ABSTRACT:
Recent studies have reported the biological prevalence of per- and poly-sulfides. In spite of the fact that both small molecule and protein persulfides have been found in significant quantities and are ubiquitous, the biological function of these species has yet to be established. Clearly, the biological utility of persulfides will be a function of their chemical properties and reactivity. Thus, we have examined the chemistry of persulfides (and compared it to the corresponding thiol species) as a prelude to understanding their function. We have found that persulfides possess chemical properties distinct from other biological sulfur species and that may be important to their biology. These properties will be discussed along with the possible biological roles of persulfides.