

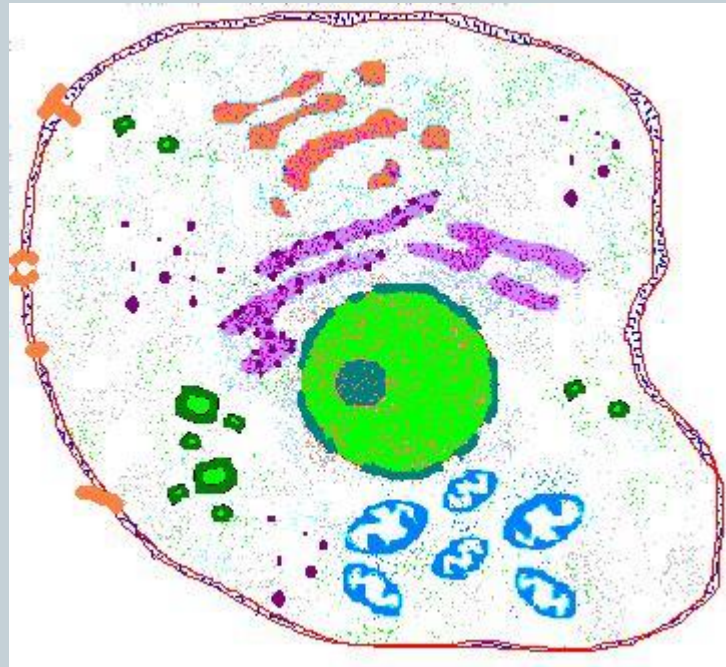
# What do you usually think of when you hear the word “cell”?



