

CHEMISTRY DICTIONARY



Recommended by CMC of Vinnytsia National Medical University (protocol № 5 from 2.03.2011)

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Reviewer:

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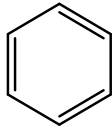
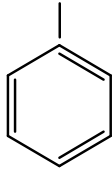
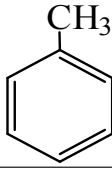
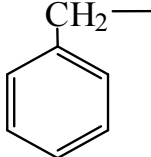
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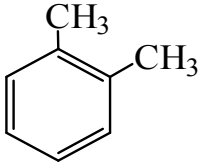
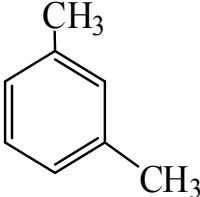
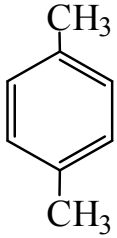
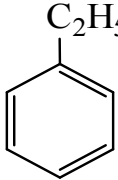
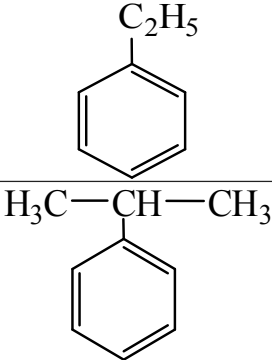
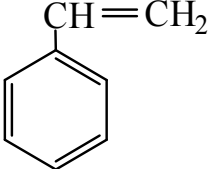
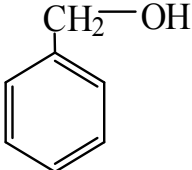
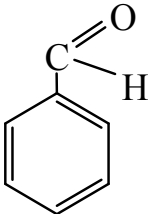
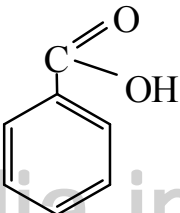
**Shitova T.V. – Senior-lecturer
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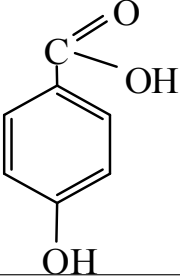
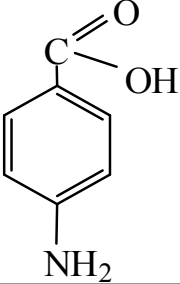
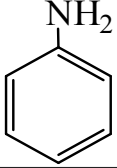
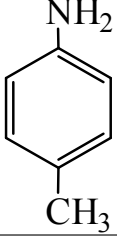
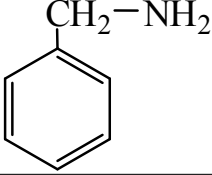
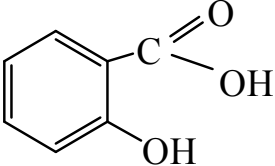
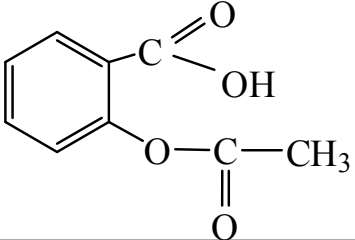
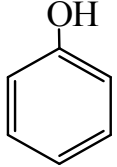
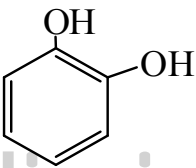
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Text editor – Shunkov V.S.
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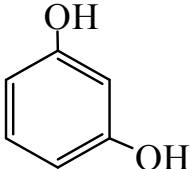
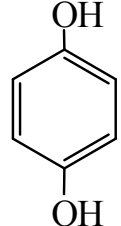
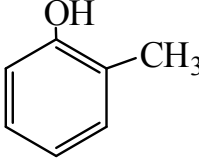
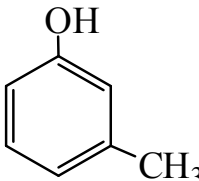
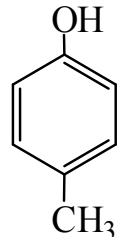
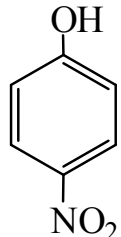
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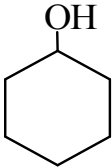
Alkanes		Radicals	
Name	Formula	Name	Formula
Methane	CH_4	Methyl	$\text{CH}_3\text{—}$
Ethane	$\text{CH}_3\text{—CH}_3$	Ethyl	$\text{CH}_3\text{—CH}_2\text{—}$
Propane	$\text{CH}_3\text{—CH}_2\text{—CH}_3$	Propyl	$\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—}$
		Isopropyl	$\begin{array}{c} \text{CH}_3\text{—CH—CH}_3 \\ \end{array}$
Butane	$\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—CH}_3$	Butyl	$\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—CH}_2\text{—}$
		Secondary butyl	$\begin{array}{c} \text{CH}_3\text{—CH}_2\text{—CH—CH}_3 \\ \end{array}$
Isobutane (2 – Methyl – propane)	$\begin{array}{c} \text{CH}_3\text{—CH—CH}_3 \\ \\ \text{CH}_3 \end{array}$	Isobutyl	$\begin{array}{c} \text{CH}_3\text{—CH—CH}_2\text{—} \\ \\ \text{CH}_3 \end{array}$
		Tertiary butyl	$\begin{array}{c} \\ \text{CH}_3\text{—C—CH}_3 \\ \\ \text{CH}_3 \end{array}$
Pentane	$\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—CH}_2\text{—CH}_3$	Pentyl	$\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—CH}_2\text{—CH}_2\text{—}$
		Secondary pentyl	$\begin{array}{c} \text{CH}_3\text{—CH}_2\text{—CH}_2\text{—CH—CH}_3 \\ \end{array}$
Isopentane (2 – Methylbutane)	$\begin{array}{c} \text{CH}_3\text{—CH}_2\text{—CH—CH}_3 \\ \\ \text{CH}_3 \end{array}$	Isopentyl	$\begin{array}{c} \text{CH}_3\text{—CH}_2\text{—CH—CH}_2\text{—} \\ \\ \text{CH}_3 \end{array}$
		Tertiarypentyl	$\begin{array}{c} \\ \text{CH}_3\text{—CH}_2\text{—C—CH}_3 \\ \\ \text{CH}_3 \end{array}$
2,2 – dimethyl – propane	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3\text{—C—CH}_3 \\ \\ \text{CH}_3 \end{array}$		
Halogenoalkanes			
Chloromethane			CH_3Cl
Trichloromethane (chloroform)			CHCl_3
Carbon tetrachloride			CCl_4

