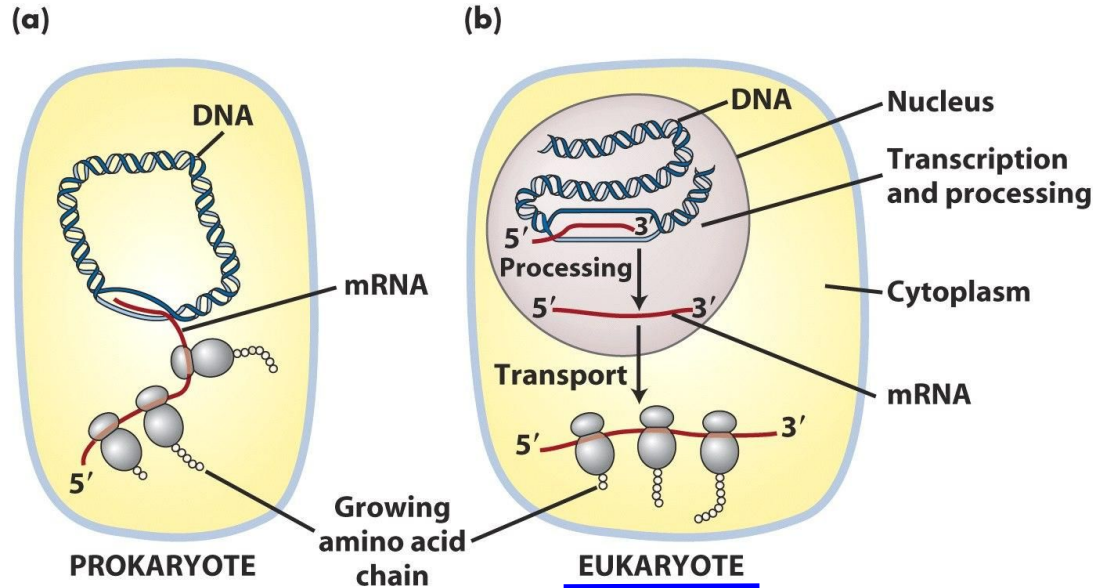


Should we clone monkeys? What about humans?



Cloning

- 1) How is the first cell of a eukaryotic clone created?
- 2) How does this cell become a multicellular clone?



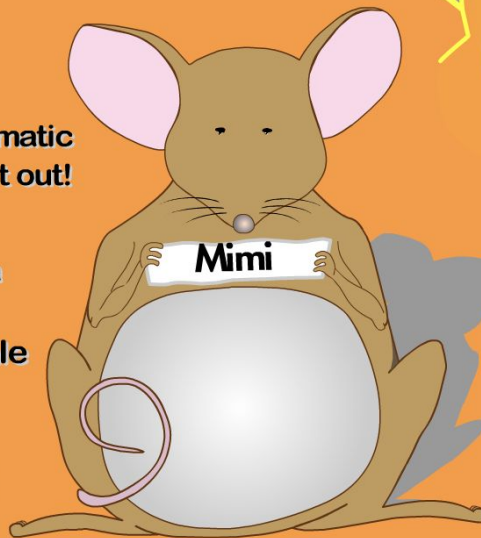
egg cell



Using what you know about Somatic Cell Nuclear Transfer, let's try it out!

Your mission is to create a genetically identical clone of Mimi, a brown female mouse.

Click on Mimi to begin!