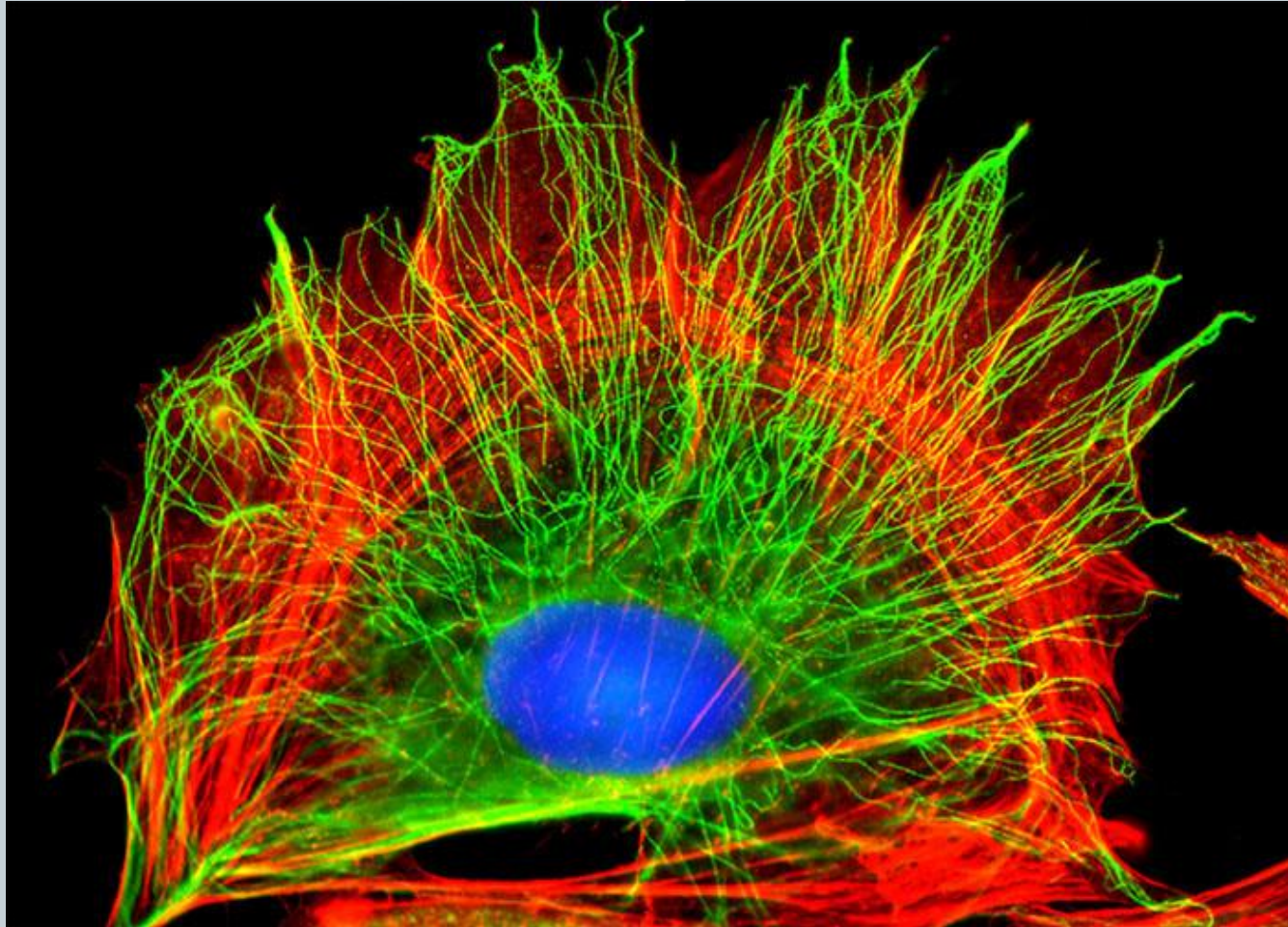
JOE GEISSLER  
DINO MAGOU

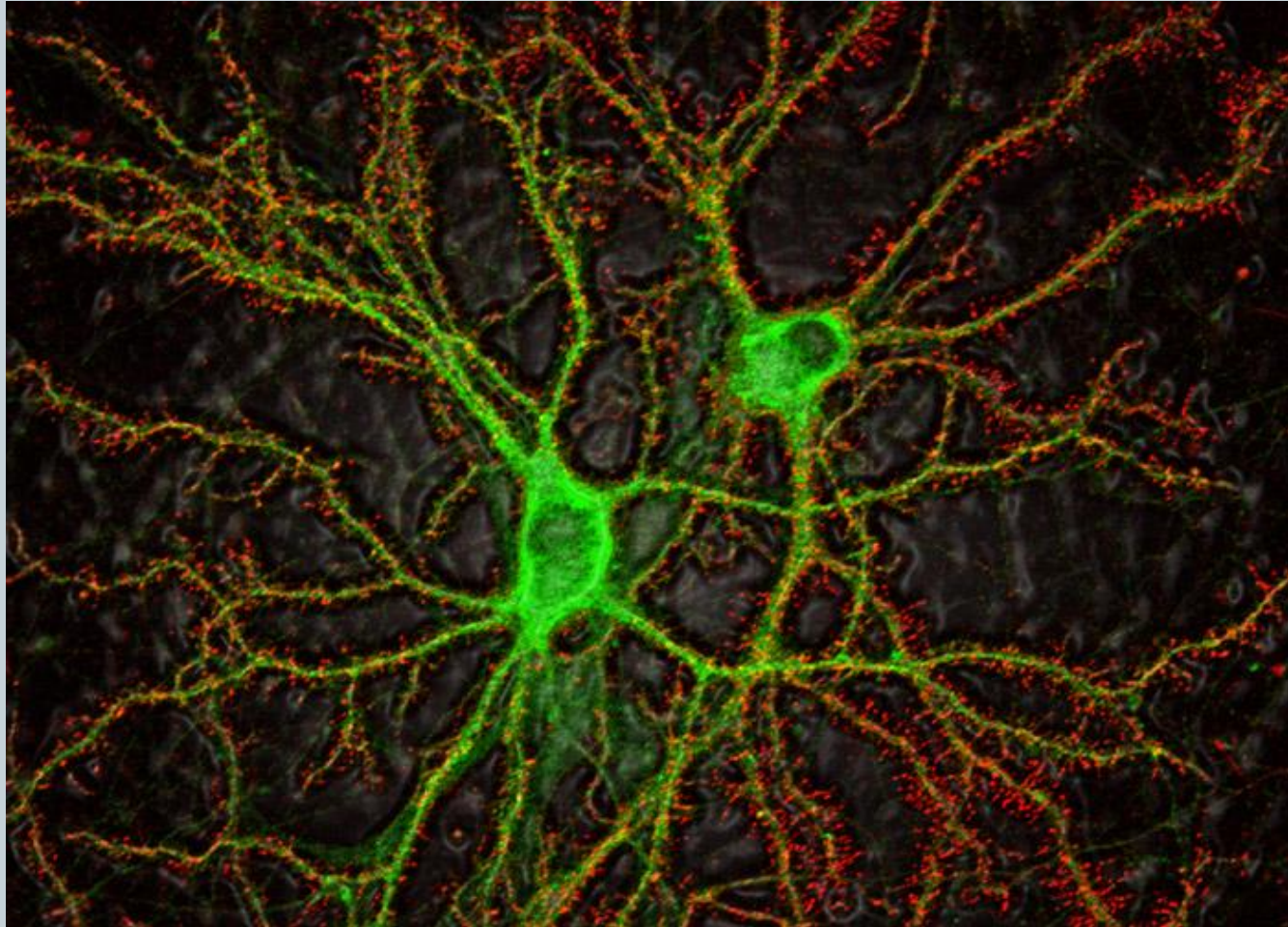


# Pen and Paper



# Confocal Microscope





# What do you know about cells?



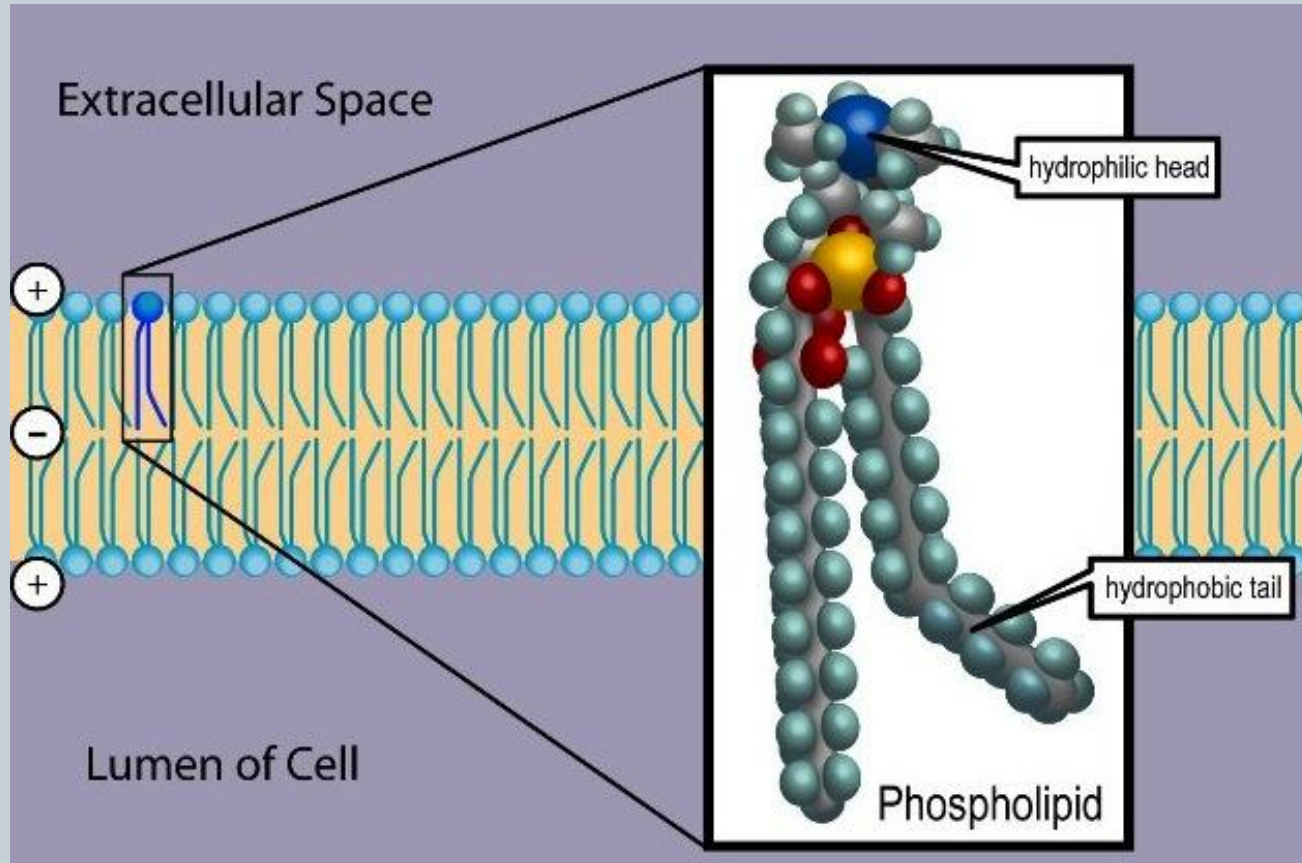
- Are all cells made of the same parts?
- Are there many types of cells?
- Do all cells have the same function?
- Can cells communicate with each other?
- What allows cells to communicate with each other?

