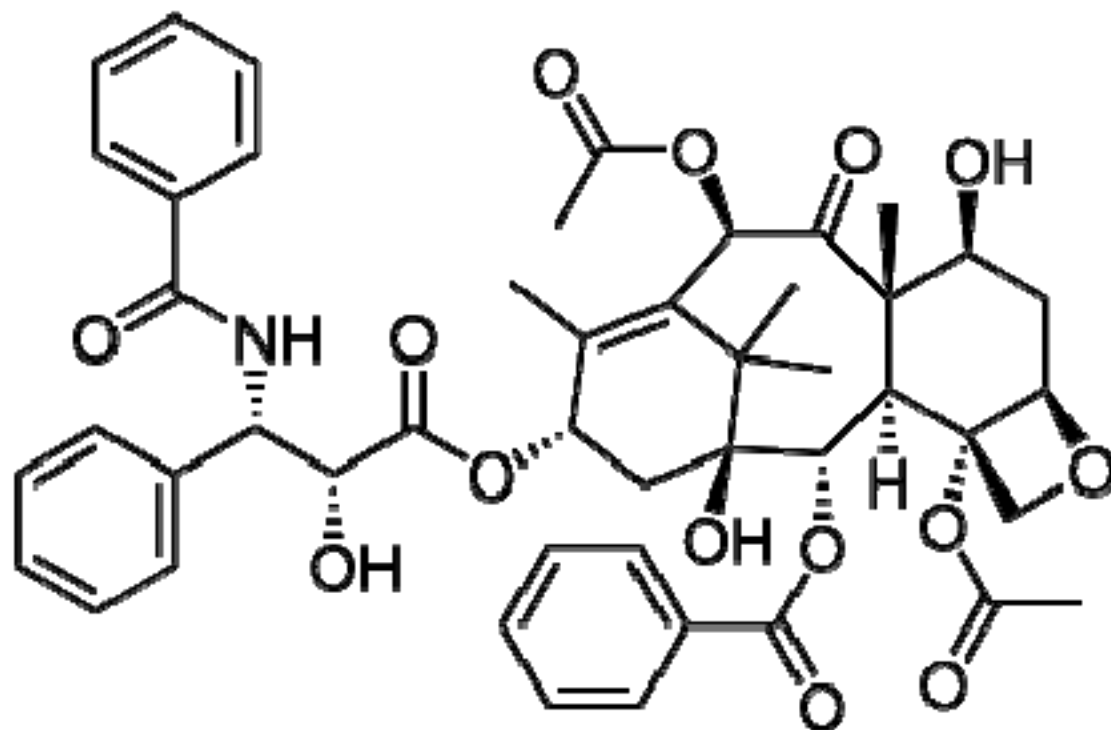


Name _____

ID# _____

In-class exercise



Identify and provide quantities for each functional group present:

Alkene

Phenyl ring

Alkyl halide (1°, 2°, 3°)

Alcohol (1°, 2°, 3°)

