Massachusetts Institute of Technology Department of Biology 7.22, Fall 2005 - Developmental Biology Instructors: Professor Hazel Sive, Professor Martha Constantine-Paton

> 7.22/ 7.72 Self Quiz Mon Sep 26, 2005

- 1. Class challenge 1: UV irradiation prevents microtubule polymerization. What is the target of UV?
- 2. Class challenge 2: In general terms, what are "antisense" techniques?
- 3. Class challenge 3: Formation of the brain (anterior) seems to involve many inhibitors. Any ideas why this might be so? Consider that the forebrain may have evolved after the hindbrain.
- 4. Distinguish the concepts of "determination" and "differentiation"
- 5. The typical four part signaling pathway includes: ligand, receptor, connectors, targets

For the Wnt pathway, which component corresponds to which part: Frizzled, b-catenin, Wnt, siamois?

For the TGFb pathway, which corresponds to which part: Smads, activin, nodal?