# Functions of The Cell Membrane

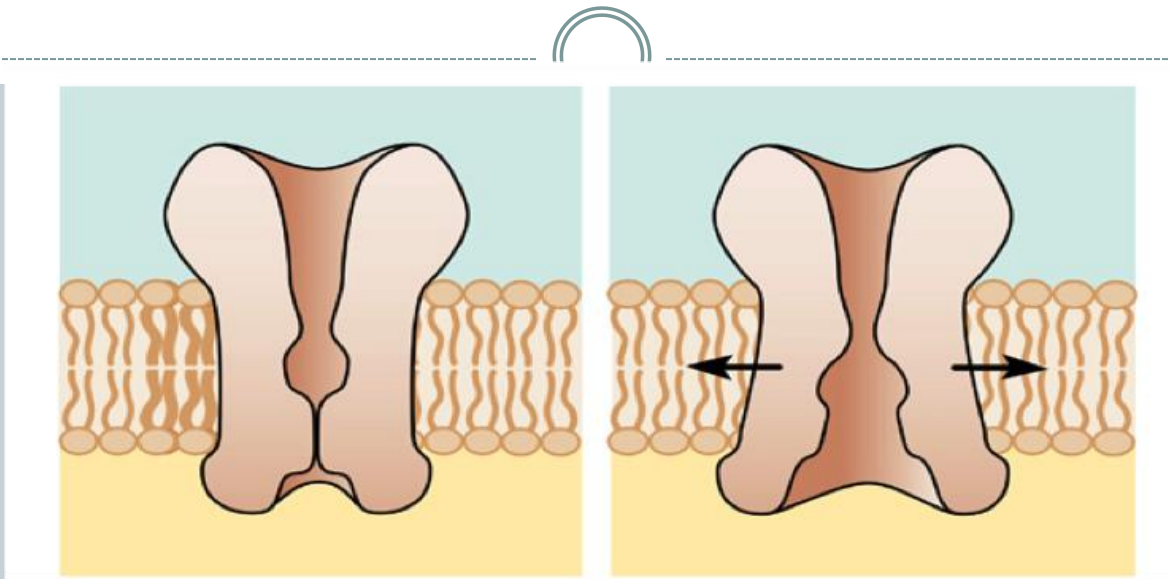


1. Defines the borders of the cell
2. Establish the shape of the cell
3. The “Bouncer” of the cell
4. Aids in communication with other cells

# The Cell Membrane



# The Balance

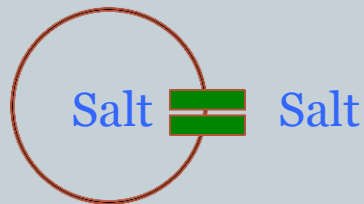
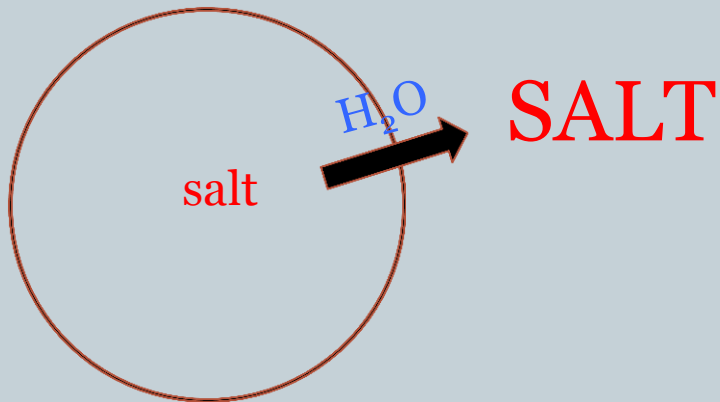