Triiodide (iodoform)	CHI_3
Chloroethane	$\text{CH}_3\text{—CH}_2\text{—Cl}$
Chloropropane	$\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—Cl}$
2 – Chloropropane	$\begin{array}{c} \text{CH}_3\text{—CH—CH}_3 \\ \\ \text{Cl} \end{array}$
Chlorobutane	$\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—CH}_2\text{—Cl}$
2 – Chlorobutane	$\begin{array}{c} \text{CH}_3\text{—CH}_2\text{—CH—CH}_3 \\ \\ \text{Cl} \end{array}$
Alkenes	
Ethene	$\text{H}_2\text{C}=\text{CH}_2$
Propene	$\text{H}_2\text{C}=\text{CH—CH}_3$
Butene –1	$\text{H}_2\text{C}=\text{CH—CH}_2\text{—CH}_3$
Butene – 2	$\text{H}_3\text{C—CH}=\text{CH—CH}_3$
Pentene – 1	$\text{H}_2\text{C}=\text{CH—CH}_2\text{—CH}_2\text{—CH}_3$
Pentene – 2	$\text{H}_3\text{C—CH}_2\text{—CH}=\text{CH—CH}_3$
Arenes (Benzene and its derivatives)	
Benzene	
Phenyl	
Toluene	
Benzyl	

