

## Appendix 4. Questions for Cholesterol Evaluation

### Advanced Cell Biology (BIO315HF) Professor Danton H. O'Day Animation versus Graphics Evaluation: Cholesterol Uptake

#### Part II. Specific Questions. Circle the correct answer...

1. Cholesterol is taken into cells as,
  - a. Low definition particles
  - b. Low density lipophilic particles
  - c. Low density lipoprotein particles
  - d. Low definition lipophilic particles
  - d. LDH particles
2. Even before any receptors bind to the cholesterol containing particles,
  - a. Clathrin molecules are present in the cell cytoplasm
  - b. Clathrin molecules are bound to the cell membrane
  - c. Adaptor molecules are bound to the cell membrane
  - d. Adaptor molecules are bound to them waiting for a conformational change
  - d. The receptors have hydrolyzed ATP to provide energy for the process
3. After receptors bind to the cholesterol containing particles,
  - a. Clathrin molecules bind followed by adaptor protein binding
  - b. Clathrin molecules bind followed by adaptor protein release
  - c. Adaptor molecules bind followed by clathrin protein release
  - d. Adaptor molecules bind followed by clathrin protein binding
  - d. None of the above
4. After a single receptor binds to a cholesterol containing particle,
  - a. A conformational change in the receptor complex allows the subsequent binding of other proteins
  - b. A conformational change in the receptor complex causes the release of the cholesterol particles
  - c. A conformational change in the clathrin complex allows peptide binding
  - d. A conformational change in the cholesterol particle allows it to bind clathrin
  - e. None of the above
5. The formation of a large number of receptor-clathrin protein complexes,
  - a. Leads to the formation of a coded pit and then a coded vesicle
  - b. Leads to the formation of a coded vesicle and then a coded pit
  - c. Leads to the formation of a coated vesicle and then a coated pit
  - d. Leads to the formation of a coated pit and then a coded vesicle
  - e. None of the above
6. The formation of the transport vesicle that carries the capture cholesterol particle to lysosomes involves
  - a. The polymerization of the receptor-cholesterol complexes into a tightly formed constricted coated pit
  - b. The depolymerization of the clathrin-adaptor proteins into constricting entities
  - c. The contractility of dynamin proteins to constrict the cell membrane
  - d. All of the above

d. None of the above

7. The whole process of cholesterol particle uptake is best describe as a process of

- a. Receptor-modulated endocytosis
- b. Receptor-dependent endocytosis
- c. Receptor-mediated endocytosis
- d. Receptor-medium endocytosis
- e. Receptor-moderated endocytosis

8. The whole process of cholesterol particle uptake involves

- a. The formation of protein complexes
- b. GTP-mediated hydrolysis of membrane components
- c. Several changes in protein conformation
- d. Both a and c are correct
- e. Both a and b are correct

9. Vesicle formation involves a dynamic process called

- a. Fission
- b. Sizing
- c. Scission
- d. Cessation
- e. Termination

10. Cholesterol will be freed from the cholesterol particles

- a. After uncoating of the coated vesicles and fusion with lysosomes
- b. After release of LDL from the coated vesicles and fusion with lysosomes
- c. After coating of the uncoated vesicles and fusion with pre-lysosomes
- d. After uncoating of the lysosomes followed and fusion with the endocytotic vesicle
- e. After removal of clathrin from lysosomes and subsequent fusion