

Thought Lab 5.3: The Effects of Metabolic Toxins on Cellular Respiration

Purpose: Investigate and report on metabolic toxins that affect the function of mitochondria.

Procedure

1. Choose one of the following metabolic toxins to investigate:
 - antimycin
 - cyanide
 - hydrogen sulfide
 - malonate
 - oligomycin
 - rotenone
 - arsenic
2. Find four different sources of information about your chosen metabolic toxin. Include information from two print sources and two electronic sources. Search for and collect the following information:
 - What are its physical properties?
 - When and why was it first developed and used?
 - How does it work? (That is, what is its effect on metabolism?)
 - How dangerous is it?
 - What, if any, evidence is there to link it to human disorders?
 - What, if any, antidotes or treatments for exposure are there?
3. Create a “Metabolic Toxin Profile” for the toxin you investigate. Your profile should include an introductory paragraph that summarizes the results of your research findings. Use appropriate headings to organize the information in your profile. Also include the sources of information you have used to construct your profile.
4. Share your profile with your classmates. As a class, decide on a suitable format in which to collect and present profiles of all the metabolic toxins investigated. (For example, you could construct a comparison chart or an electronic database.)

Analysis

1. Classify the metabolic toxin you investigated on the basis of the metabolic pathway it affects.

2. Consider each of the information resources you used to construct your profile.
 - a) How did you assess the accuracy of its information?

CHAPTER 5	Thought Lab 5.3: The Effects of Metabolic Toxins on Cellular Respiration (cont'd)	BLM 5.3.5
HANDOUT		

- b) How did you assess the validity (truth) of its information?
- c) Examine the profiles and information sources from other students who investigated the same metabolic toxin. Re-examine and assess the reliability of the information sources that you used to construct your profile.
- d) Which do you think provided information in which you have greater confidence: print sources or electronic sources? Give reasons to support your opinion.
- e) Are four sources of information sufficient for providing accurate and reliable information? Justify your answer.