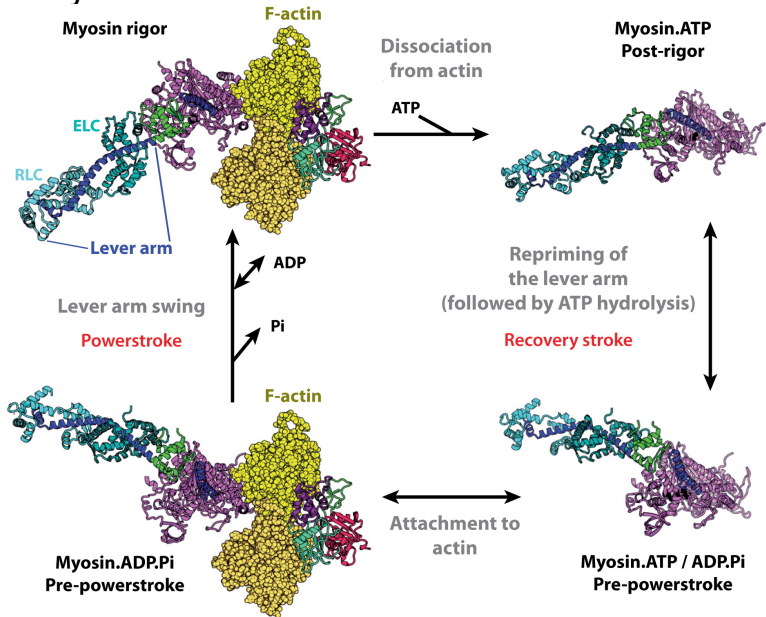


Overview of muscle contraction

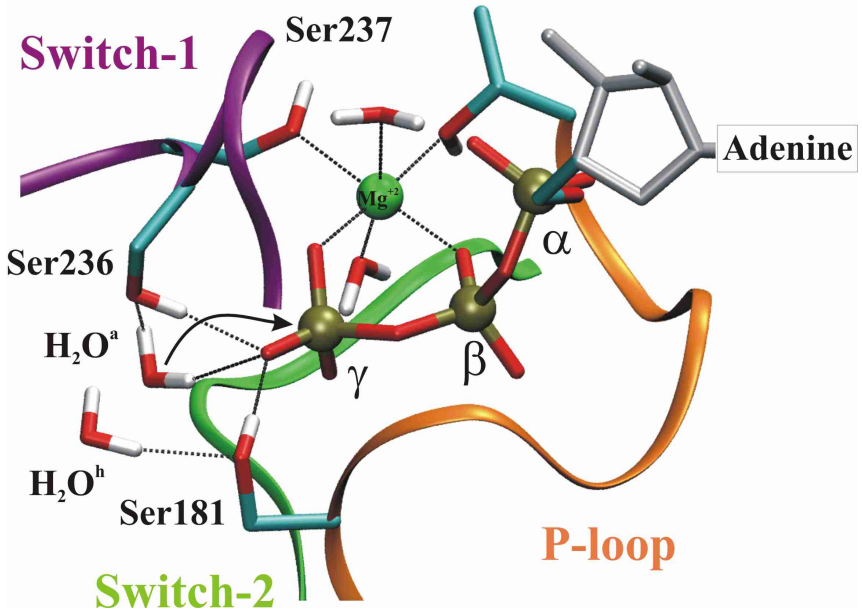
See movie on course website.

Myosin cycle



Complexity of bonding: ATP in pocket of myosin II protein

Thr186



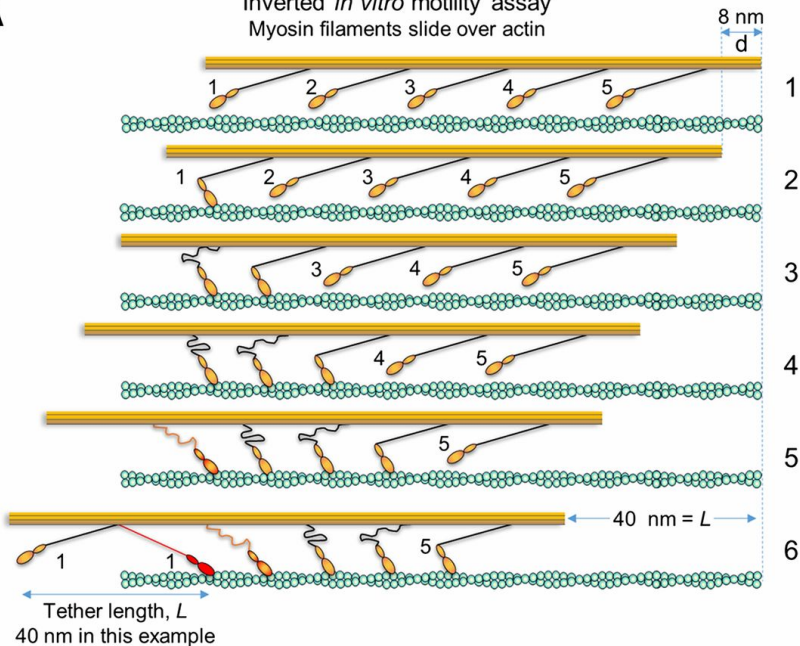
ATP hydrolysis, in slow motion...

