

2. Ca^{2+} -ATPase is a membrane protein found in the sarcoplasmic reticulum. It is also known as the SERCA pump.

a. What is the sarcoplasmic reticulum? 2 pts.

b. What is the role of Ca^{2+} -ATPase in muscle contraction? 3 pts.

c. What type of membrane transport does Ca^{2+} -ATPase exhibit? 2 pts.

d. What is phospholambin and how does it influence the activity of the Ca^{2+} -ATPase pump? 4 pts.

e. Find an image that shows the molecular structure of this pump. Describe the basic features of this protein and include the image in your answer. 8 pts.

3. Another important protein of the SR membrane is the Ca^{2+} channel.
- What is the role of this channel? 3 pts.
 - What type of membrane transport does it exhibit? 2 pts.
 - Find an image that shows the molecular structure of the channel (not the one in my Powerpoint, though). Describe the basic features of this protein and include the image in your answer. 8 pts.
 - What is CardizemTM and how does it work? Give two heart conditions it is used to treat. 8 pts.