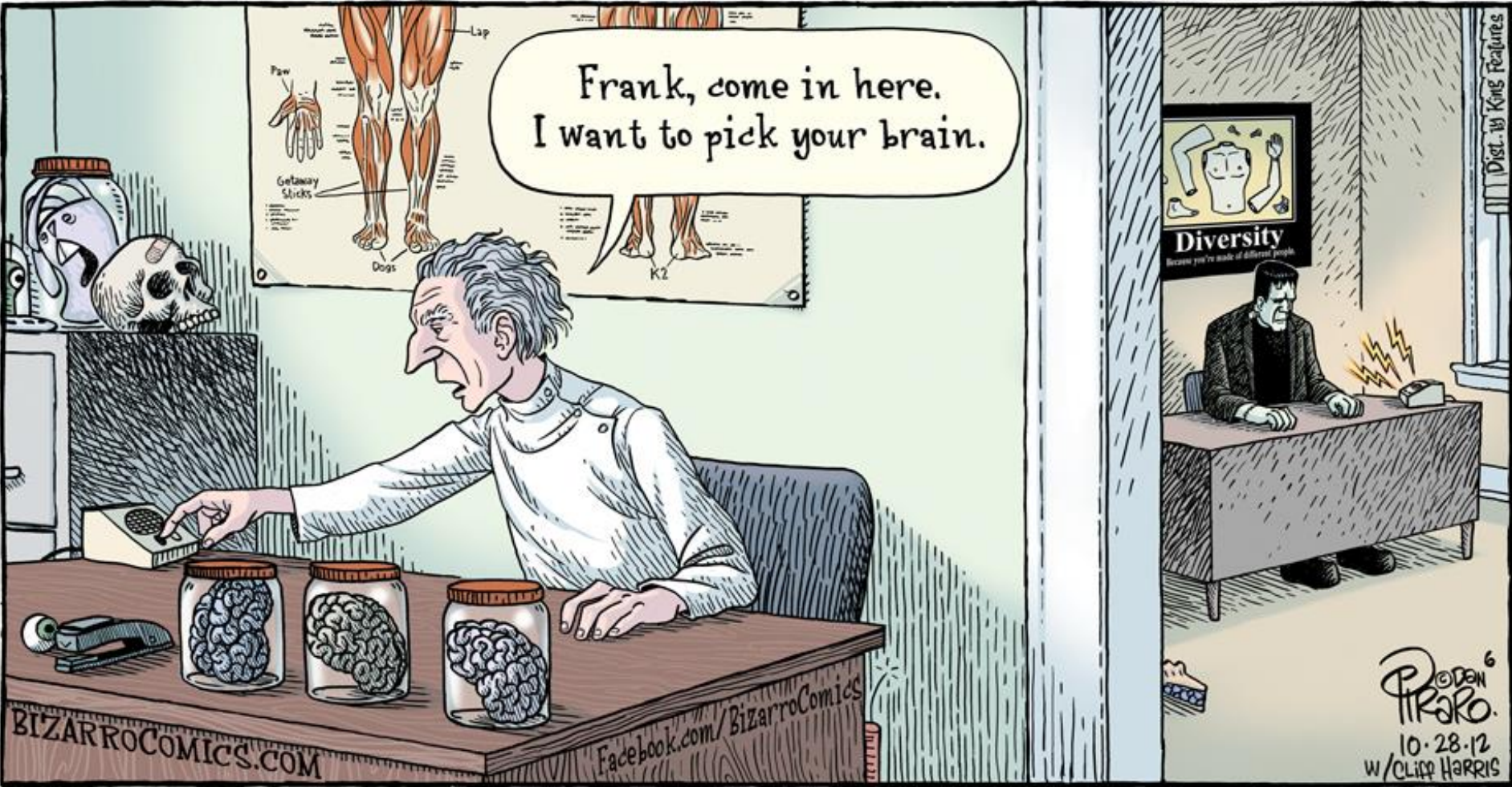


# Living Things...

- It's **ALIVE!!!!**



Frank, come in here.  
I want to pick your brain.