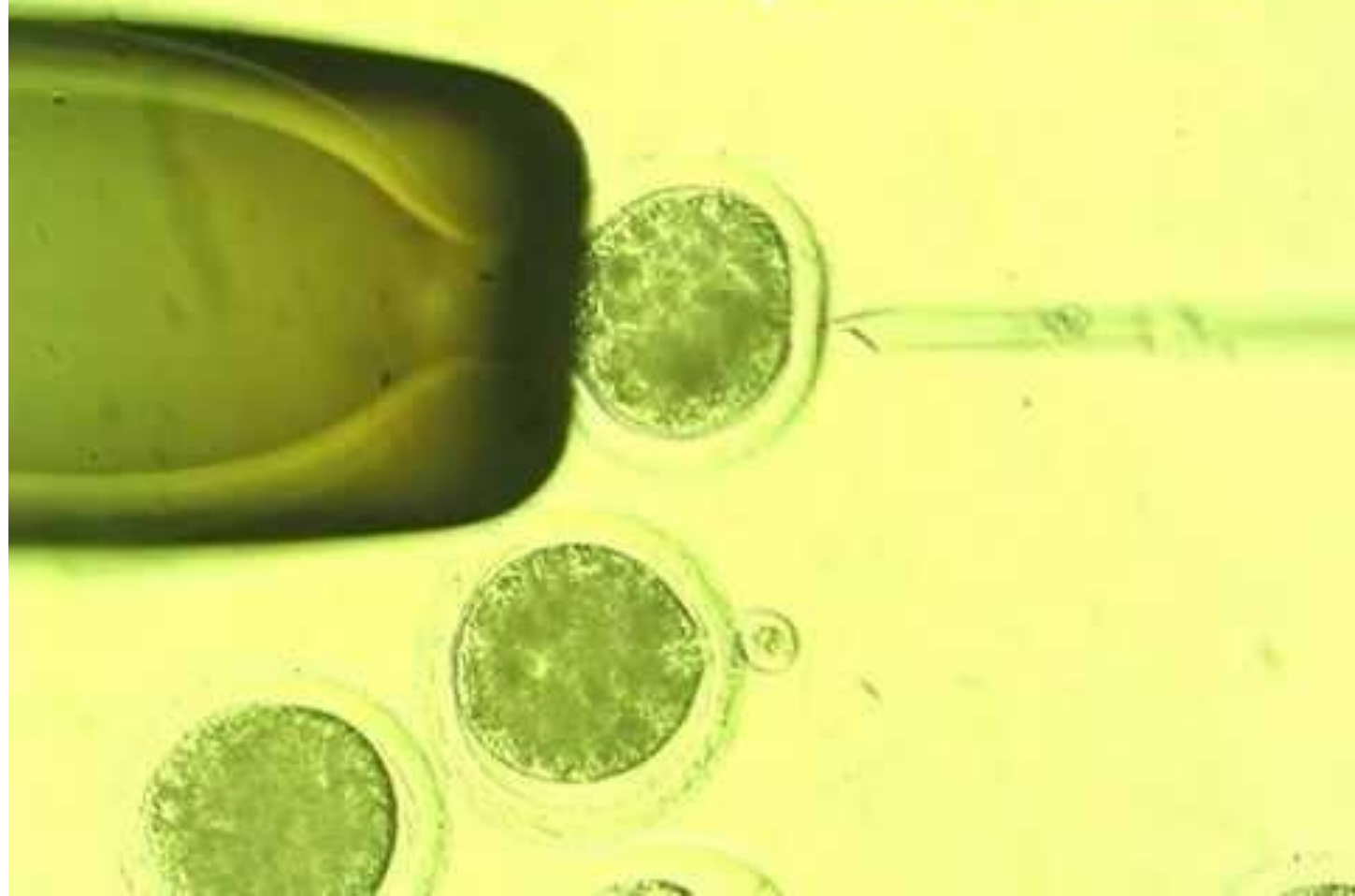


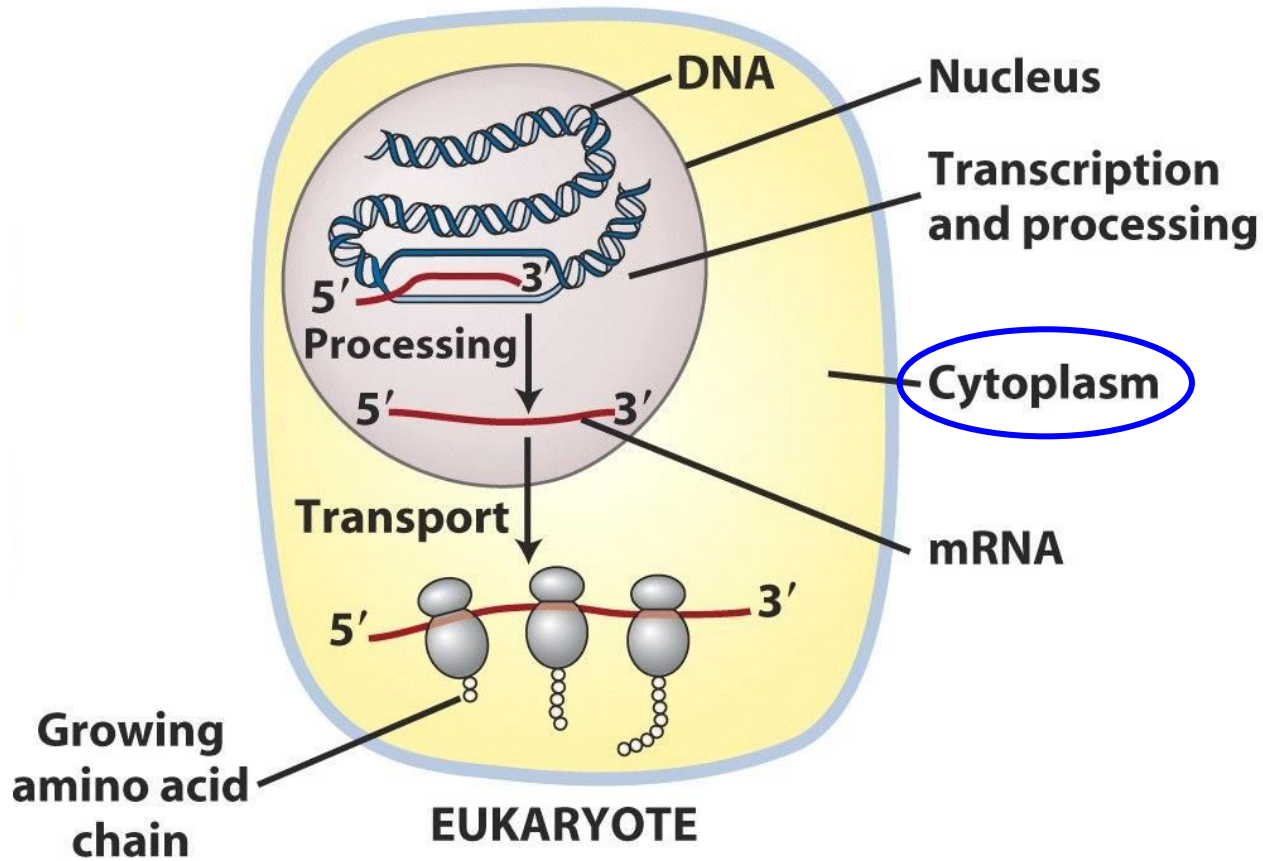
