Assignment of Stereoheterotopic Groups

The Cahn-Ingold-Prelog sequence rule may be applied directly to the specification of stereoheterotopic ligands in prochiral molecules using the descriptors *pro-R* and *pro-S*. The assignment is done by selecting one of the stereoheterotopic ligands at the prochiral center and temporarily assigning it a higher priority than the other, *without disturbing the priorities of the remaining ligands*. If application of the sequence rule results in assignment of *R* as the configuration of the prochiral center, then the selected ligand is *pro-R*. If the prochiral center is *S*, then the selected ligand is *pro-S*. It is customary to designate prochirality in structures by subscripts *R* or *S* at the appropriate atoms.

For 1,3-propanediol, the prochiral hydrogens are as indicated below:

![Prochiral hydrogens in 1,3-propanediol](image)

(from *Advanced Organic Chemistry*, 3rd edition, by Carey and Sundberg)