Dist. by King Features

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PODAN  
BIZARRO.  
10.28.12  
w/CLIFF HARRIS

# I) Characteristics of Living Things

## A) Cell Theory

### 1) History

#### a) Hooke (1660)



- i) observation of cork cells (cell walls)
- ii) named the small empty spaces cells
- iii) these cells were not living
- iv) 200 years later cells are seen as important... (Hooke never pursued his discovery)

## b) Schleiden & Schwann (1838)



i) plants & animals made up of cells



ii) first mention of organisms being made up of one or more cells



c) Virchow (1858 – 3 years before Pasteur)

i) cells arise from other cells

# Cell Theory

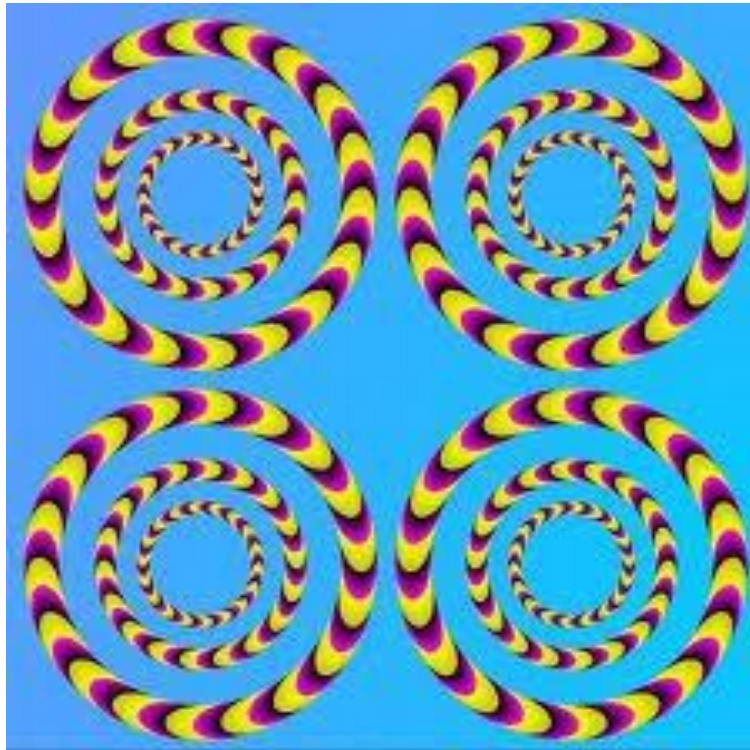
## 2) Info/Statements

- a) The cell is the basic unit of organisation of all living things.
- b) All living organisms are made up of cells.
- c) Cells come from other cells
  - i) aka Biogenesis
  - ii) organisms that have one cell are **unicellular**
  - iii) organisms made up of more than one cell are **multicellular**

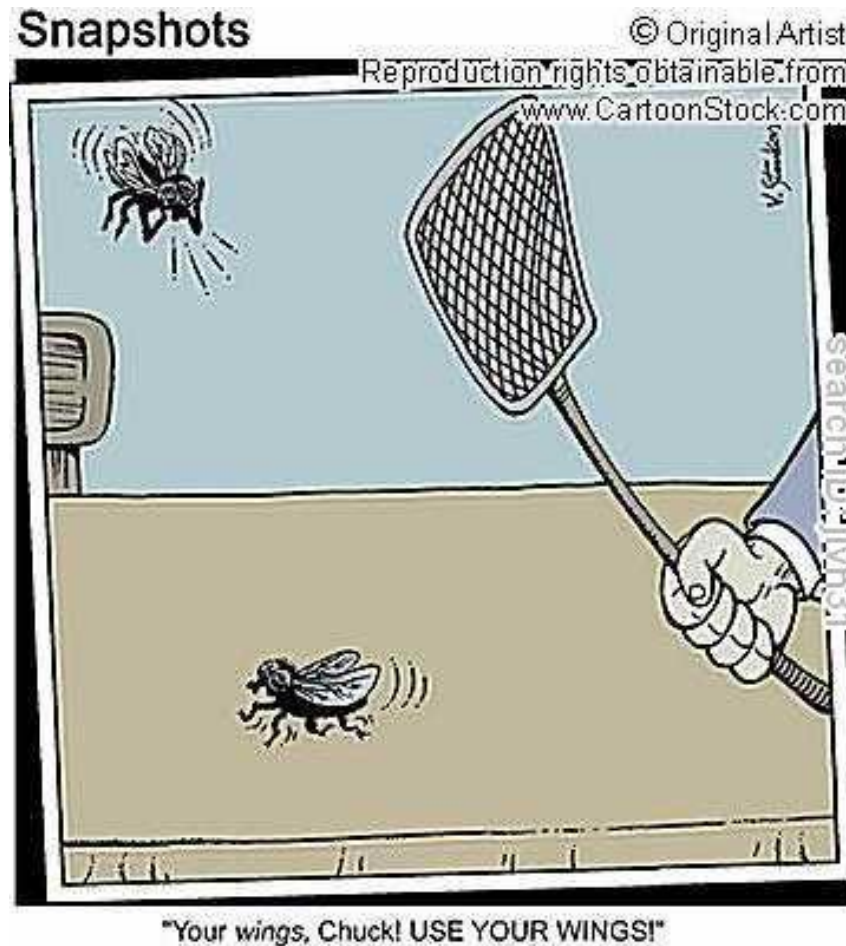
B) Characteristics of all living things  
.... something that is alive ....