<p>Xylene: o – xylene (o – dimethylbenzene)</p>	
<p>m – xylene (m – dimethylbenzene)</p>	
<p>p – xylene (p – dimethylbenzene)</p>	
<p>Ethylbenzene</p>	
<p>Isopropylbenzene (cumene)</p>	
<p>Sterol (vinyl benzene)</p>	
<p>Benzyl alcohol</p>	
<p>Benzaldehyde</p>	
<p>Benzoic acid</p>	

<p>Paraoxybenzoic acid</p>	
<p>Para-aminobenzoic acid</p>	
<p>Aniline (aminobenzene)</p>	
<p>Para-Methylaniline</p>	
<p>Benzylamine</p>	
<p>Salicylic acid</p>	
<p>Acetylsalicylic acid</p>	
<p>Phenol</p>	
<p>Ortho-dioxybenzene (pirokatekhin)</p>	

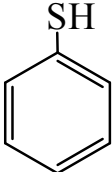
Meta-dioxybenzene (resorcin)	
Para-dioxybenzene (hydroquinone)	
Cresol: ortho - cresol (ortho - methylphenol)	
meta - cresol (meta - methylphenol)	
para - cresol (para - methylphenol)	
Para - nitrophenol	
Alcohols (R-O- alkoxy group)	
Methanol	$\text{CH}_3\text{—OH}$
Methoxy	$\text{CH}_3\text{—O—}$
Ethanol	$\text{CH}_3\text{—CH}_2\text{—OH}$
Ethoxy	$\text{CH}_3\text{—CH}_2\text{—O—}$
Propanol	$\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—OH}$
Isopropanol	$\begin{array}{c} \text{CH}_3\text{—CH—CH}_3 \\ \\ \text{OH} \end{array}$

Butanol	$\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—CH}_2\text{—OH}$
Secondary butanol	$\begin{array}{c} \text{H}_3\text{C—CH}_2\text{—CH—CH}_3 \\ \\ \text{OH} \end{array}$
Isobutanol	$\begin{array}{c} \text{HO—CH}_2\text{—CH—CH}_3 \\ \\ \text{CH}_3 \end{array}$
Tributanol	$\begin{array}{c} \text{OH} \\ \\ \text{CH}_3\text{—C—CH}_3 \\ \\ \text{CH}_3 \end{array}$
Cyclohexanol	
Vinyl alcohol	$\text{H}_2\text{C=CH—OH}$
Polyatomic alcohols	
Ethylene glycol (ethandiol)	$\begin{array}{c} \text{CH}_2\text{—CH}_2 \\ \quad \\ \text{OH} \quad \text{OH} \end{array}$
Glycerol (propantriol)	$\begin{array}{c} \text{CH}_2\text{—CH—CH}_2 \\ \quad \quad \\ \text{OH} \quad \text{OH} \quad \text{OH} \end{array}$
Xylitol	$\begin{array}{c} \text{CH}_2\text{—CH—CH—CH—CH}_2 \\ \quad \quad \quad \quad \\ \text{OH} \quad \text{OH} \quad \text{OH} \quad \text{OH} \quad \text{OH} \end{array}$
Sorbitol	$\begin{array}{c} \text{CH}_2\text{—CH—CH—CH—CH—CH}_2 \\ \quad \quad \quad \quad \quad \\ \text{OH} \quad \text{OH} \quad \text{OH} \quad \text{OH} \quad \text{OH} \quad \text{OH} \end{array}$
Ester (ethers)	
Dimethyl ether	$\text{CH}_3\text{—O—CH}_3$
Diethyl ether (medical ether)	$\text{C}_2\text{H}_5\text{—O—C}_2\text{H}_5$
Phenyl ethyl ether	$\text{C}_6\text{H}_5\text{—O—C}_2\text{H}_5$
Amines	
Methylamine	$\text{CH}_3\text{—NH}_2$
Ethylamine	$\text{CH}_3\text{—CH}_2\text{—NH}_2$
Propylamine	$\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—NH}_2$

