CONCEPT: SALTING OUT

●Salts affects protein _____.

□ At very low [salt], most proteins form _____ solids/precipitates.  Insoluble protein precipitate

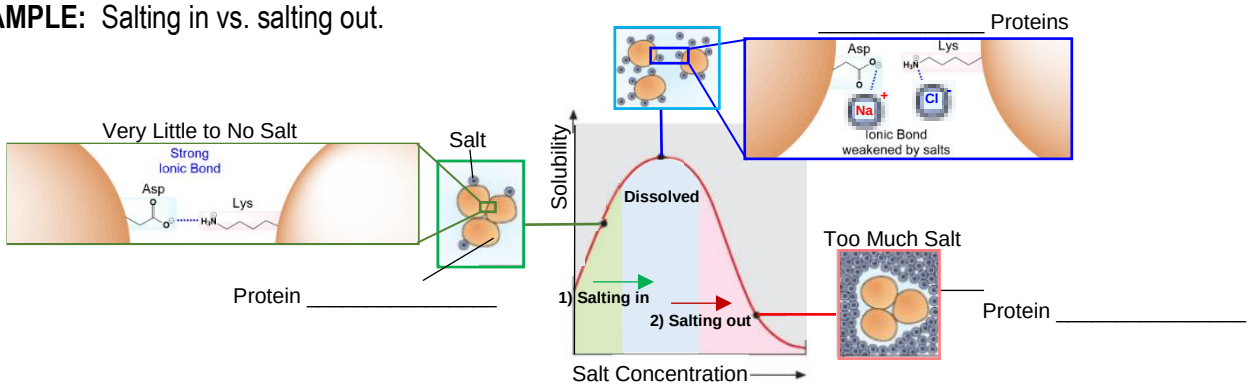
1) Salting ____: addition of _____ salt to *transition* proteins _____ a dissolved/soluble state.

□ Salt competes & _____ strength of interactions between proteins to increase solubility.

2) Salting _____: addition of _____ *of* salt to transition proteins _____ *of* a dissolved/soluble state.

□ Too much salt competes with _____ interactions, leaving little H_2O to hydrate & dissolve proteins, so they clump.

EXAMPLE: Salting in vs. salting out.



PRACTICE: Which statement best explains the basis of salting out?

a) Presence of some salt ions weakens ionic interactions between proteins, leading to greater protein solubility.

b) Too few salt ions can deprive proteins of H_2O solvent, leading to protein precipitation.

c) Addition of salt ions strengthens ionic interactions between proteins, leading to greater protein solubility.

d) Too many salt ions can deprive proteins of H_2O solvent, leading to protein precipitation.

3) Salting Out

●After differential centrifugation, _____ out removes unwanted proteins based on _____.

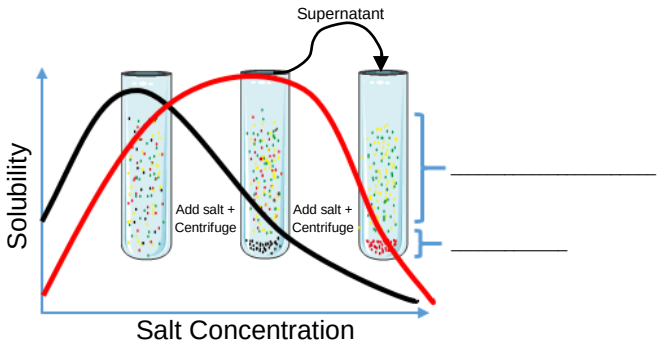
□ The [salt] at which a protein precipitates/salts-out _____ from protein to protein.

□ Salt, usually ammonium sulfate $(NH_4)_2SO_4$, is slowly _____ to the protein solution.

□ Protein precipitates have increased S value & can be _____ via centrifugation.

●Salting out does _____ perfectly purify a target-protein but can remove a significant amount of *unwanted* proteins.

EXAMPLE: Salting Out.



CONCEPT: SALTING OUT

PRACTICE: Salting out consists of adding _____ in order to _____.

a) Ammonium sulfate; alter the net charge of proteins.

b) Ammonium sulfate; alter the solubility of proteins.

c) Salt; neutralize acid/base reactions of proteins.

d) Salt; perfectly purify a protein of interest.