1) moves



2) responds to a stimulus







3) requires energy from the environment









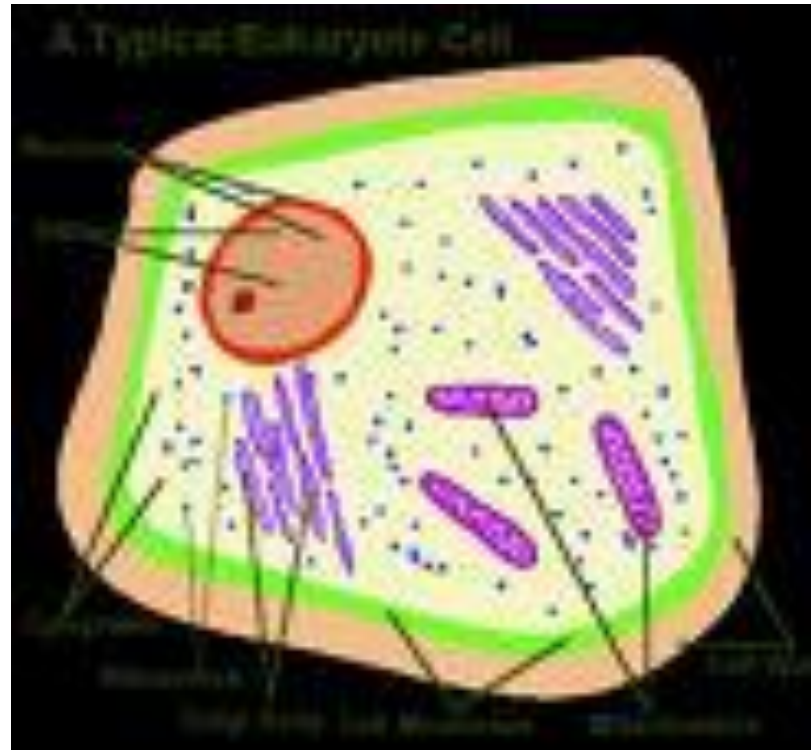


#### 4) excretes energy and chemicals

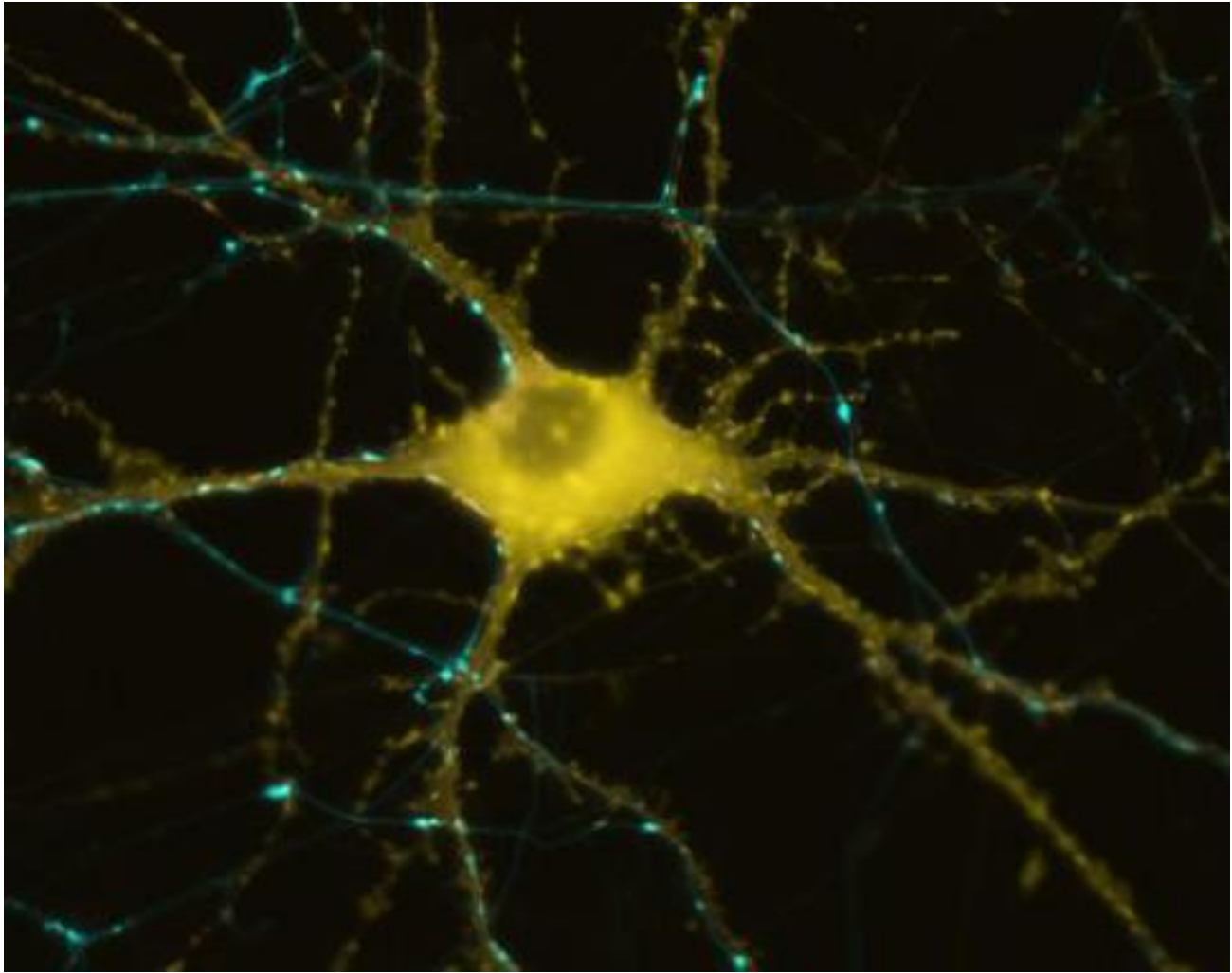




5) made up of cells and cell products







6) metabolizes and maintains internal organisation



7) grows and develops



Dad

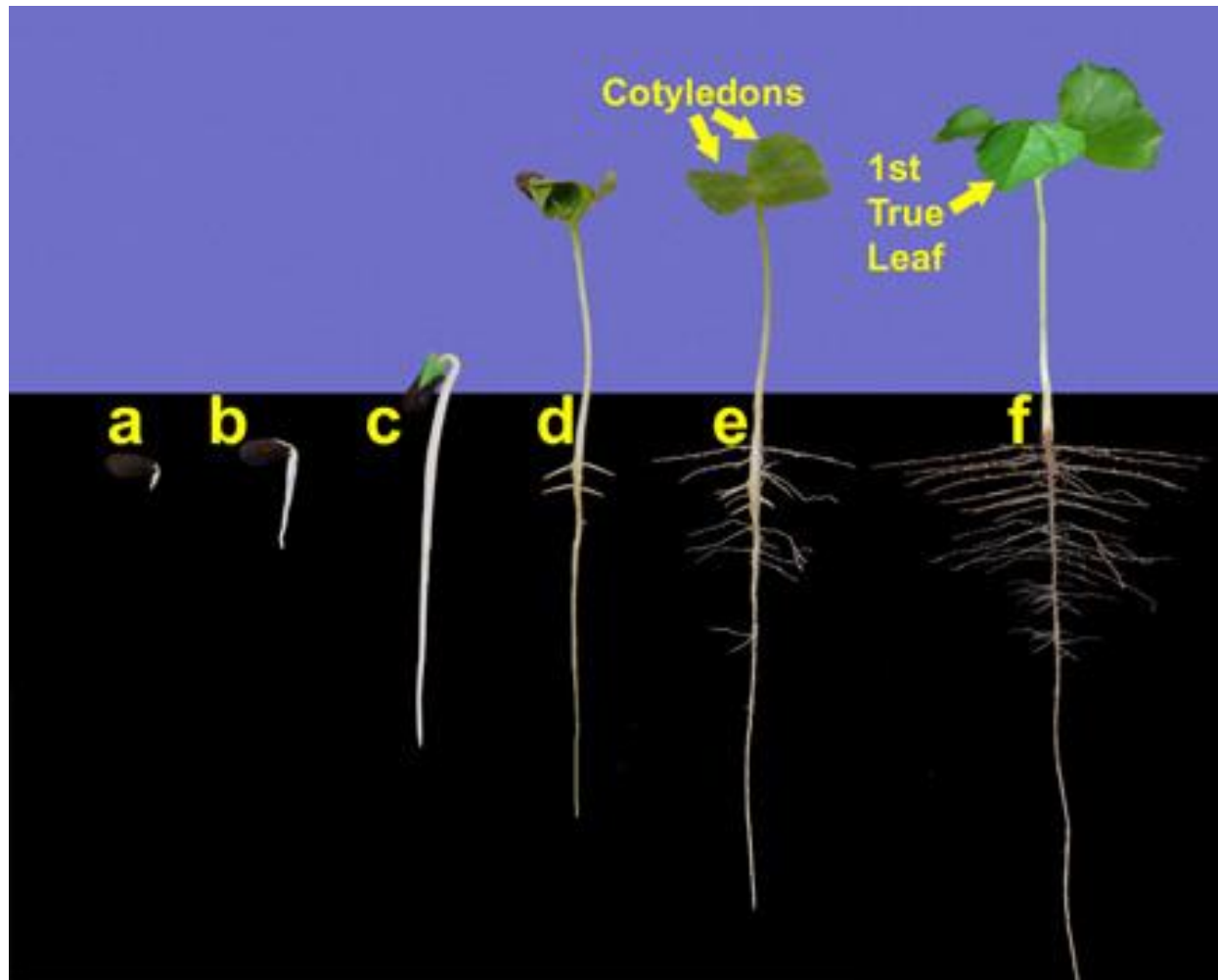
That  
happened

much  
too

