

ligands

1. In an inorganic coordination entity, the atoms or groups joined to the central atom.

Source:

Red Book, p. 146

2. In biochemistry: if it is possible or convenient to regard part of a polyatomic molecular entity as central, then the atoms, groups or molecules bound to that part are called ligands. Biochemical usage is thus wider, in that the central entity can be polyatomic. Thus H^+ may be a ligand for proteins and for citrate as well as for O^{2-} . It may even be a ligand for a univalent entity such as acetate: in other circumstances, AcO^- may be the ligand for H^+ , since the definition makes it clear that the view of which entity is central may change for convenience. Thus, four calcium ions are ligands for calmodulin, when the protein is regarded as central: four carboxylate groups of calmodulin ligate (are ligands of) each calcium ion when this ion is regarded as central. It is the ligand that is said to ligate the central entity, which is said to be ligated. When the hormone binding to a receptor is called a ligand, the receptor is thus regarded as the central entity. Biochemists should bear in mind that the usage in inorganic chemistry has been that ligands bind only single atoms, so they should be cautious in fields such as bioinorganic chemistry where confusion may be possible.

Source:

White Book, p. 335

PAC, 1994, 66, 1077 (*Glossary of terms used in physical organic chemistry (IUPAC Recommendations 1994)*) on page 1136