Isopropylamine (2 – aminopropane)	$\begin{array}{c} \text{CH}_3-\text{CH}-\text{CH}_3 \\ \\ \text{NH}_2 \end{array}$
Butylamine	$\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{NH}_2$
Secondary – butylamine	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}-\text{CH}_3 \\ \\ \text{NH}_2 \end{array}$
Primary amine (methylamine)	CH_3-NH_2
Secondary –amine (dimethylamine)	$\text{CH}_3-\text{NH}-\text{CH}_3$
Tertiary amine (trimethylamine)	$\begin{array}{c} \text{CH}_3-\text{N}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$
Quaternary basis	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3-\text{N}^+-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$
Biogenic amines	
Calamine (ethanolamine)	$\begin{array}{c} \text{CH}_2-\text{CH}_2 \\ \quad \\ \text{NH}_2 \quad \text{OH} \end{array}$
Histamine	$\begin{array}{c} \text{N} \\ \diagup \quad \diagdown \\ \text{CH}_2-\text{CH}_2 \\ \\ \text{NH}_2 \\ \\ \text{H} \end{array}$
Tryptamine	$\begin{array}{c} \text{CH}_2-\text{CH}_2 \\ \\ \text{NH}_2 \\ \\ \text{H} \end{array}$
Serotonin	$\begin{array}{c} \text{HO} \\ \\ \text{CH}_2-\text{CH}_2 \\ \\ \text{NH}_2 \\ \\ \text{H} \end{array}$
Norepinephrine	$\begin{array}{c} \text{OH} \\ \\ \text{HO}-\text{CH}-\text{CH}_2-\text{NH}_2 \\ \\ \text{OH} \end{array}$
Adrenaline	$\begin{array}{c} \text{OH} \\ \\ \text{HO}-\text{CH}-\text{CH}_2-\text{NH}-\text{CH}_3 \\ \\ \text{OH} \end{array}$

Choline	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3-\text{N}^+-\text{CH}_2-\text{CH}_2-\text{OH} \\ \\ \text{CH}_3 \end{array}$
Acetylcholine	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3-\text{N}^+-\text{CH}_2-\text{CH}_2-\text{O}-\text{C}(=\text{O})-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$
Putrescine	$\begin{array}{c} \text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2 \\ \qquad \qquad \qquad \\ \text{NH}_2 \qquad \qquad \qquad \text{NH}_2 \end{array}$
Cadaverine	$\begin{array}{c} \text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2 \\ \qquad \qquad \qquad \qquad \qquad \\ \text{NH}_2 \qquad \qquad \qquad \qquad \qquad \text{NH}_2 \end{array}$

Thiols (mercaptans)

Methanethiol (mercaptomethane)	CH_3-SH
Ethanethiol	$\text{CH}_3-\text{CH}_2-\text{SH}$
Propanethiol	$\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{SH}$
Isopropanethiol	$\begin{array}{c} \text{CH}_3-\text{CH}-\text{CH}_3 \\ \\ \text{SH} \end{array}$
Dimethyl sulfide	$\text{CH}_3-\text{S}-\text{CH}_3$
Thiophenol	

Aldehydes

Methanal (formaldehyde, formic)	$\begin{array}{c} \text{O} \\ // \\ \text{H}-\text{C} \\ \backslash \\ \text{H} \end{array}$
Ethanal (acetaldehyde, acetic)	$\begin{array}{c} \text{O} \\ // \\ \text{H}_3\text{C}-\text{C} \\ \backslash \\ \text{H} \end{array}$
Trichloroacetic aldehyde	$\begin{array}{c} \text{O} \\ // \\ \text{Cl}_3\text{C}-\text{C} \\ \backslash \\ \text{H} \end{array}$
Propanal (propionic)	$\begin{array}{c} \text{O} \\ // \\ \text{CH}_3-\text{CH}_2-\text{C} \\ \backslash \\ \text{H} \end{array}$
Butanal (oil)	$\begin{array}{c} \text{O} \\ // \\ \text{CH}_3-\text{CH}_2-\text{CH}_2-\text{C} \\ \backslash \\ \text{H} \end{array}$