fast.







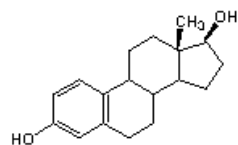


8) requires water

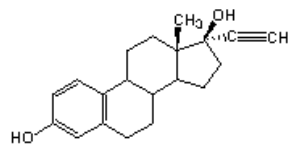


# 9) produces organic compounds

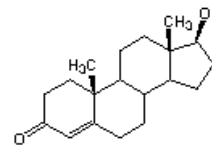
## SOME INTERESTING ORGANIC MOLECULES



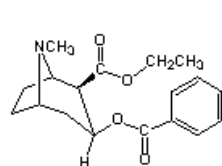
Estradiol



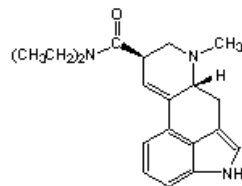
Mestranol (Norlutin)



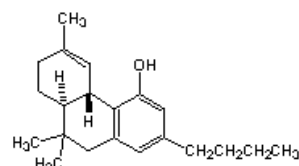
Testosterone



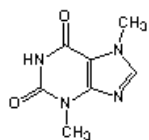
Cocaine



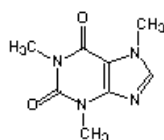
Lysergic acid diethylamide (LSD)



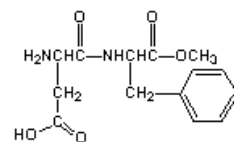
Tetrahydrocannabinol



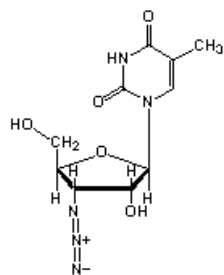
Theobromine



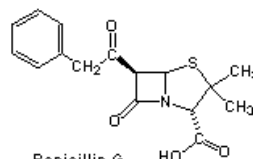
Caffeine



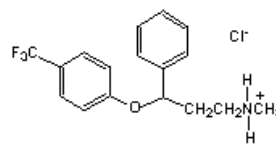
Aspartame (NutraSweet)



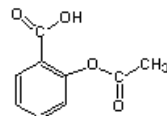
Azidothymidine (AZT)