- Membrane bound proteins exchange ions and other proteins
- Form of communication
- Fresh nutrients are brought in while waste products are removed
  - This maintenance is vital to the cell and known as homeostasis or equilibrium



# What happens when the cell is not in balance?

Salts Outside > Salts Inside



Salts Outside < Salts Inside

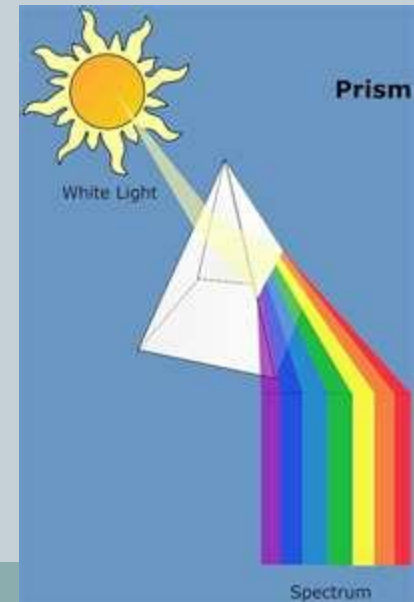


**EXPLO  
DE!**

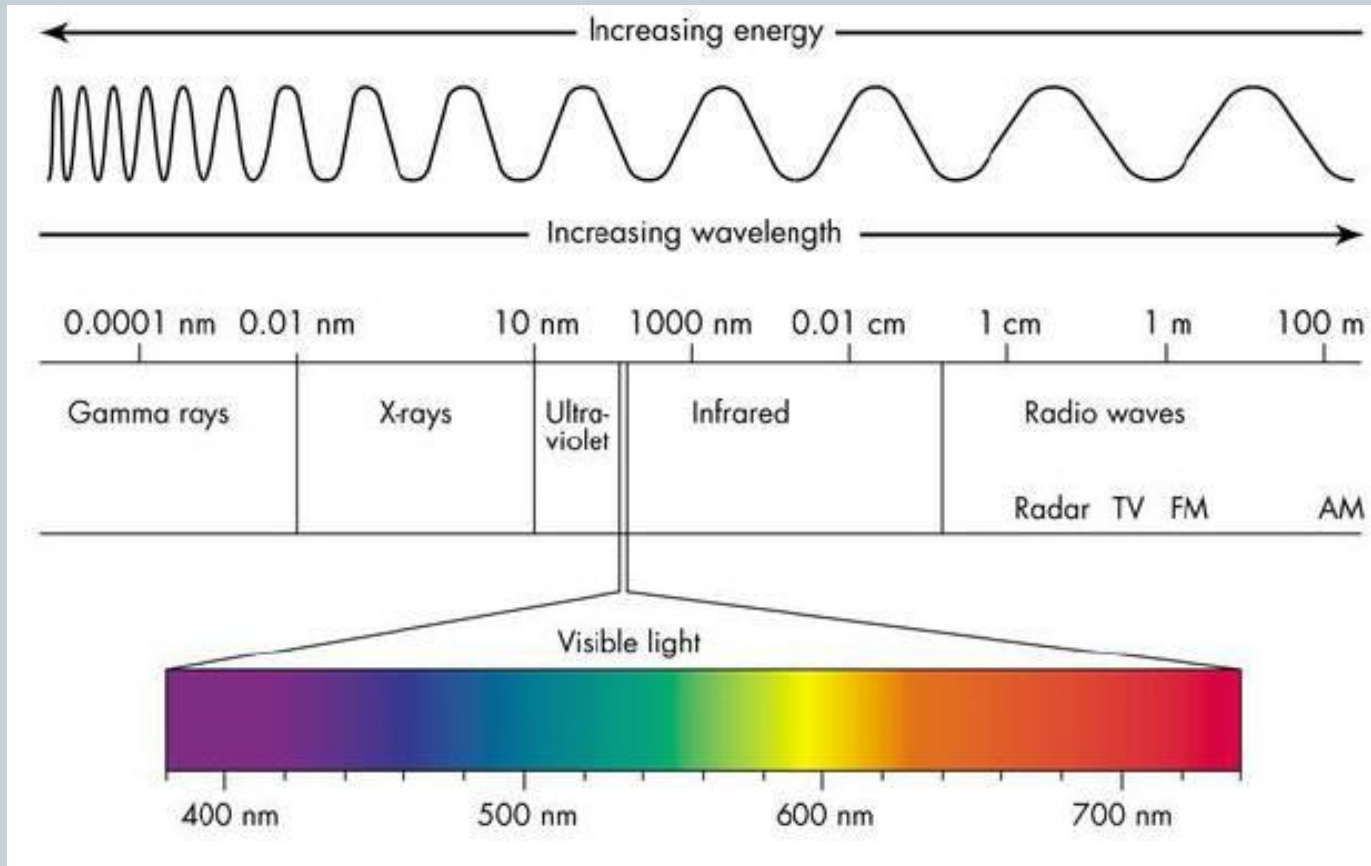
# Colorimetry



- Device used to measure the absorption and transmittance of light passed through the sample
- Chemists use this to detect the concentration of a solute within a solution



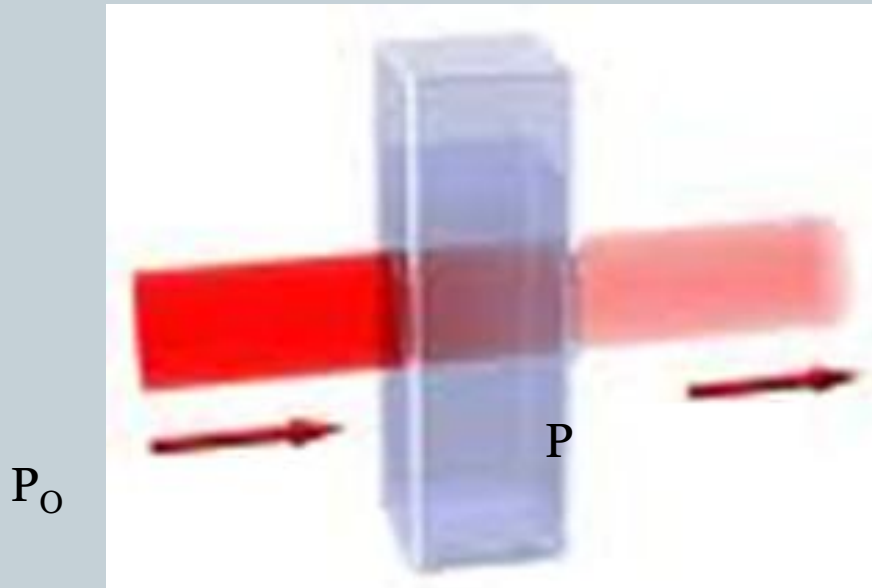
# Visible light



# Transmittance, T



- Measures the fraction of the original light that passes through the sample
- Values range from 0-1



# Absorbance, A



- Measures the amount of light that a sample neither transmits nor reflects
- Recorded as percent transmittance,  $100T$ , ranging from 0-100%
- Absorbance is proportional to the concentration of a substance in a solution

# Beers Law



- Chemist use colorimetry to determine the concentration of a solute within a solution

$$A = \epsilon bc$$

- $\epsilon$  is the molar absorptivity ( $M^{-1} \text{ cm}^{-1}$ )
- $b$  is the path length (cm)
- $c$  is the concentration of the sample (M)

# Our Experiment



- Investigate how changing a cell environment can alters the cells ability to function
- To determine if the cells environment has changed, we will be using a Colorimeter
  - Colorimeter measures the amount of light which passes through the solution
- **MAKE A HYPHOTHESIS**

# Experimental Cell Environments



- **15% NaCl**
  - Hypertonic – more salt than normal
- **10% Ethanol**
  - Alcohol solution
  - Breaks lipids
- **0.5% SDS**
  - Detergent
  - Breaks lipids



# Why are you crying??

Why does cutting an onion make you cry?



<http://www.youtube.com/watch?v=cU-gfFzC6Uw>