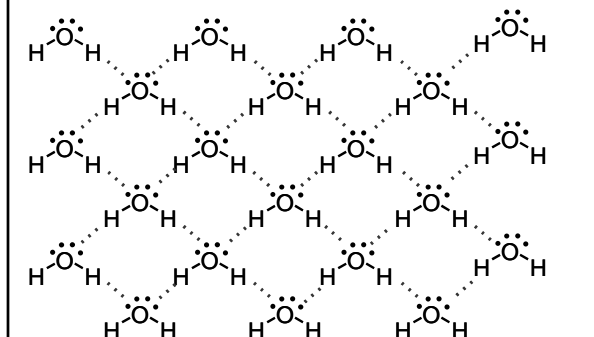
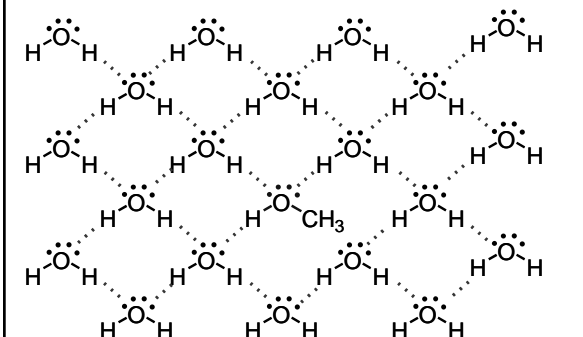


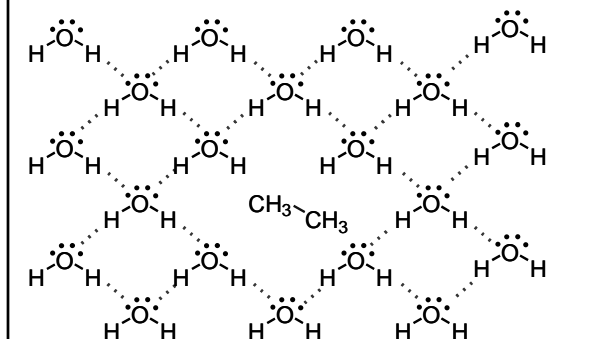
Is there a model for the behavior of molecules in water?



Why is methanol soluble in water?

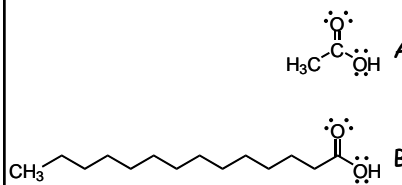


Why are hydrocarbons insoluble in water?

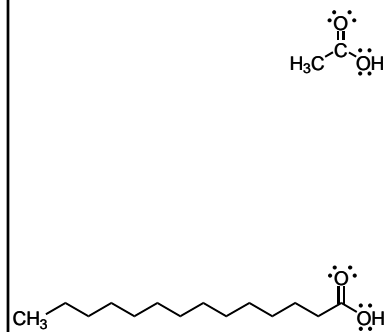


Parts of molecules that can form hydrogen bonds with water will be soluble (hydrophilic). Parts of molecules that cannot form hydrogen bonds to water will not be soluble (hydrophobic).

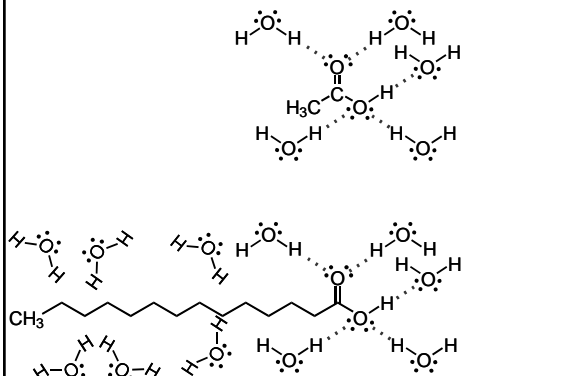
Which of the following compounds will be more soluble in water?



Which of the following molecules will be more soluble in water?



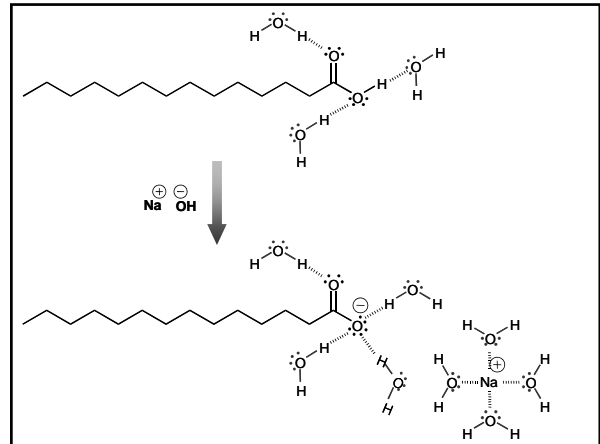
Which of the following molecules will be more soluble in water?



Choose the order that has the following compounds arranged correctly with respect to increasing solubility in water?

CCCCCCCCCCCCCCCCCC(=O)OC 1  
CCCCCCCCCCCCCCCCCC(=O)[O-].[Na+] 2  
CCCCCCCCCCCCCCCCCC(=O)O 3

A  $\xrightarrow{1\ 2\ 3}$  increasing solubility   
 B  $\xrightarrow{1\ 3\ 2}$  increasing solubility   
 C  $\xrightarrow{2\ 1\ 3}$  increasing solubility   
 D  $\xrightarrow{2\ 3\ 1}$  increasing solubility



Ibuprofen (Advil) and aspirin inhibit pain due to inflammation by inhibiting prostaglandin synthetase.

Which amino acid residue would be predicted to be most effective at forming a strong intermolecular interaction with ibuprofen?

CC(C)C1=CC=C(C=C1)CC(=O)O ↔ CC(C)C1=CC=C(C=C1)CC(=O)[O-]  
 ibuprofen

A NC(CCCNC)C(=O)N arginine  
 B NC(CC(=O)[O-])C(=O)N aspartic acid  
 C NC(Cc1ccccc1)C(=O)N phenyl alanine  
 D NC(CCCCN)C(=O)N lysine

text