See movie on course website.

Myosin interactions

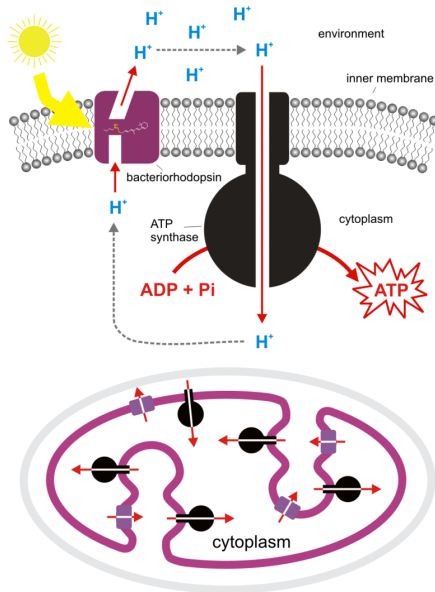
A

Inverted *in vitro* motility assay
Myosin filaments slide over actin

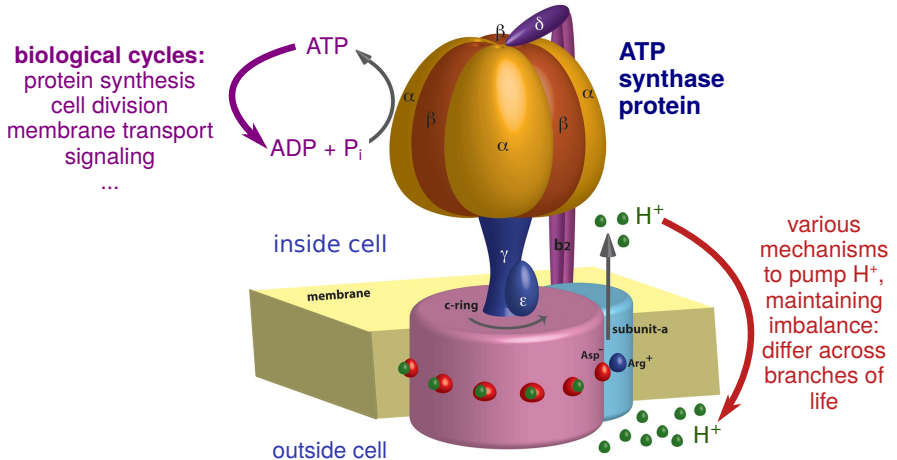


Where does the ATP come from?

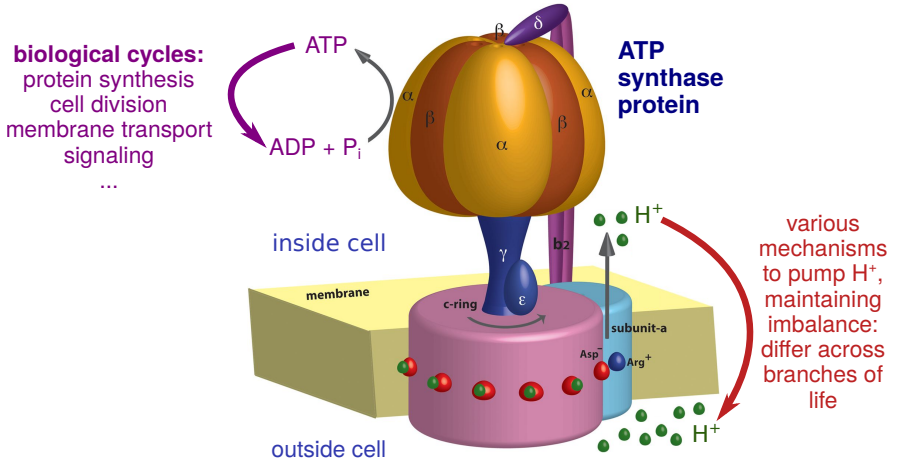
Recall the photosynthetic bacterium:



Where does the ATP come from?



Where does the ATP come from?



Energy source for ATP synthase is chemical potential difference from imbalance of ions on either side of membrane.