


Bio 115 Cells & Evolution of Life

Cell Differentiation and Morphogenesis

An Overview of Cell Differentiation and Morphogenesis




University of Idaho

Start Audio Lecture!

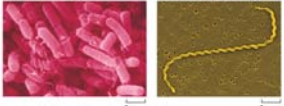
1

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Cell Differentiation and Morphogenesis



(b) *Escherichia coli* (c) *Leptospira interrogans*



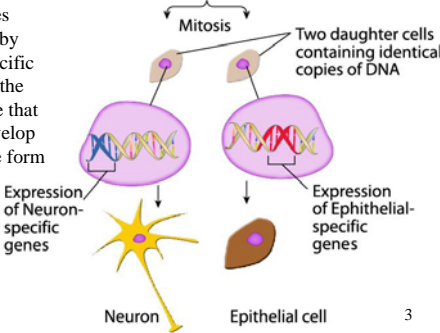
Rod-shaped 1 μm Spiral-shaped 1 μm

2

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Cell Differentiation

A cell becomes differentiated by producing specific proteins from the DNA template that allow it to develop into its mature form



Mitosis

Two daughter cells containing identical copies of DNA

Expression of Neuron-specific genes

Neuron

Expression of Epithelial-specific genes

Epithelial cell

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Cell Signaling

Example of differentiated cells receiving and responding to signals

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Regulatory Cascades

Genes that control development are organized into hierarchical regulatory cascades

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Commonalities Abound in Development

Drosophila melanogaster

Even these very different organisms have similar developmental processes and controls

Arabidopsis

Homo sapiens

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