**CLICK ≠
CLONE !**



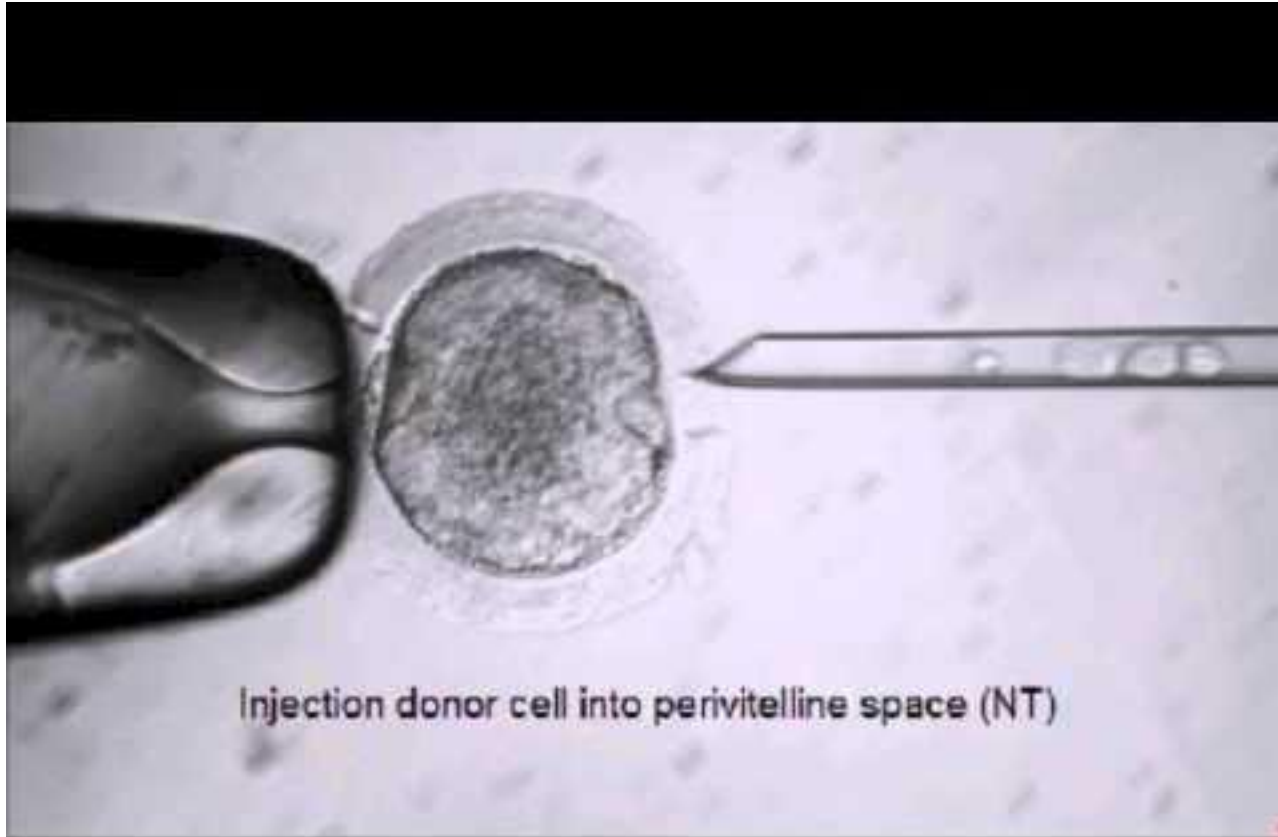
HHMI

Oocyte Enucleation



