

BIOCHEMISTRY

Miesfeld | McEvoy

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Smartwork5, W. W. Norton & Company's online tutorial and homework system. Each chapter includes a variety of interactive question types that include answer-specific feedback.



Animations of important biochemical processes and structures. The animations are available to be viewed independently, linked with the ebook, and integrated with questions in the Smartwork5 course.



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How biochemistry works and why it matters

More than any other textbook, *Biochemistry* promotes deep understanding of biochemical concepts through distinctive features:

- Highly readable chapters and the most thoughtful integration of the text with stunning graphics.
- A distinctive table of contents that helps students better see *how* biochemical processes work by emphasizing three big ideas:
 1. The interdependence of energy-conversion processes
 2. The role of signal transduction in metabolic regulation
 3. An integrated approach to biomolecular structure and function in the context of metabolic pathways
- Applications to everyday biochemistry that ensure students develop the most complete understanding of *why* biochemistry matters.

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About the cover

Ebola virus is a single-stranded RNA virus that infects primates, including humans. Infection can lead to lethal hemorrhagic fever in up to 90% of infected individuals. One of the only treatments for Ebola infection is infusion with neutralizing antibodies directed against the viral glycoprotein as a form of passive immunity.

The cover shows the molecular structure of the trimeric Ebola virus glycoprotein bound by three identical molecules of the human antibody KZ52. The viral glycoprotein is shown in red ribbon style, the heavy (green) and light (blue) chains of the human KZ52 antibody in ribbon style, and carbohydrate functional groups covalently attached to the viral glycoprotein in gray space-filling style.

In one of the most impressive demonstrations of teamwork and applied biochemical science in recent years, researchers were able to extend the molecular characterization of the KZ52 antibody to the formation of a protein complex between the virus and three different anti-Ebola human-mouse recombinant antibodies. The antibody cocktail, ZMapp, was used to successfully treat several people who were infected in the 2014 Ebola virus outbreak in western Africa.

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