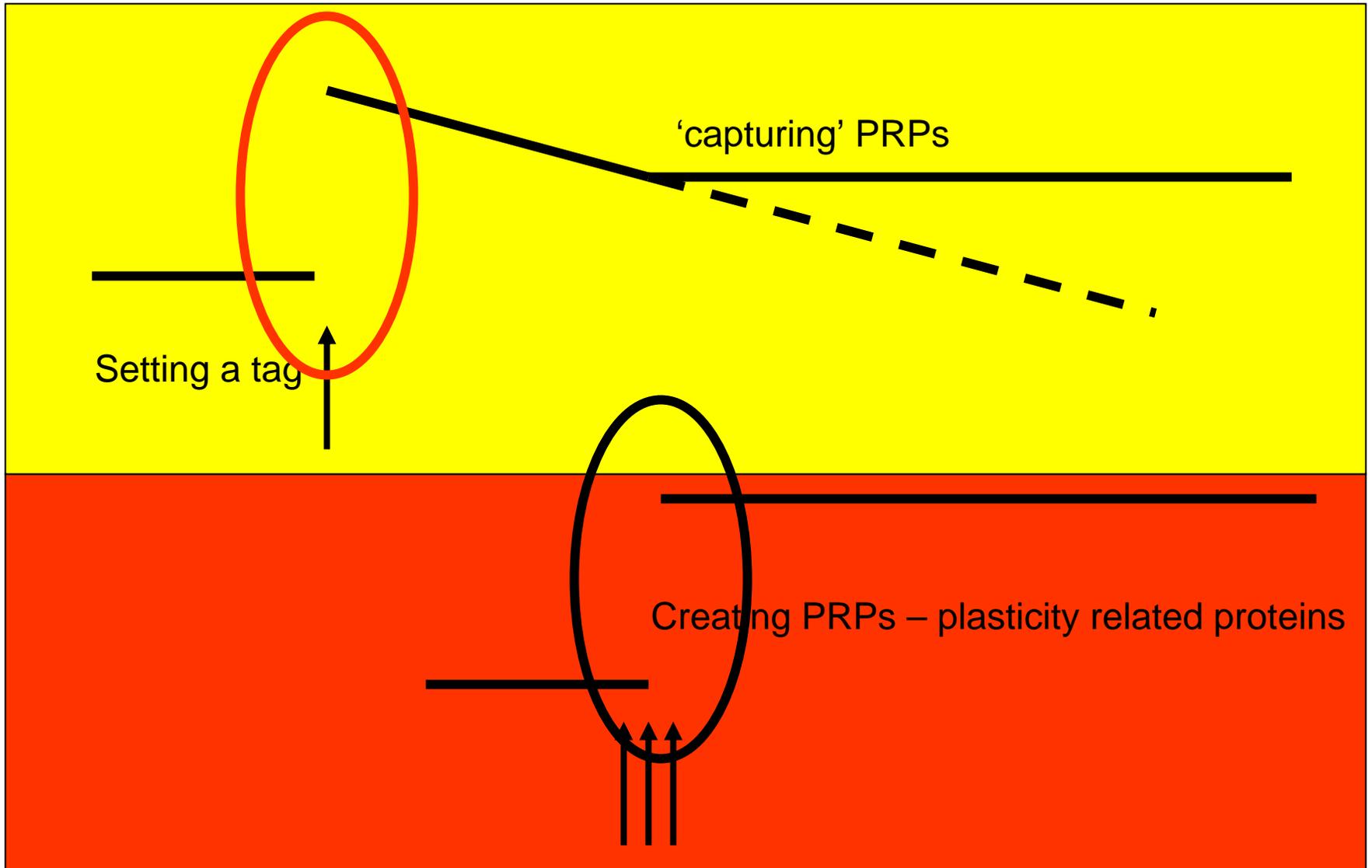
# How do you show that a 'tag' molecule exists?
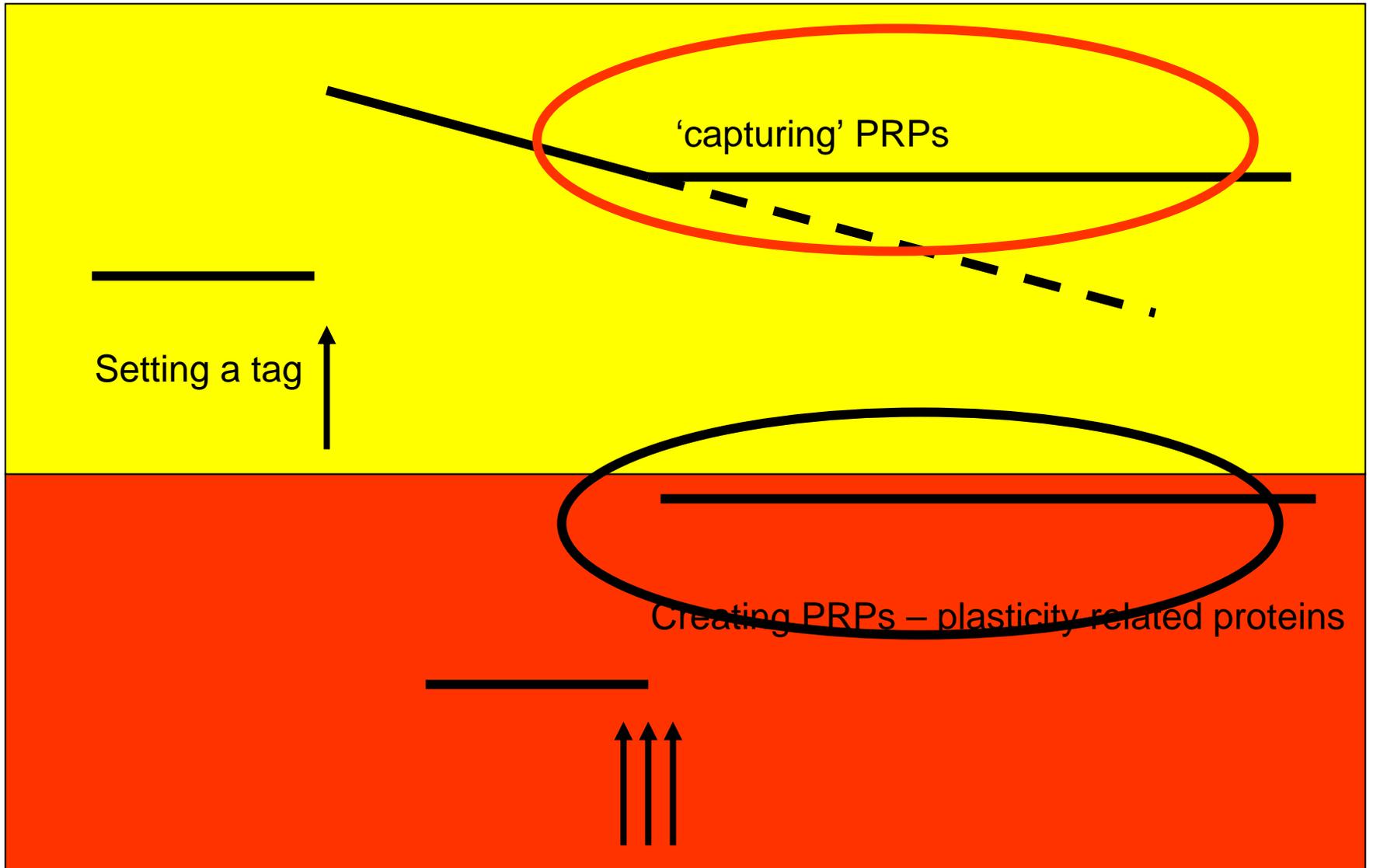
# Cross tagging experiments were designed to show that there is a 'tag'.