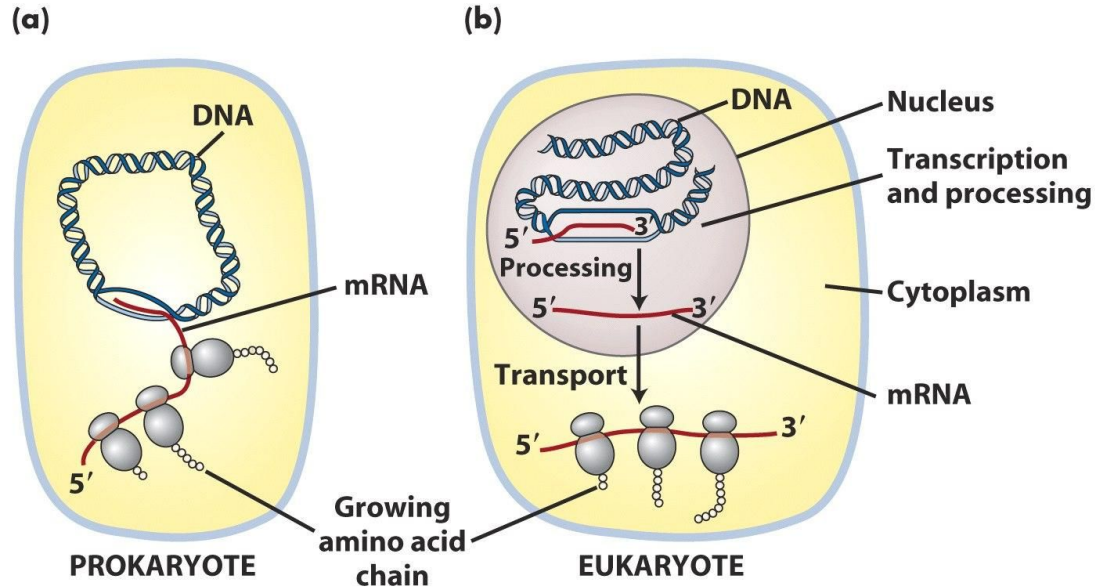


Should we use egg donors to clone human cells?