Ketones


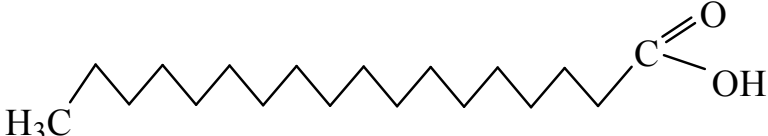
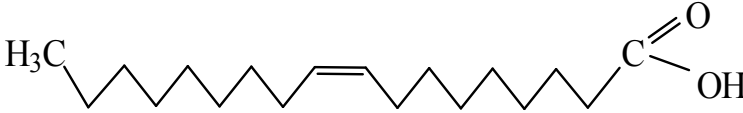
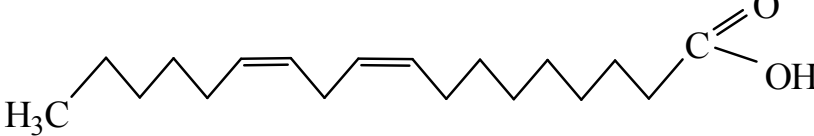
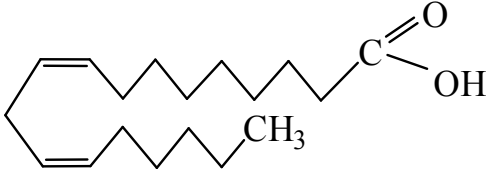
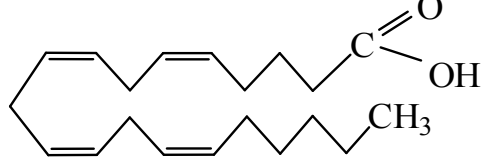
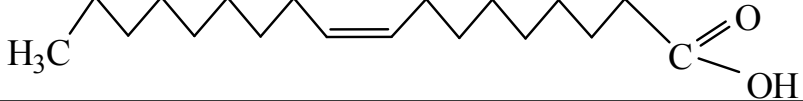
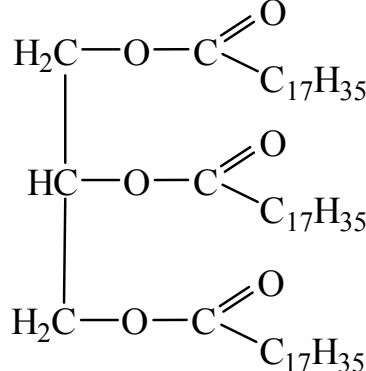
Acetone (dimethylketone)	$\begin{array}{c} \text{CH}_3-\text{C}-\text{CH}_3 \\ \parallel \\ \text{O} \end{array}$
Methylethylketone	$\begin{array}{c} \text{CH}_3-\text{C}-\text{C}_2\text{H}_5 \\ \parallel \\ \text{O} \end{array}$
Phenylethylketone (propiophenone)	$\begin{array}{c} \text{C}_6\text{H}_5-\text{C}-\text{C}_2\text{H}_5 \\ \parallel \\ \text{O} \end{array}$
Carbonic acid	
Formate (methanoic, formic)	$\begin{array}{c} \text{H}-\text{C} \\ \parallel \quad \backslash \\ \text{O} \quad \text{OH} \end{array}$
Acetate (ethanoic, acetic)	$\begin{array}{c} \text{H}_3\text{C}-\text{C} \\ \parallel \quad \backslash \\ \text{O} \quad \text{OH} \end{array}$
Propionate (propanoic)	$\text{CH}_3-\text{CH}_2-\text{C} \begin{array}{l} \parallel \\ \text{O} \\ \backslash \\ \text{OH} \end{array}$
Butyrate (butanoic, oil)	$\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{C} \begin{array}{l} \parallel \\ \text{O} \\ \backslash \\ \text{OH} \end{array}$
Dicarboxylic acids	
Oxalate (sorrel)	$\begin{array}{c} \text{O} \quad \quad \text{O} \\ \parallel \quad \parallel \\ \text{HO}-\text{C}-\text{C}-\text{OH} \end{array}$
Malonate (malonic)	$\begin{array}{c} \text{O} \quad \quad \text{O} \\ \parallel \quad \parallel \\ \text{HO}-\text{C}-\text{CH}_2-\text{C}-\text{OH} \end{array}$
Succinate (amber, butanedioic acid)	$\begin{array}{c} \text{O} \quad \quad \text{O} \\ \parallel \quad \parallel \\ \text{HO}-\text{C}-\text{CH}_2-\text{CH}_2-\text{C}-\text{OH} \end{array}$
Glucarate (glutaric)	$\begin{array}{c} \text{O} \quad \quad \text{O} \\ \parallel \quad \parallel \\ \text{HO}-\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{C}-\text{OH} \end{array}$
Oxyacids	
Lactate (milk, 2 – oxypropane)	$\begin{array}{c} \text{CH}_3-\text{CH}-\text{C} \\ \quad \quad \parallel \quad \backslash \\ \quad \quad \text{O} \quad \text{OH} \\ \quad \quad \\ \quad \quad \text{OH} \end{array}$
β – Oxybutyrate (β – hydroxybutyric, 3 – oxobutanoate)	$\begin{array}{c} \text{CH}_3-\text{CH}-\text{CH}_2-\text{C} \\ \quad \quad \quad \quad \parallel \quad \backslash \\ \quad \quad \quad \quad \text{O} \quad \text{OH} \\ \quad \quad \quad \quad \\ \quad \quad \quad \quad \text{OH} \end{array}$
Malate (apple, 2 – oxybutanedioic)	$\begin{array}{c} \text{O} \quad \quad \text{O} \\ \parallel \quad \parallel \\ \text{HO}-\text{C}-\text{CH}_2-\text{CH}-\text{C}-\text{OH} \\ \quad \quad \quad \quad \\ \quad \quad \quad \quad \text{OH} \end{array}$

