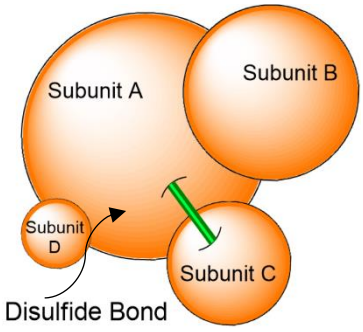
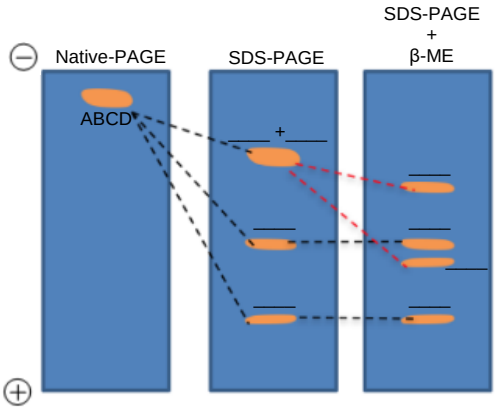
CONCEPT: SDS-PAGE STRATEGIES

●Unlike Native-PAGE, SDS-PAGE separates protein _____ that are *not* covalently linked.

□ Recall: β-mercaptoethanol (β-ME) can be used to _____ covalent disulfide bonds.

EXAMPLE: Label each protein band in the gels below with the appropriate protein subunits.





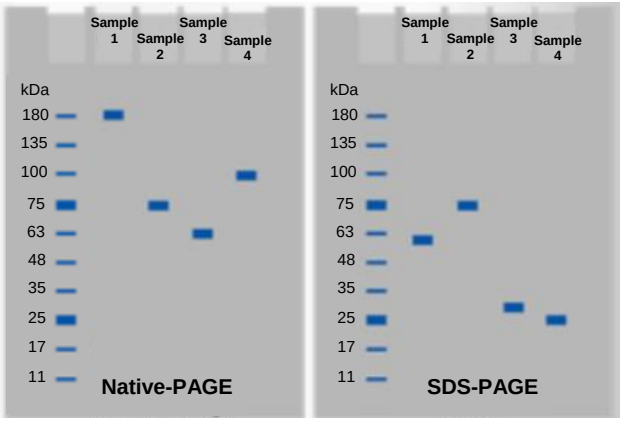
PRACTICE: Compare the Native & SDS PAGE gels to indicate if each sample is a monomer, dimer, trimer or tetramer.

a) Sample 1: _____

b) Sample 2: _____

c) Sample 3: _____

d) Sample 4: _____



PRACTICE: "Protein X" has a molecular mass of 400 kDa when measured by size-exclusion chromatography. When subjected to SDS-PAGE, Protein X gives 3 bands with molecular masses of 180, 160, & 60 kDa. When SDS-PAGE is conducted a second time but in the presence of β-mercaptoethanol (β-ME), 3 bands form again, but this time with molecular masses of 160, 90, and 60 kDa. What is the subunit composition of Protein X? (Hint: draw both SDS-PAGE gels).

a) Protein X has 3 subunits with masses of 160, 90 & 60 kDa.

b) Protein X has 4 subunits with masses of 160, 90, 90 & 60 kDa.

c) Protein X has 3 subunits with masses of 180, 160, & 60 kDa.

d) Protein X has 4 subunits with masses of 180, 160, 90 & 60 kDa.