CHEMICAL MICROBIOLOGY WITH PROFESSOR MOHAMMAD SEYEDSAYAMDOST

TALKING POINTS

KNOWLEDGE

1. What are natural products? List some of their functions.
2. What percentage of current clinical antibiotics are based on natural products?

COMPREHENSION

3. Why is it important to find new methods for discovering antibiotics?
4. Describe Mo's HiTES method and how it works.

ANALYSIS

5. How is a bacterium's natural environment, such as soil, different from the environment in which bacteria are grown in labs?
6. How might bacteria behave differently during lab experiments compared to in the wild?

SYNTHESIS

7. Why do you think antibiotics at low doses were best at triggering natural products in Mo's research?
8. Aside from pharmaceutical drugs, what other potential uses can you think of for natural products?

EVALUATION

9. What impact do you think Mo's research will have in combatting antibiotic resistance?

ACTIVITIES

1. One of the reasons why the development of antibiotics has been so slow over the last several decades is because it can be hard to secure research funding. Developing an antibiotic is a long, costly process and only a minority of promising drug candidates will successfully make it to the market. Often, funding companies are not willing to take the financial risk.

   Imagine you are a chemical microbiologist. Write a letter to a funding body persuading them to fund your research. You will need to explain what you are investigating, the methods you will use and the long-term implications of your research.

2. Presenting information clearly and concisely is a key skill for any scientific researcher. Write and deliver a 60 second speech summarising Mo's research and explaining why it is significant.

MORE RESOURCES

- Learn more about the research conducted in Mo's lab: **mo.princeton.edu**
- Mo explains more about cryptic natural products and his HiTES method in this video: **www.youtube.com/watch?v=h_osFj5iiQc**
- Kenzie, one of Mo's students, takes you on a tour of Mo's research lab at Princeton University so you can see where the science happens: **www.vimeo.com/511196370**
- In this interview, Mo discusses his research: **www.wnyc.org/story/meet-geniuses-10-23-20/**