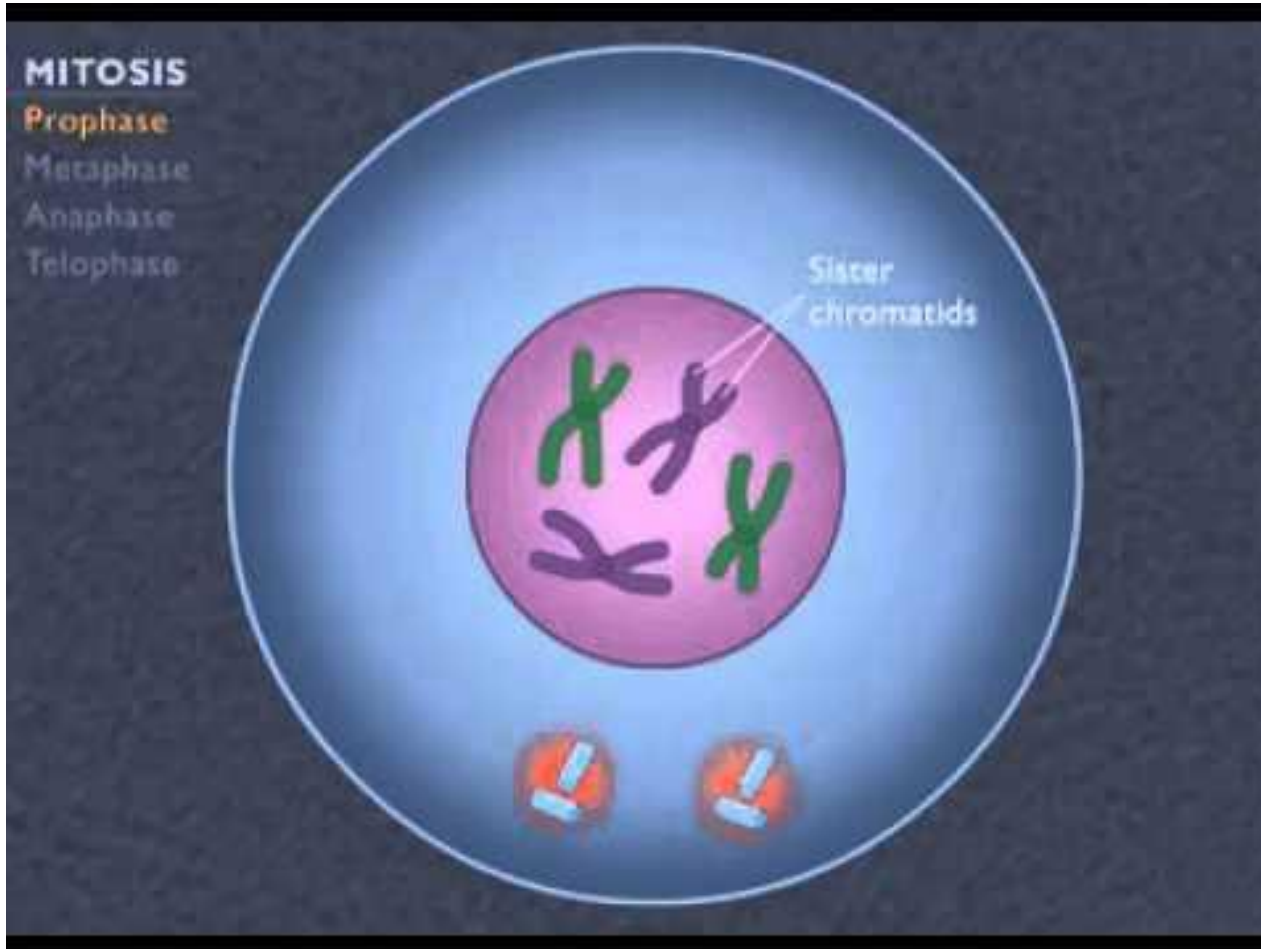


Cloning

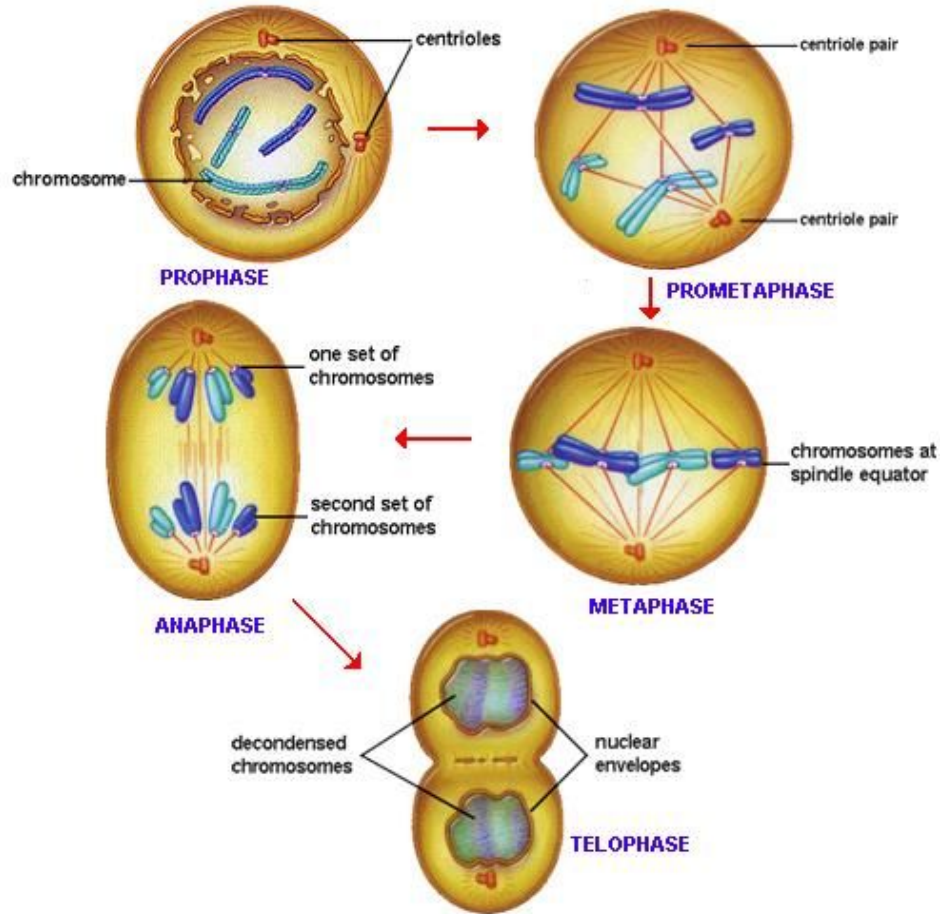
- ~~1) How is the first cell of a eukaryotic clone created?~~
- 2) How does this cell become a multicellular clone?