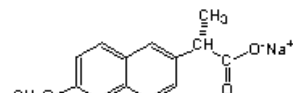
Penicillin G



Fluoxetine hydrochloride (Prozac)



Acetylsalicylic acid (aspirin)

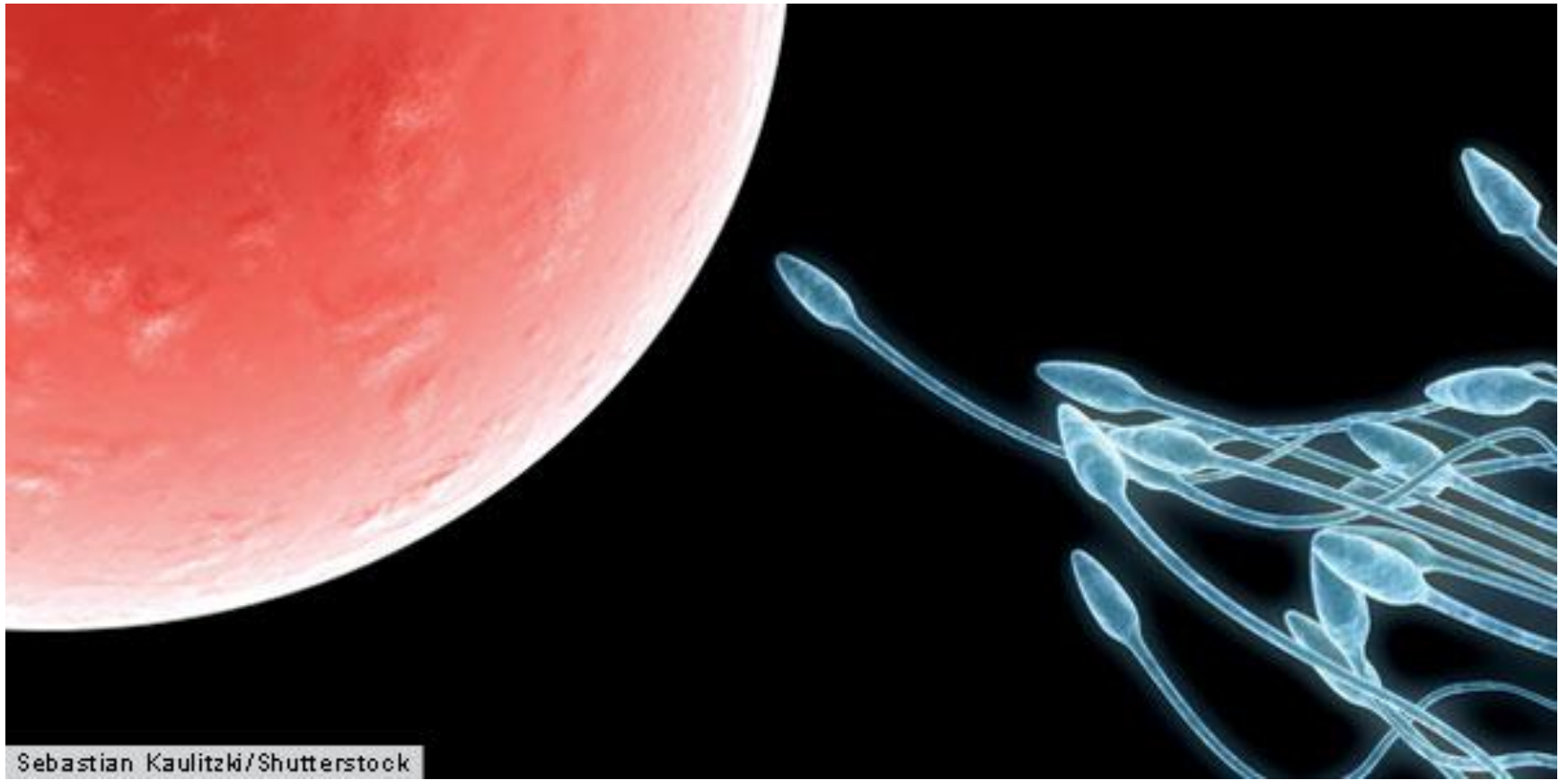


Naproxen sodium (Aleve)



10) reproduces and passes down genetic information  
(inheritance)









11) adapts to environment



