

Figure 3.11 (a) Generation of new disulfide bonds in the presence of free thiol. (b) Altered intramolecular and intermolecular disulfides in a protein as a result of disulfide reduction and reoxidation.

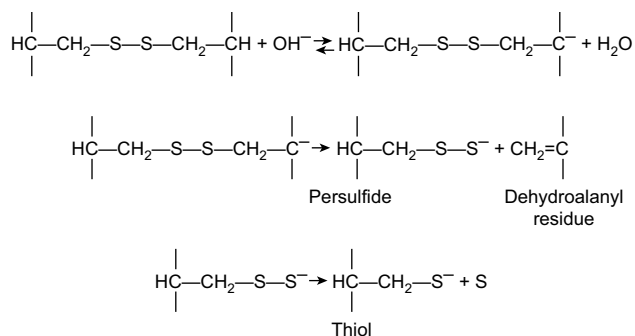


Figure 3.12 Generation of a free thiol from a β -elimination reaction of a disulfide bond. From Florence (1980).

mAbs often have a small amount of unpaired Cys residues (Zhang & Czupryn, 2002; Zhang et al., 2012), and thus there may be sufficient free thiol that participates in the mixed disulfide formation. During formulation development for an antifibrin monoclonal antibody the percent dimer formation increased as a function of pH suggesting the