Ether

Ester

Carboxylic acid

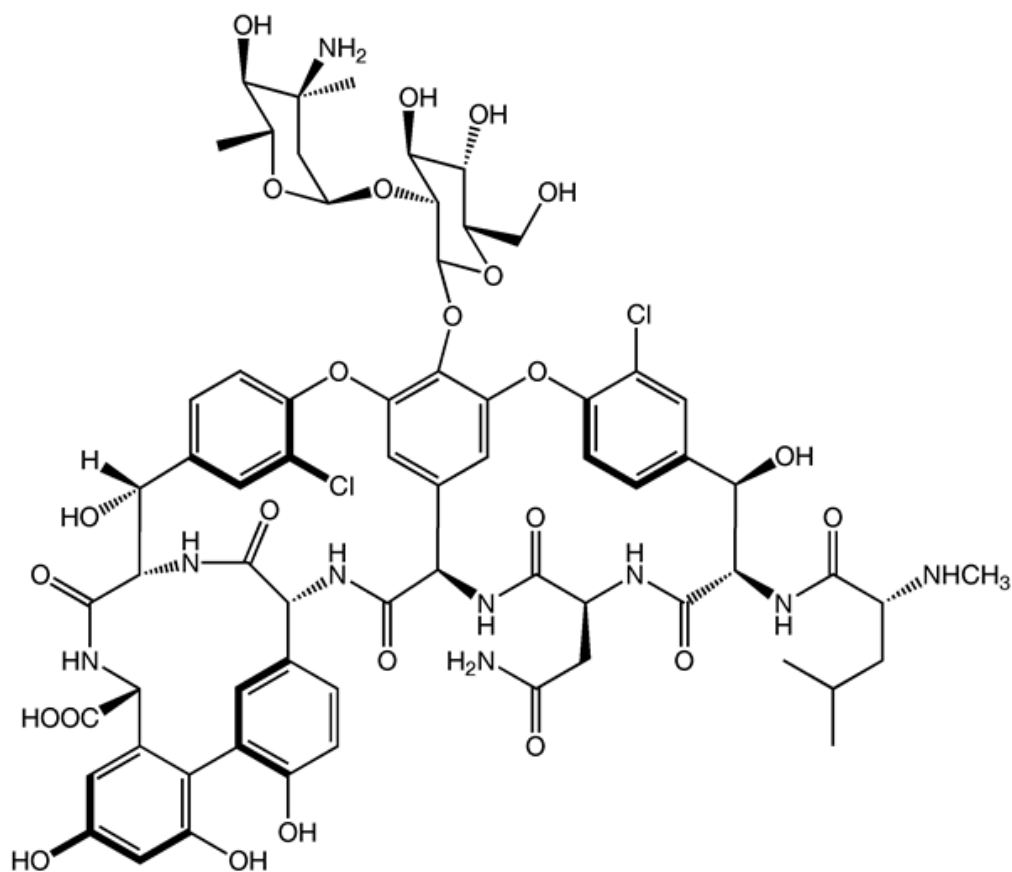
Ketone

Amide

Amine (1°, 2°, 3°)

Paclitaxel "taxol" is now used to treat patients with [lung](#), [ovarian](#), [breast cancer](#), head and neck cancer, and advanced forms of [Kaposi's sarcoma](#).

In-class exercise



Identify and provide quantities for each functional group present:

Alkene

Phenyl ring

Alkyl halide (1°, 2°, 3°)

Alcohol (1°, 2°, 3°)

Ether

Ester

Carboxylic acid

Ketone

Amide

Amine (1°, 2°, 3°)

Vancomycin is an antibiotic for treating infections in cancer patients; mode of action is an interference with the cell wall synthesis

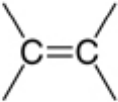
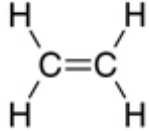
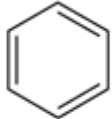
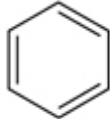
Functional Groups

Hydrocarbons are compounds made up of only the elements carbon and hydrogen. They may be aliphatic or aromatic.

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Table 3.1

Hydrocarbons

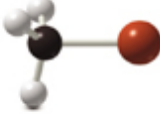
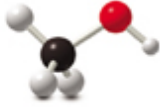

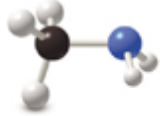


Type of compound	General structure	Example	Functional group
Alkane	$R-H$	CH_3CH_3	--
Alkene			double bond
Alkyne	$-C\equiv C-$	$H-C\equiv C-H$	triple bond
Aromatic compound			phenyl group

Functional Groups C-Z σ bond

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Table 3.2

Compounds Containing C-Z σ Bonds

Type of compound	General structure	Example	3-D structure	Functional group
Alkyl halide	$\text{R}-\ddot{\text{X}}:$ <p>(X = F, Cl, Br, I)</p>	$\text{CH}_3-\ddot{\text{Br}}:$		-X halo group
Alcohol	$\text{R}-\ddot{\text{O}}\text{H}$	$\text{CH}_3-\ddot{\text{O}}\text{H}$		-OH hydroxy group
Ether	$\text{R}-\ddot{\text{O}}-\text{R}$	$\text{CH}_3-\ddot{\text{O}}-\text{CH}_3$		-OR alkoxy group
Amine	$\text{R}-\ddot{\text{N}}\text{H}_2 \text{ or}$ $\text{R}_2-\ddot{\text{N}}\text{H} \text{ or } \text{R}_3-\ddot{\text{N}}$	$\text{CH}_3-\ddot{\text{N}}\text{H}_2$		-NH ₂ amino group
Thiol	$\text{R}-\ddot{\text{S}}\text{H}$	$\text{CH}_3-\ddot{\text{S}}\text{H}$		-SH mercapto group
Sulfide	$\text{R}-\ddot{\text{S}}-\text{R}$	$\text{CH}_3-\ddot{\text{S}}-\text{CH}_3$		-SR alkylthio group

