# AP Bio FRQ Fridays

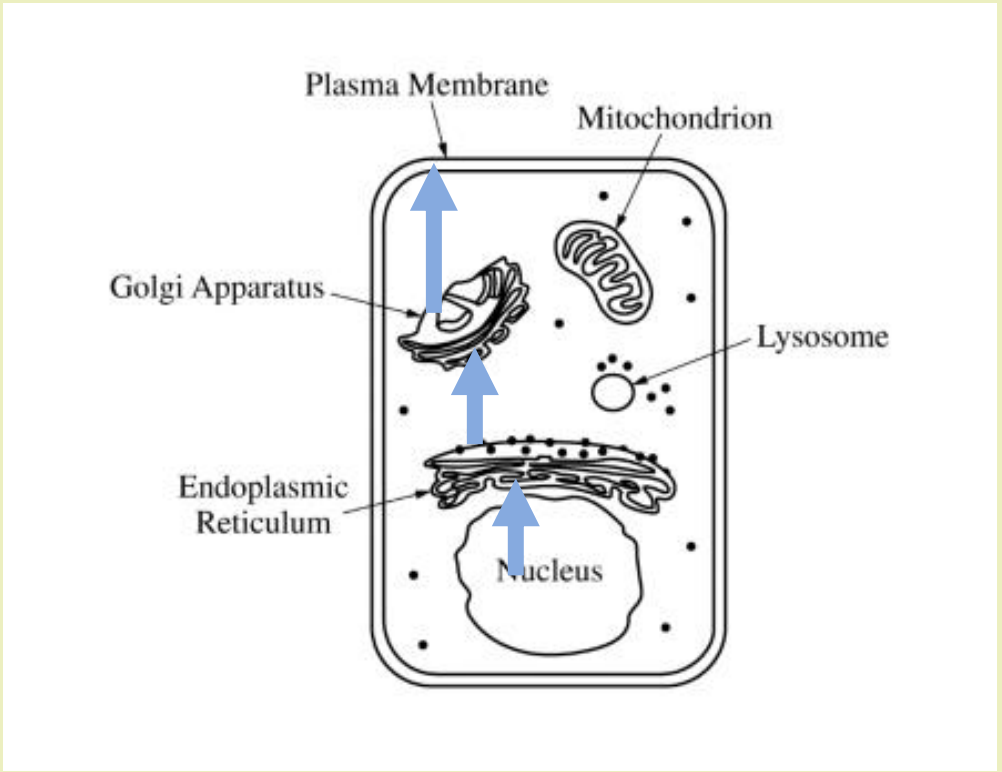
## 2018 #6
## Cellular Organelles

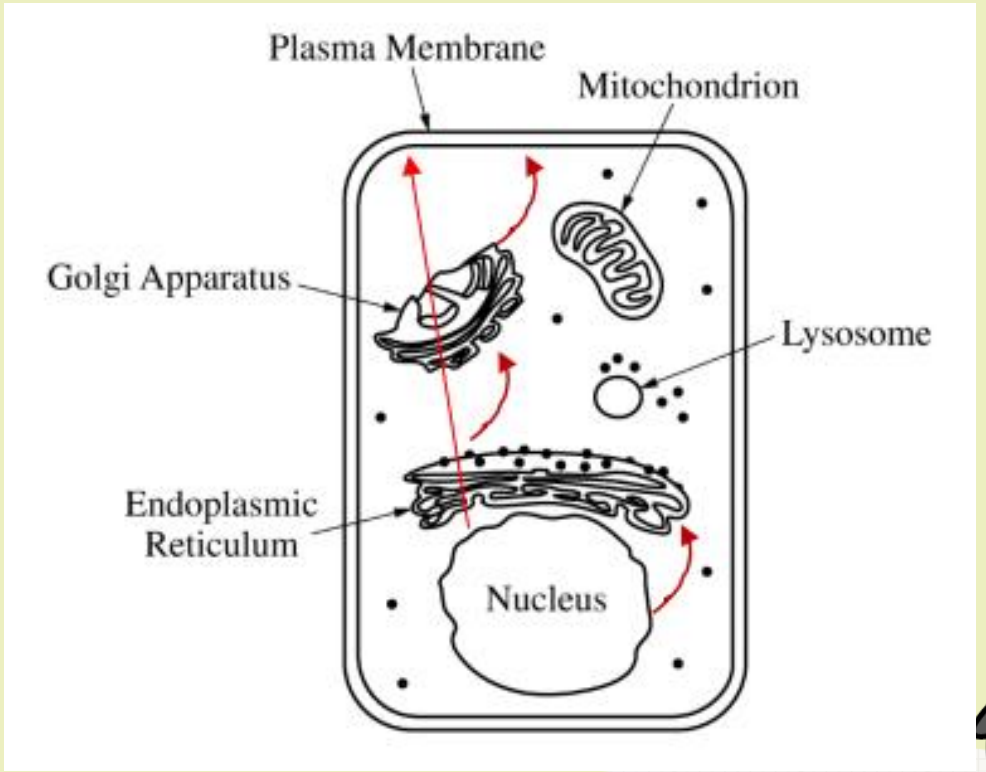
# FRQ Friday #7

# 2018 #6

Cystic fibrosis is a genetic condition that is associated with defects in the CFTR protein. The CFTR protein is a gated ion channel that requires ATP binding in order to allow chloride ions ($Cl^-$) to diffuse across the membrane.

(a) In the provided model of a cell, **draw** arrows to describe the pathway for production of a normal CFTR protein from gene expression to final cellular location.