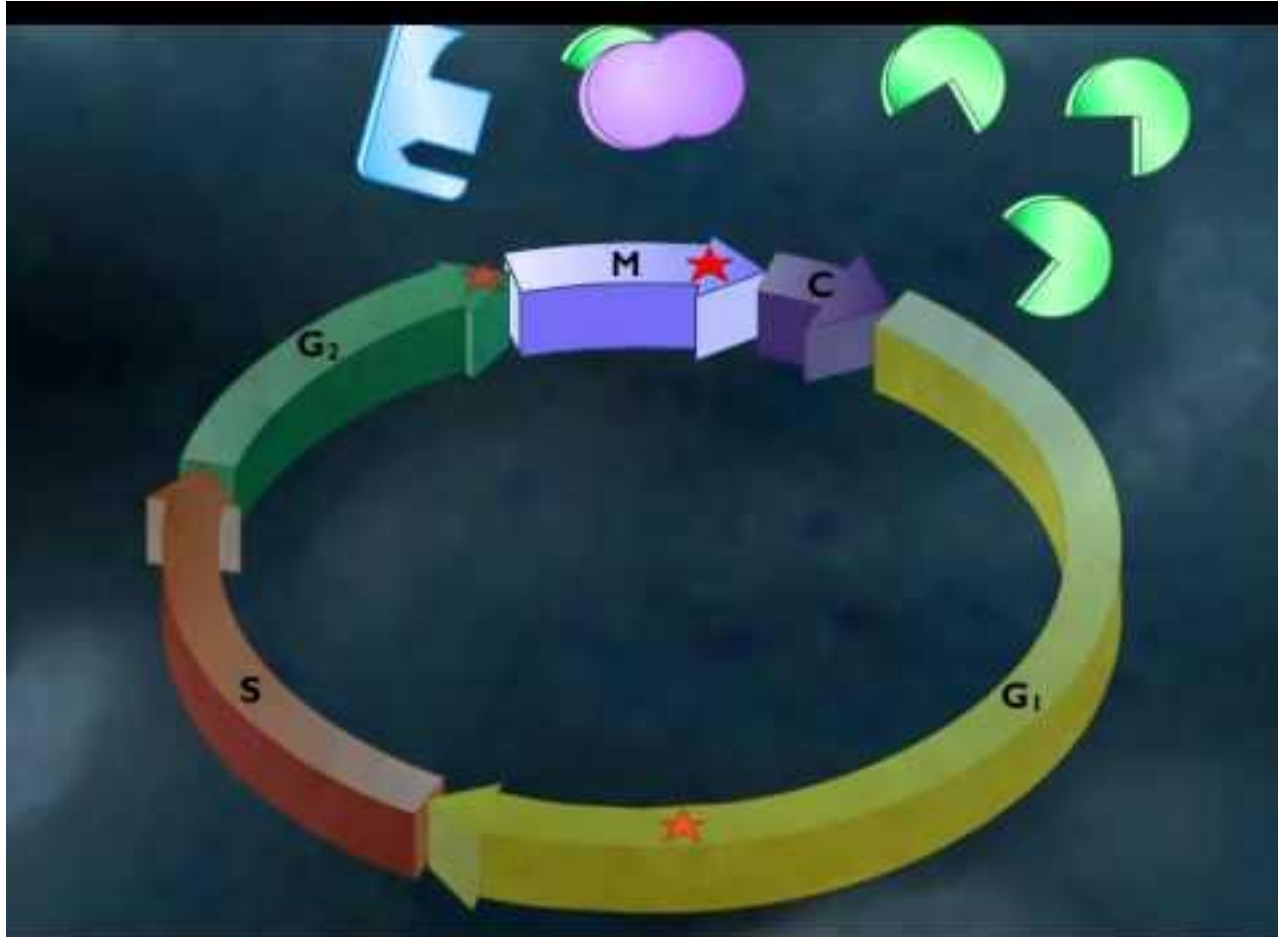
How does a cell become a multicellular organism?



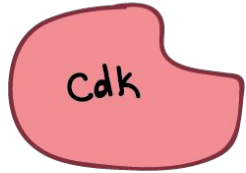
How does a cell become a multicellular organism?



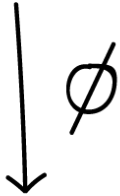
What triggers a cell to begin mitosis?



NO CYCLIN:

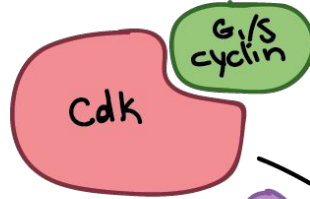


Cdk is inactive

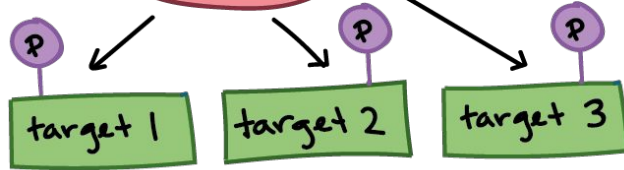


S phase factors "off"

+G₁/S CYCLIN:

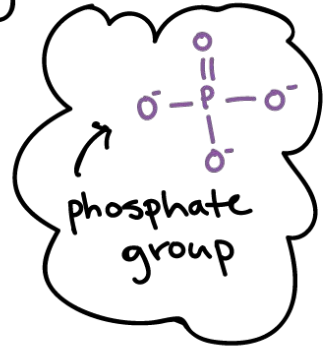


Cdk is activated

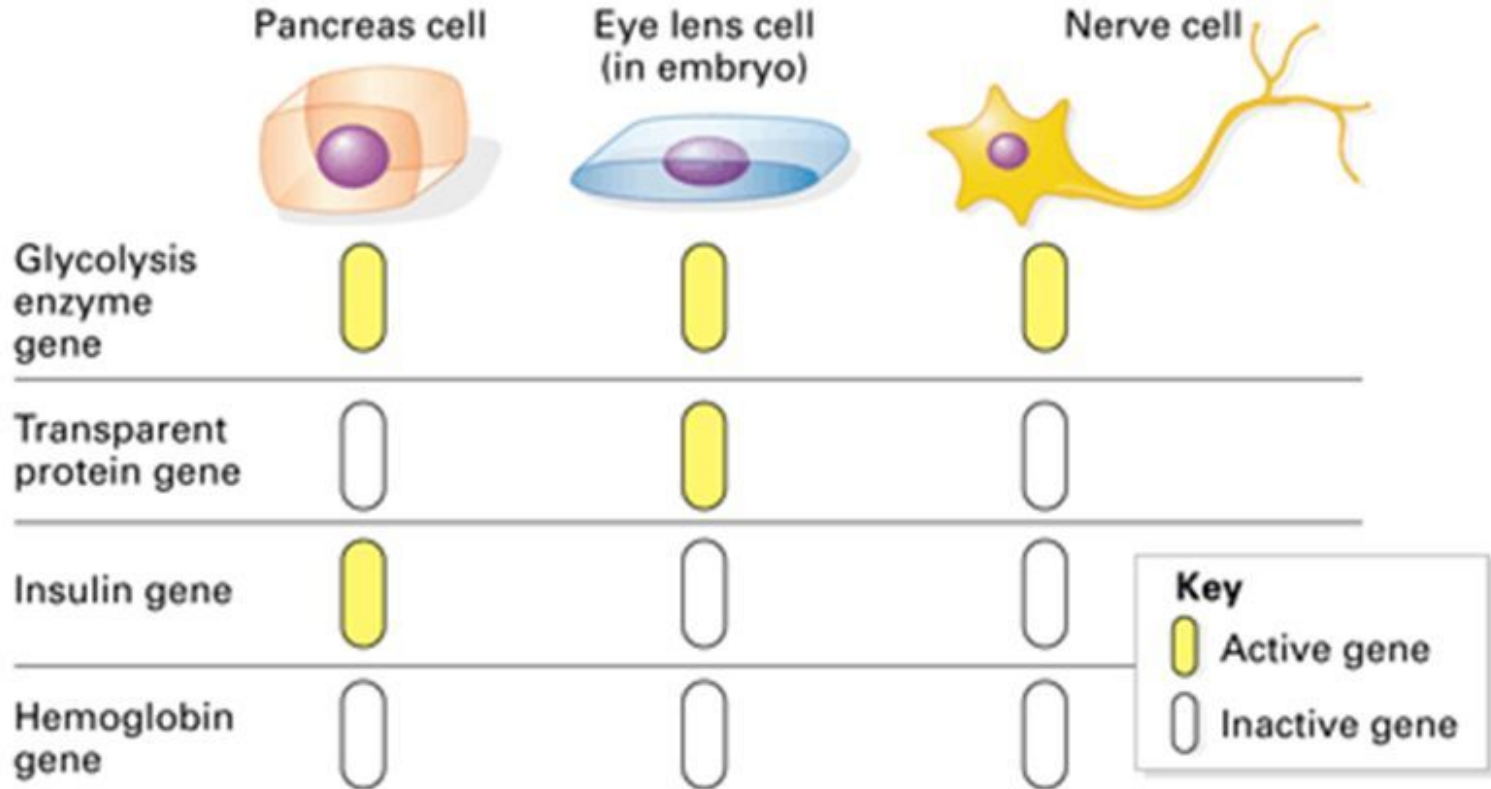


} G₁/S targets phosphorylated

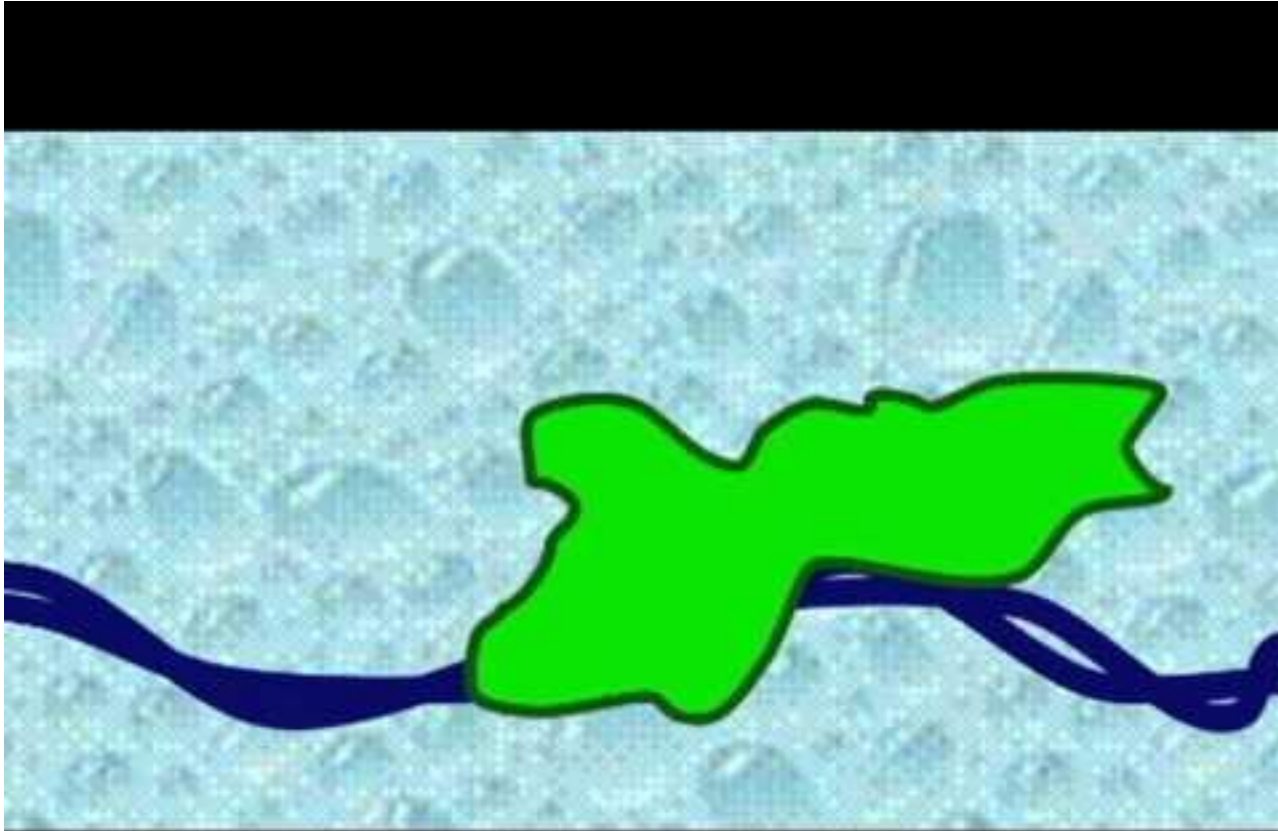
S phase begins
(DNA replication enzymes are activated)



