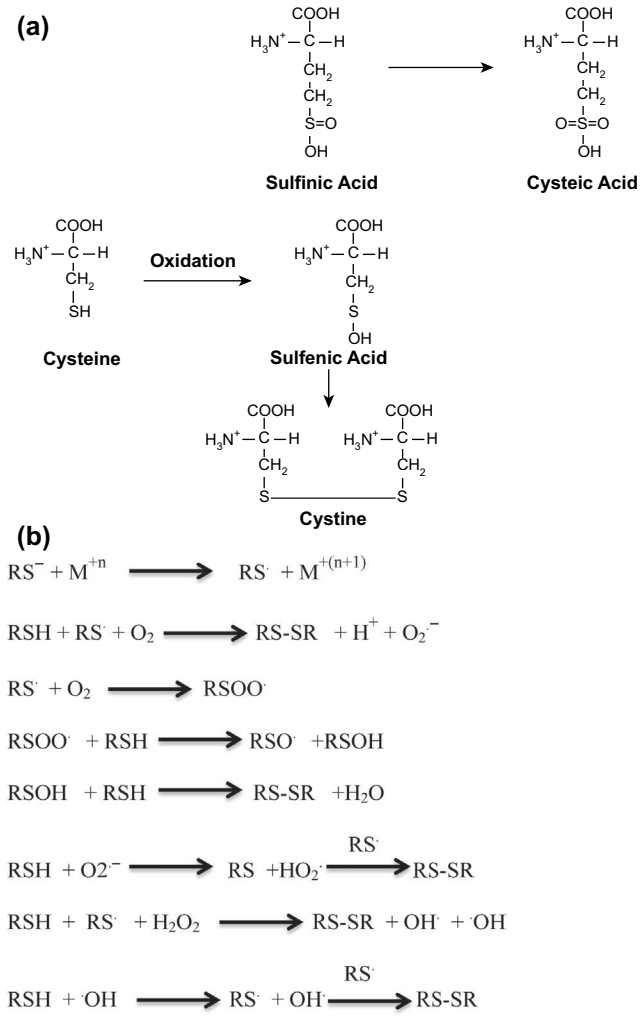

Figure 3.10 (a) Generation of disulfide cross-links (cysteine), sulfenic, sulfonic, and cysteic acids from H_2O_2 oxidation of Cys. (b) Proposed mechanism for metal-catalyzed oxidation of Cys.
Reproduced from Li, Schoneich, and Borchardt (1995a).

the pKa for the Cys residue appears to be decreased substantially, mainly by electrostatic interactions with surrounding Lys residues (Griffiths et al., 2002).

Cys oxidation and mixed disulfides in mAbs

Intermolecular disulfide cross-linking has been shown to occur in several mAbs. At first glance this is surprising since a free Cys residue is generally required for formation of mixed disulfides, and all Cys residues in a mAb are paired (Figure 1.2 (c)) so that there should not be any free thiol. However, it has been shown that recombinantly produced