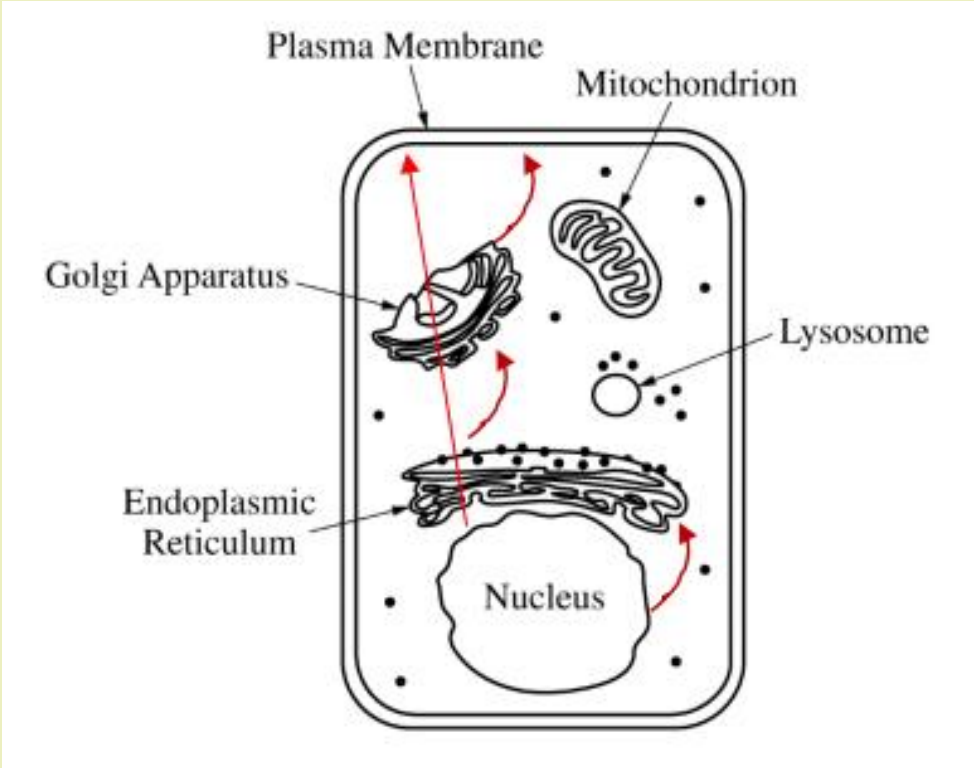


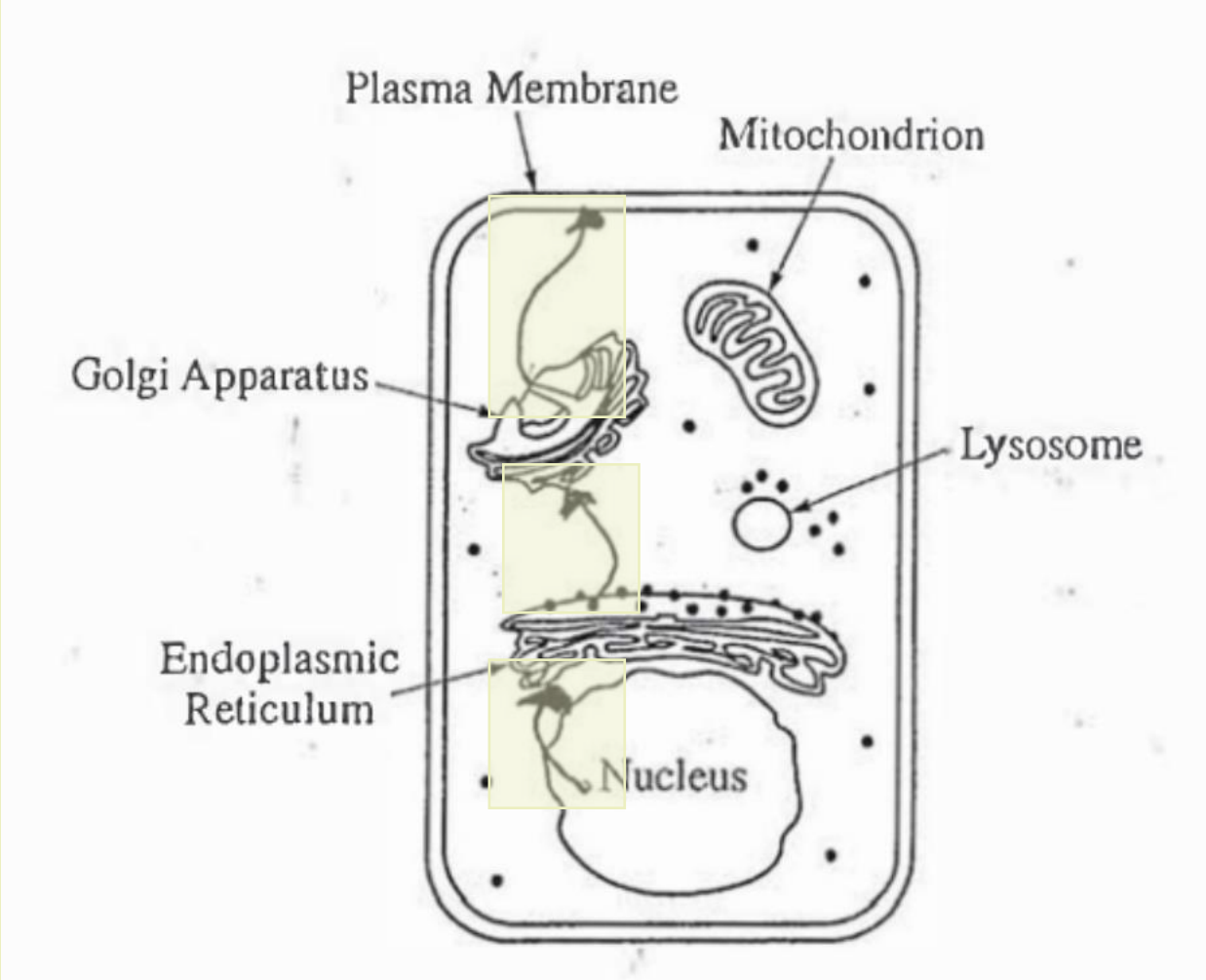




# FRQ Friday #7

# 2018 #6

(a) In the provided model of a cell, **draw** arrows to describe the pathway for production of a normal CFTR protein from gene expression to final cellular location.