What signals a cell to produce specific proteins?



What signals a cell to produce specific proteins?

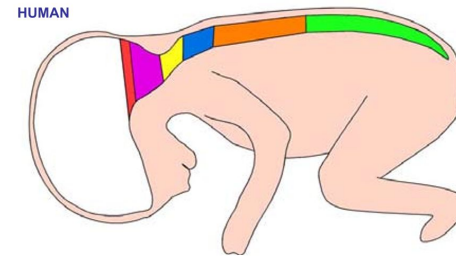
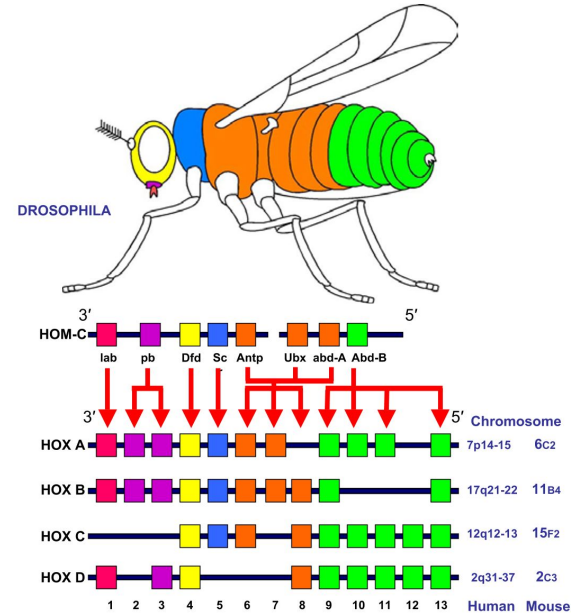
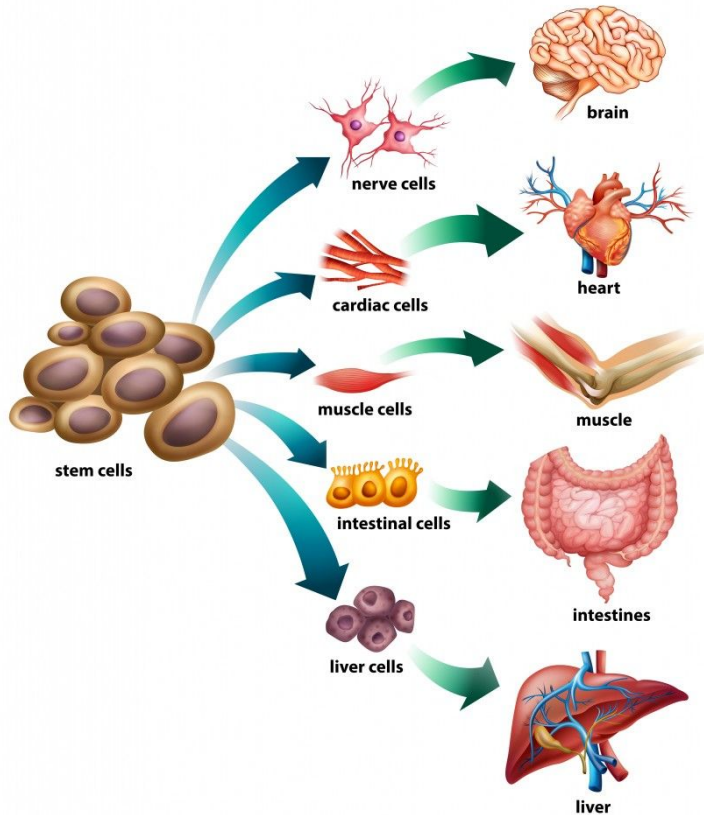


What signals a cell to produce specific proteins?



How does a cell become a multicellular organism?

Various Potential Application of Stem Cells



How does a cell become a multicellular organism?