'capturing' PRPs

Setting a tag

Creating PRPs – plasticity related proteins

# Induction



'capturing' PRPs

Setting a tag

Creating PRPs – plasticity related proteins

# Maintenance

# Today's papers

# Assignment

- This week's papers present a theoretical framework called 'synaptic tagging' which was created for understanding molecular events underlying memory.

- One of the issues addressed by 'tagging' is: How does the molecular signal being amplified in the nucleus know which synapse to go back to?

# Assignment (2)

- Write a full and detailed description of the events underlying LTP as we have discussed them throughout the course.

- This should take about a full page.

- A detailed description including all the relevant material we discussed will be sufficient to earn a 'pass' grade.

# Assignment(3)

- After describing LTP, explain what is the conceptual problem that required the hypothesis of 'synaptic tagging'.

- A full description of the problem (about ½ a page), will earn you my respect.

# Assignment (4)

- Having explained the problem, try to think of an hypothesis that will explain the phenomenon of synapse specific potentiation.
- Your hypothesis could include elements of 'synaptic tagging' theory.
- Design an experiment that will test your hypothesis and discuss the potential results and their meaning.
- This part of the assignment should take a full page.
- Completing this part of the assignment will earn you the right to expect me to write a good recommendation for you for whatever you choose to do next in your career.

# Note

- If you complete this assignment fully but have neglected much of the other course work without discussing it with me, that may be reflected in the recommendation I would write.

# Next week's papers

- More about place cells
- 'Grid cells' in the Entorhinal cortex.

# Entorhinal cortex is upstream to the hippocampus

# Questions for next week

- Oler and Markus: What parameter of place field representation deteriorates with age?

- Hafting et al.: Which characteristic of Grid cells changes in a dorsal/ ventral gradient?