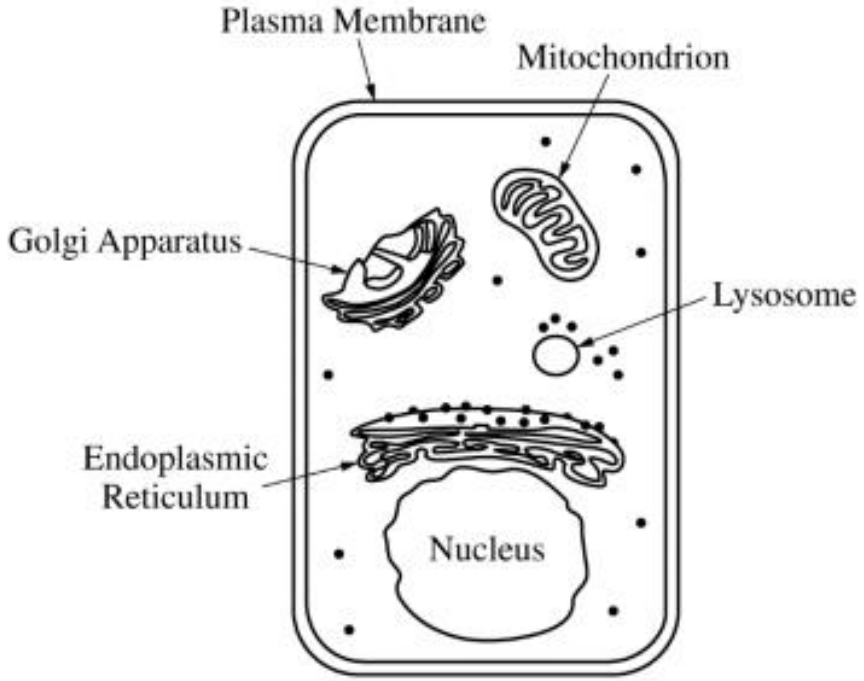




# FRQ Friday #7

# 2018 #6

Cystic fibrosis is a genetic condition that is associated with defects in the CFTR protein. The CFTR protein is a gated ion channel that requires ATP binding in order to allow chloride ions ($Cl^-$) to diffuse across the membrane.

(b) **Identify** the most likely cellular location of the ribosomes that synthesize CFTR protein.




**Identification (1 point)**

- (Rough) Endoplasmic Reticulum/ER

# FRQ Friday #7

# 2018 #6

(b) **Identify** the most likely cellular location of the ribosomes that synthesize CFTR protein.

**Identification (1 point)**

- (Rough) Endoplasmic Reticulum/ER

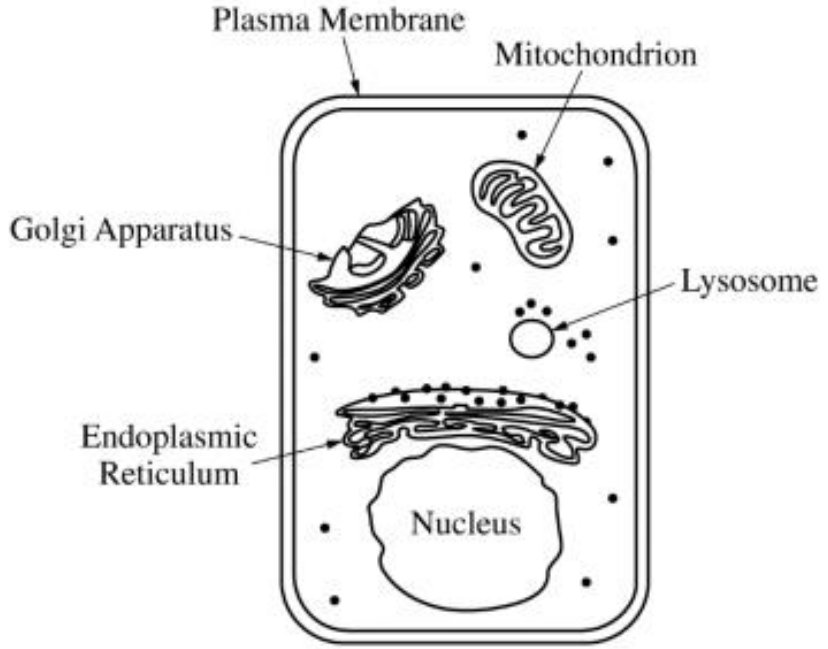
B) The ribosomes that synthesize the CFTR protein would probably be found on the rough ER.

# FRQ Friday #7

# 2018 #6

Cystic fibrosis is a genetic condition that is associated with defects in the CFTR protein. The CFTR protein is a gated ion channel that requires ATP binding in order to allow chloride ions ($Cl^-$) to diffuse across the membrane.

(c) **Identify** the most likely cellular location of a mutant CFTR protein that has an amino acid substitution in the ATP-binding site.




**Identification (1 point)**

- In the (cellular/plasma) membrane

# FRQ Friday #7

# 2018 #6

(c) **Identify** the most likely cellular location of a mutant CFTR protein that has an amino acid substitution in the ATP-binding site.

**Identification (1 point)**

- In the (cellular/plasma) membrane