

7.22/ 7.72 Self quiz- answers
Wed Oct 5, 2005

1. In developmental biology, what is meant by the term “axis”?

A set of positional coordinates, that define the relative positions of a specific set of tissues or organs within the embryo.

2. Consider these terms in the context of development and evolution.

What is a homolog?

A DNA sequence in one organism that is similar to that in another organism, and is believed to be evolutionary related.

What is a paralog?

A DNA sequence related to another in the same species, that is believed to have formed by duplication of an ancestral copy.

What is an ortholog?

A DNA sequence in one organism corresponding to precisely the same functional sequence in another organism. That is, orthologs are very closely related homologs.

What is an analog?

Something with a similar function to something else, but that may be unrelated. For example, a bat wing and insect wing. Not usually used in an evolutionary sense, although that is debatable.

3. When thinking about experimental design, what is a control?

What is a positive control?

What is a negative control?

Consider the example of in situ hybridization (what is this?) for the gene *cyp26*. Describe a positive and negative control for this analysis.