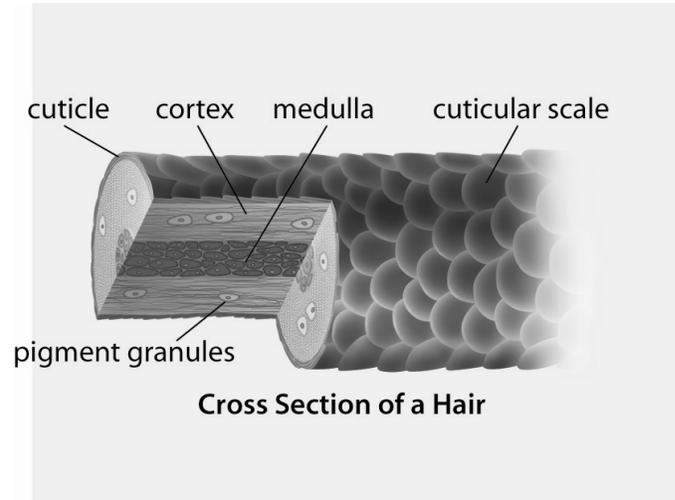


## Thought Lab 4.4: Homologies of Hair

**Purpose:** Investigate variations in the functions of mammalian hair.

### Procedure

1. Work in small groups of three or four.
2. Each person in your group should choose a different type of mammalian hair from the following list:
  - a) the stout, strong hairs of a porcupine
  - b) the dense underfur, or underhairs, of a sea otter
  - c) the vibrissae (“whiskers”) of a cat
  - d) the thick mane of a lion
  - e) the long, thick hair of a woolly mammoth
  - f) the horn of a rhinoceros, which is made of densely packed hair
  - g) the “scales” of a pangolin, which are modified hairs
  - h) the soft, fluffy qiviut (fur) of a muskox
3. Conduct research to investigate the structure of the hair you have chosen. Research how the animal’s lifestyle and habitat might explain the particular function(s) of its hair.



### Analysis

1. Based on the information you collected and your understanding of natural selection,
  - a) hypothesize how the structure of the hair is related to abiotic conditions in an animal’s environment
  - b) write a hypothesis stating how the variations might have arisen from the basic hair structure of a common mammalian ancestor
2. Present your findings to the others in your group in a written or oral report, a computer presentation, or another form that is easily shared.
3. Write a statement that describes one similarity and one difference in the adaptations of the hair studied by the members of your group.