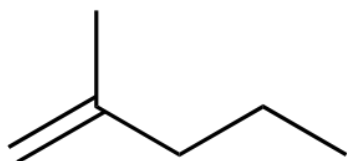
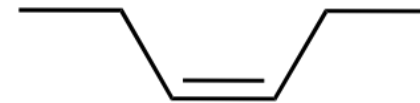


# Explain each of the following.

$I_2$  is a solid,  $Br_2$  is a liquid, and  $Cl_2$  is a gas.



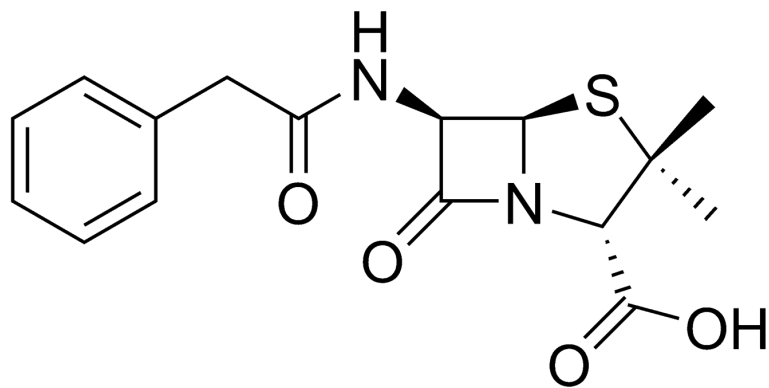
has a lower melting point than



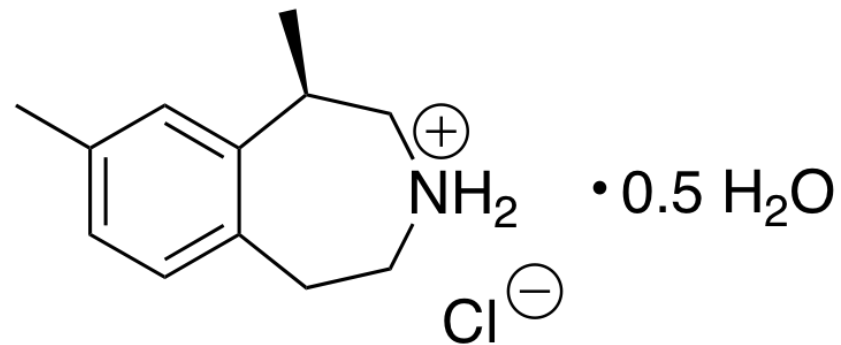
Alcohol	Solubility in water (g/L)
$CH_3OH$	soluble
$CH_3CH_2OH$	soluble
$CH_3(CH_2)_2OH$	soluble
$CH_3(CH_2)_3OH$	73
$CH_3(CH_2)_4OH$	22
$CH_3(CH_2)_5OH$	5.9
$CH_3(CH_2)_6OH$	3.3
$CH_3(CH_2)_7OH$	insoluble

Let's draw some hydrogen bonding with H<sub>2</sub>O.

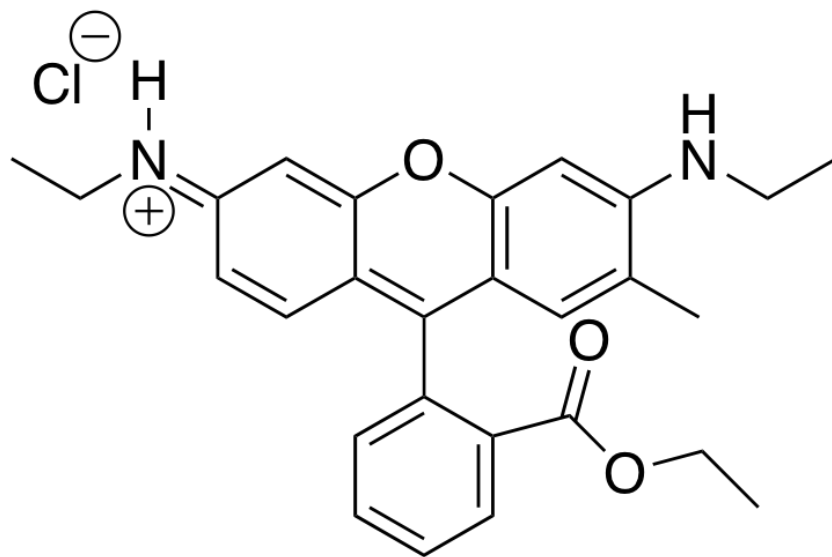
# Identify the functional groups!



penicillin



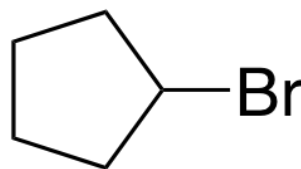
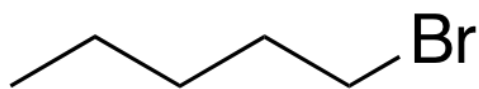
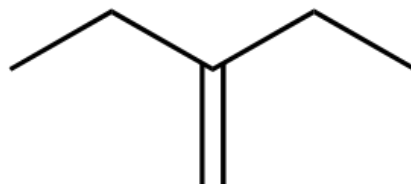
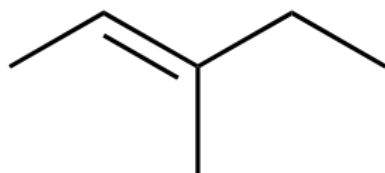
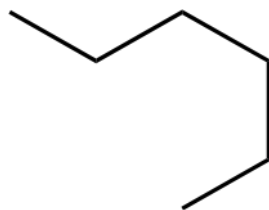
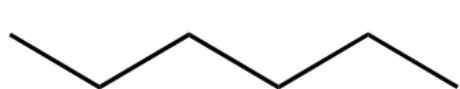
Belviq (FDA approved 6/28/12)



rhodamine 6G

Draw all isomers for  $C_5H_{12}$

# Constitutional isomers, same molecule, or neither?



# More Questions

- What about the other groups such as methyl? Are they considered functional group?
- What is the difference between a ketone and an aldehyde? How does the difference between the aldehyde and ketone carbonyl location correlate to a difference in physical properties?
- What is the difference between "X" and "R"?

# A Few More Questions

- If there are both single and double bonds between carbon atoms in a molecule, how do we deem if they are alkanes or alkenes?
- Is Van der Waal's always present in molecules consisting of different elements?
- How do different electron geometry affect intermolecular forces?

# Quick Project

- Find an example of intermolecular forces playing an important role in biology, medicine, or another field of interest to you. Write a brief summary of this example and share with a neighbor.