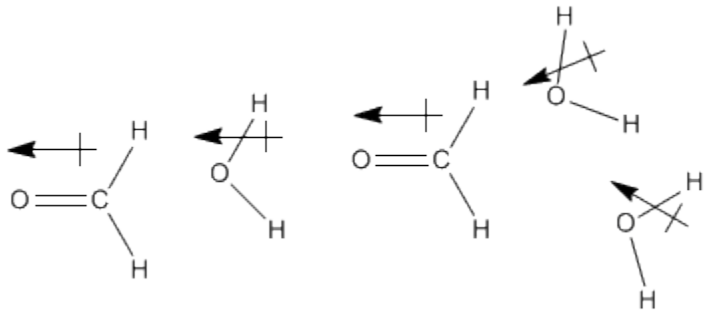
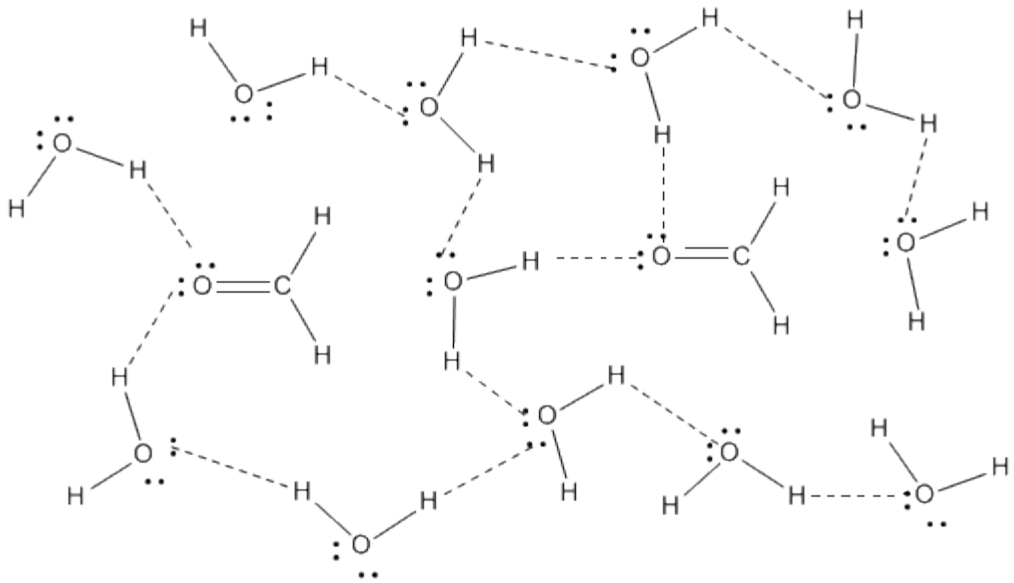
HYDROGEN BOND ACCEPTORS

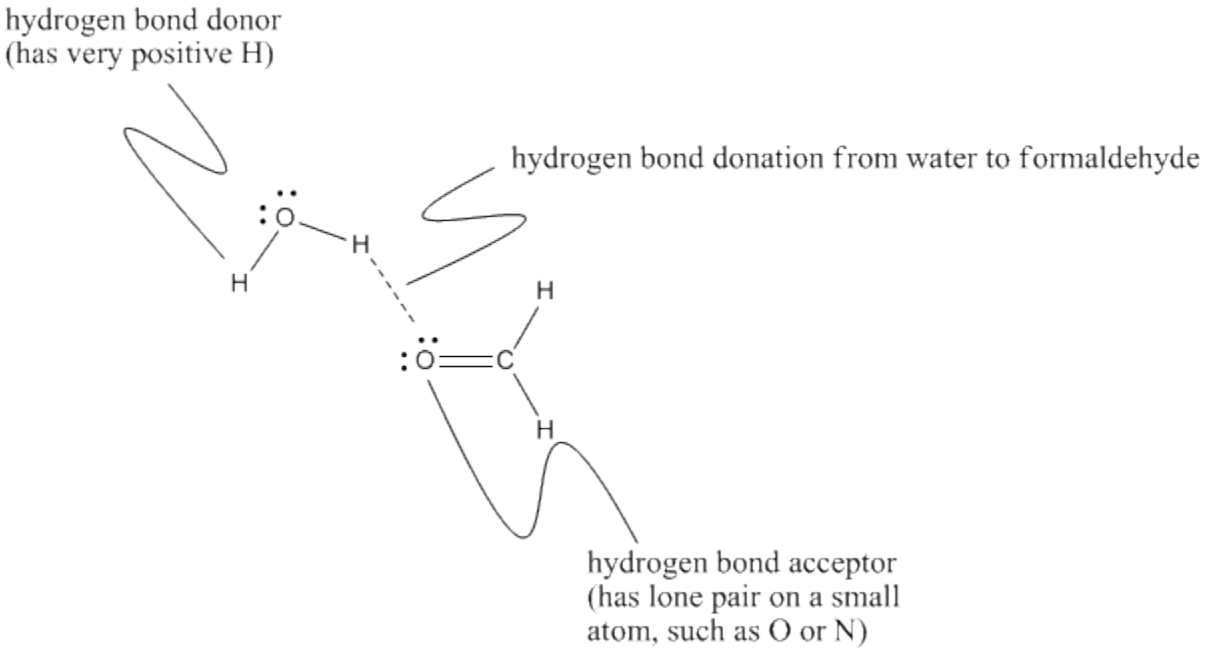
Formaldehyde is another example of a compound that dissolves well in water, and in fact the most common way to obtain formaldehyde is as an aqueous solution. You may have encountered such a solution in an anatomy or general biology lab, because formaldehyde solutions are used as preservatives for biological specimens. Of course, water and formaldehyde are both polar molecules, so it is easy to imagine their dipoles interacting together. However, formaldehyde does not have very strong hydrogen bonds like water does, so at first glance it seems as if formaldehyde might not interact with water molecules as strongly as water molecules interact with each other.



Actually, the interaction between these molecules may be stronger than it first seems. Although formaldehyde doesn't engage in strong hydrogen bonds by itself, in the presence of water or another protic compound -- one that contains a very positive hydrogen, such as H_2O, HF or NH_3 -- strong hydrogen bonds do form.



This occurs because formaldehyde has an oxygen atom with lone pairs and so it can act as a *hydrogen bond acceptor*. That means it can engage in hydrogen bonding with something that does have positive hydrogens that can interact with its lone pairs. The water in this case is acting as the *hydrogen bond donor* for formaldehyde. Hydrogen bond acceptors are often important in biological systems, where nearly everything takes place in the presence of water.



Source : http://employees.csbsju.edu/cschaller/Principles%20Chem/imf/SPh_bond_acceptors.htm