

4/7/08

OCN 201 Biology Lecture 1: **Origin and Evolution of Life**

I. What is Life?

A. Some general properties of life

B. Some common properties of life on earth TODAY

C. Common Macromolecules and their roles:

Sugars

DNA

RNA

Protein

Lipids

D. Five most common elements in living organisms (in general):

- 1.
- 2.
- 3.
- 4.
- 5.

II. Three Hypotheses Concerning the Origin of Life on Earth

A.

B.

C.

III. Origin of the Building Blocks of Life

- A. Laboratory Experiments (e.g., experiment)
- B. Examination of Meteorites & Comets (e.g., and)
- C. What do these indicate?

IV. From Molecules to Life

- A. Bridging the gap: organic molecules > ? > living cells
- B. Living cells are complex systems
- C. The “**Central Dogma**”:
- D. Which part came first?
- E. Important discovery about RNA:

VI. Common Themes in Origin of Life Scenarios

- A. RNA came before DNA
- B. Life probably originated where?
- C. No matter how it may arise any self-replicating entity is immediately subjected to **natural selection**