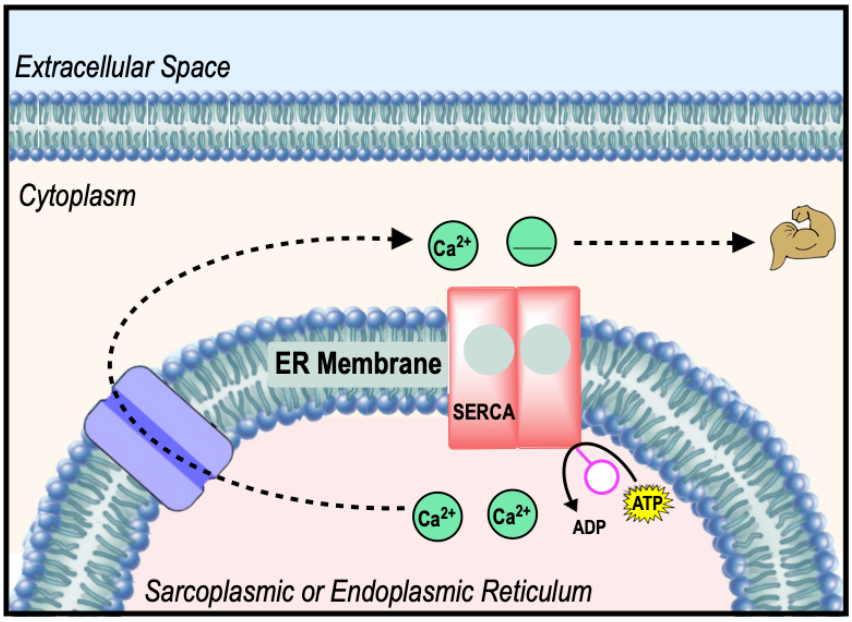
CONCEPT: SERCA: CALCIUM ION PUMP

●Another example of a P-type ATPase is the **S**arcoplasmic/**E**ndoplasmic **R**eticulum **C**a^{2+} **A**TPase (_____) Pump.

□ SERCA functions as a _____ to pump Ca^{2+} into the SR or ER (keeping *cytoplasmic* [Ca^{2+}] _____).

SERCA Pump



●When released into the cytoplasm, _____ acts as an *intracellular signal* in virtually all cells.

□ *Muscle Contraction*: occurs when nerve impulse induces *release* of Ca^{2+}, _____ cytoplasmic [Ca^{2+}].

□ *Muscle Relaxation*: occurs when SERCA pumps Ca^{2+} into SR, _____ cytoplasmic [Ca^{2+}].

PRACTICE: The calcium ATPase is an example of what type of transport model?

a) Facilitated diffusion via antiport.
b) Secondary active transport via symport.
c) Primary active uniport.
d) Simple diffusion.
e) Primary active symport.

PRACTICE: The calcium ATPase (SERCA) _____:

a) Is a V-type ATPase that transports calcium inside vesicles.
b) Is a P-type ATPase that maintains cytosolic [Ca^{2+}] around 0.1 μM & sarcoplasmic reticulum [Ca^{2+}] at 1.5 mM.
c) Is a P-type ATPase and an example of passive facilitated diffusion.
d) Is a P-type ATPase that transports calcium from the ER to the cytoplasm.
e) None of the above are true.