

## Organic Functional Group Handout

Family	Group	Example
Alkane	only single bonds	$\text{CH}_3\text{CH}_3$
Alkene	$\text{C} = \text{C}$	$\text{CH}_2 = \text{CH}_2$
Alkyne	$\text{C} \equiv \text{C}$	$\text{CH} \equiv \text{CH}$
Alcohol	$\text{ROH}$	$\text{CH}_3\text{CH}_2\text{OH}$
Thiol	$\text{RSH}$	$\text{CH}_3\text{CH}_2\text{SH}$
Ether	$\text{ROR}'$	$\text{CH}_3\text{OCH}_3$
Amine	$\text{RNH}_2$	$\text{CH}_3\text{NH}_2$
Amide	$\begin{array}{c} \text{O} \\ \parallel \\ \text{R} - \text{C} - \text{NH}_2 \end{array}$	$\begin{array}{c} \text{O} \\ \parallel \\ \text{CH}_3 - \text{C} - \text{NH}_2 \end{array}$
Aldehyde	$\begin{array}{c} \text{O} \\ \parallel \\ \text{R} - \text{C} - \text{H} \end{array}$	$\begin{array}{c} \text{O} \\ \parallel \\ \text{CH}_3 - \text{C} - \text{H} \end{array}$
Ketone	$\begin{array}{c} \text{O} \\ \parallel \\ \text{R} - \text{C} - \text{R}' \end{array}$	$\begin{array}{c} \text{O} \\ \parallel \\ \text{CH}_3 - \text{C} - \text{CH}_3 \end{array}$
Carboxylic Acid	$\begin{array}{c} \text{O} \\ \parallel \\ \text{R} - \text{C} - \text{OH} \end{array}$	$\begin{array}{c} \text{O} \\ \parallel \\ \text{CH}_3 - \text{C} - \text{OH} \end{array}$
Ester	$\begin{array}{c} \text{O} \\ \parallel \\ \text{R} - \text{C} - \text{OR}' \end{array}$	$\begin{array}{c} \text{O} \\ \parallel \\ \text{CH}_3 - \text{C} - \text{OCH}_3 \end{array}$
Cyano	$\text{R-CN}$	$\text{CH}_3\text{CN}$
Chloro	$\text{R-Cl}$	$\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}$
Phosphate	$\begin{array}{c} \text{OH} \\   \\ \text{R} - \text{O} - \text{P} = \text{O} \\   \\ \text{OH} \end{array}$	$\begin{array}{c} \text{O} \\ \parallel \\ \text{HO} - \text{P} - \text{O} - \text{Sugar} - \\   \\ \text{OH} \end{array}$ <p style="text-align: center; margin-left: 100px;">Adenine 5'</p>

Molecule	Functional Groups Present
	
	
	
	
	
	
	