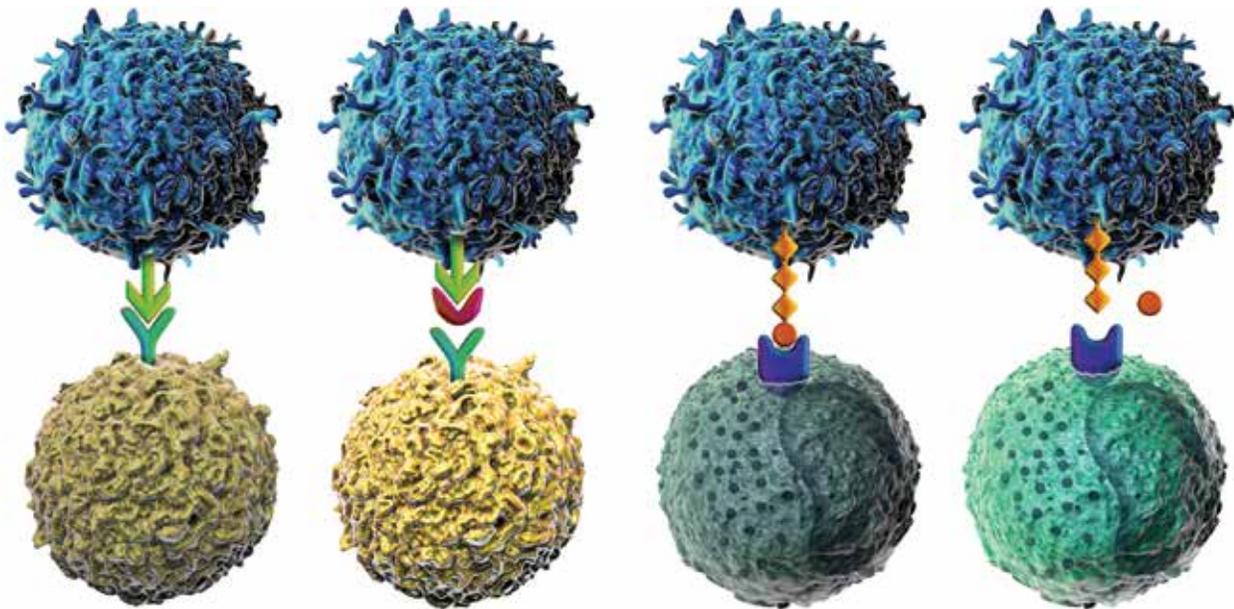


## Article-Based Observations

**Directions:** Read the article "[Cancer's sweet cloak](#)" and pay close attention to the diagram titled "Surface tension." Then answer these questions:

1. How does the author describe a cell's surface in the opening paragraphs? What is a role of cell-surface sugars and proteins as discussed in the article?
2. In terms of immune response, why are cell-surface molecules important? Why are some tumor cells not detected by the immune system?
3. How do protein-based immune therapies work? Why are other types of therapies being explored?
4. Chemist Carolyn Bertozzi of Stanford University studies cell-surface sugars. Why is it difficult to study sugars?
5. How does Carolyn Bertozzi hope to apply her surface-sugar research?
6. What is a macrophage? What have biologist Paul Crocker and his team discovered about macrophages?

7. Explain how sialic acids might serve as a cloak. How did scientists determine that tumors have this cloak?
8. What is Herceptin? How did Carolyn Bertozzi and her coworkers use it as part of an immune therapy plan?
9. Imagine that you are writing a newspaper headline for a story about the research described in this article. Your space is limited and you need to catch readers' attention. Write a short headline that summarizes the article.
10. Using the article as a reference, fully label the diagram below and summarize the immune therapies described by the diagram. Which therapies are already used and which are potential treatments?



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