

CHEMICAL BIOLOGY WITH DR GABRIELA CHIOSIS

TALKING POINTS

KNOWLEDGE

1. What is chemical biology?
2. What is a chaperone protein?

COMPREHENSION

3. What is the difference between the chaperone and epichaperome?
4. What is the difference between acute and chronic stress?

APPLICATION

5. How do you think Gabriela's future research might help Alzheimer's sufferers?
6. How do you think Gabriela's research into diagnostic tools helps her develop treatments?

ANALYSIS

7. Why does Gabriela recommend grouping cancer patients differently compared to conventional cancer trials? Can you foresee any potential difficulties in doing this?
8. Can you think of any other disciplines Gabriela may collaborate with, besides the ones she mentions?

EVALUATION

9. Gabriela mentions that there is a long time between the development of a treatment or diagnostic tool and it being used in clinics. Why do you think this process takes so long? Do you think that the process should be accelerated?

ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

1. Gabriela's lab is unusual in that it undertakes research into the mechanisms behind disease development and also develops treatments for this disease. She also runs a biotechnology company that helps promote the lab's findings. What ten questions would you ask her to learn more about how her lab operates and her career path?
2. Imagine that you are a successful chemical biologist thirty years from now, working in the same field as Gabriela. Write a blog-style article on how chemical biology has advanced in this time, and your contributions towards it. Think about possible innovations in the near future, and what these might mean for diagnosis and treatment of diseases.
3. Draw a diagram of how chemical probes detect the epichaperome.

MORE RESOURCES

- To find out more about the Gabriela Chiosis lab, there are two webpages you can visit:

www.mskcc.org/research/ski/labs/gabriela-chiosis
www.chiosislab.com/

- This article takes an in-depth look at Gabriela's work on Alzheimer's: journals.lww.com/neurotodayonline/fulltext/2020/03050/the_epichaperome_appears_early_in_alzheimer_s.6.aspx
- This video from eHowEducation explains the differences between chemical biology and biochemistry: www.youtube.com/watch?v=iqD6ki9xyhc