

# How to Achieve a Codified Chemical Terminology—A Pilot Study

the issue about the disulfide bonds, and we have to deal with the definitions of *conformation* and of  $\beta$ -strand, both of which may turn out to necessitate even further definitions until we end at basic terms that may be assumed to have unique interpretations by all practitioners.

All in all, the establishment of usefully worded and consistent definitions of concepts in a hierarchy is an iterative process, in which all steps are subjected to the principles explained above.

## Future Steps towards a Consistent Terminology

Among the advantages of working with concept systems is that they can clarify concepts by pruning the descriptions. This is achieved by identifying the characteristics delimiting terms derived from the same superior concepts, which makes the differences between the concepts clear (e.g. *competitive inhibition* versus *noncompetitive inhibition* and *secondary*

*structure* versus *tertiary structure*). Using this methodology, the definitions of the concepts themselves can be clarified as well as the relations between concepts (such as *causes*, *inhibits*, or *activates*), which provides a better understanding of the concepts and their use.

The online edition of the Gold Book provides the possibility of seeing the relations between concepts. Figure 3 shows an example of the relations existing in Gold Book for a number of the concepts included in our work. This facility is useful for finding additional related concepts. However, it is not possible to figure out the types of relations.

Presenting concept systems with specified concept relations and concept characteristics can be useful not only for the general chemist to understand the enzyme chemist, but also for students at all levels to obtain a more conceptual understanding of the words used in chemical textbooks and articles. Just as the periodic table can help students get an overview of electro-negativity, number of electrons in each orbital shell, and atomic radii, a systematic display of the

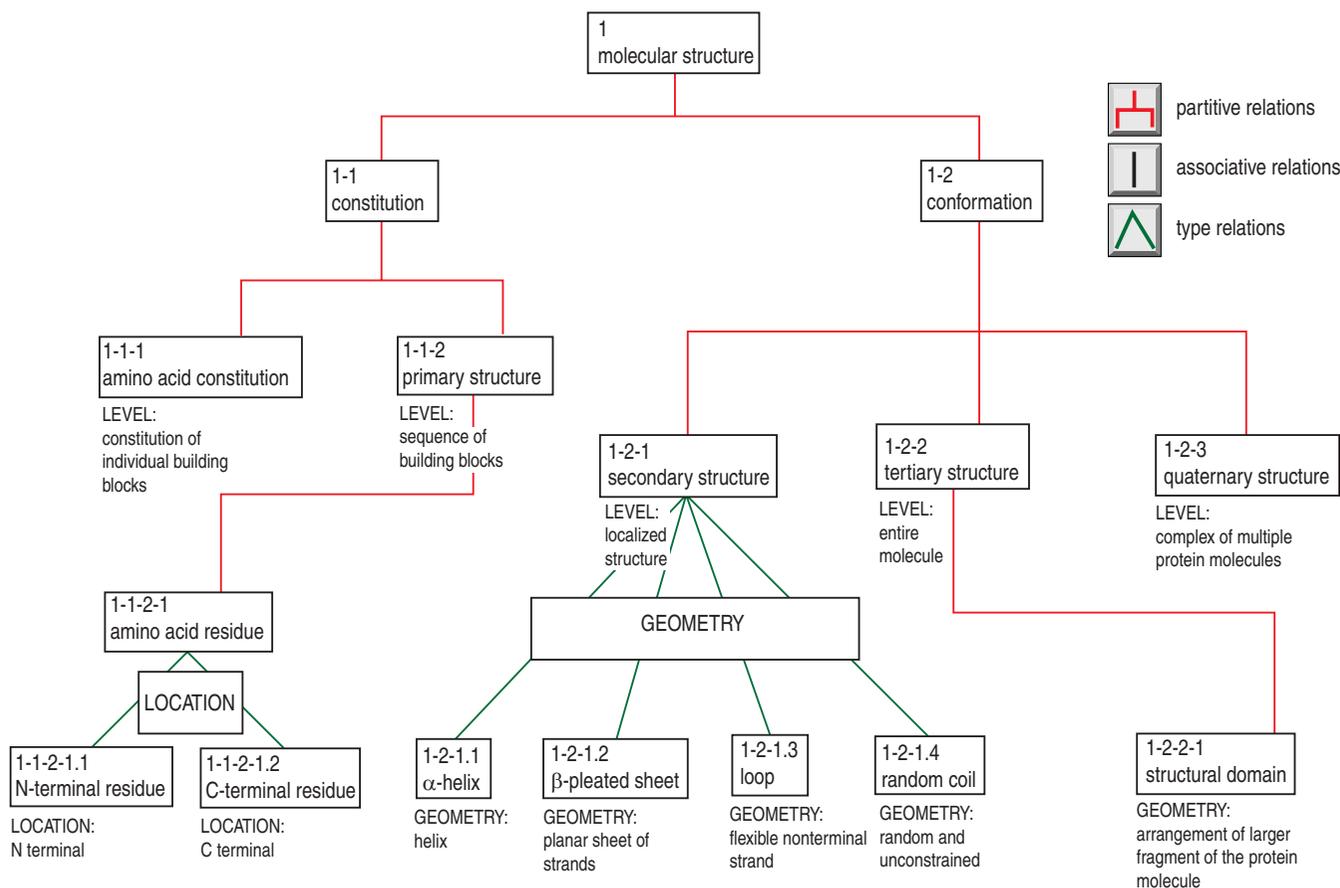


Figure 2. Extract of the protein structure diagram.