Citrate (lemon acid)	$ \begin{array}{c} \text{OH} \\ \\ \text{O}=\text{C}-\text{CH}_2-\text{C}-\text{CH}_2-\text{C}=\text{O} \\ \quad \quad \\ \text{HO} \quad \quad \text{O} \\ \quad \quad \quad \text{C} \\ \quad \quad \quad // \\ \quad \quad \quad \text{O} \\ \quad \quad \quad \backslash \\ \quad \quad \quad \text{OH} \end{array} $
Tartare (wine acid)	$ \begin{array}{c} \text{O}=\text{C}-\text{CH}-\text{CH}-\text{C}=\text{O} \\ \quad \quad \\ \text{HO} \quad \quad \text{OH} \\ \quad \quad \quad \\ \quad \quad \quad \text{OH} \end{array} $
Oxoacids	
Pyruvate (PA, pyruvic, 2 – oxopropane)	$ \begin{array}{c} \text{O} \\ // \\ \text{CH}_3-\text{C}-\text{C} \\ \quad \quad \backslash \\ \text{O} \quad \quad \text{OH} \end{array} $
Acetoacetate (3 – oxobutanoate)	$ \begin{array}{c} \text{O} \\ // \\ \text{CH}_3-\text{C}-\text{CH}_2-\text{C} \\ \quad \quad \backslash \\ \text{O} \quad \quad \text{OH} \end{array} $
Oxaloacetate (2 – oxobutandioic)	$ \begin{array}{c} \text{O}=\text{C}-\text{CH}_2-\text{C}-\text{C}=\text{O} \\ \quad \quad \\ \text{HO} \quad \quad \text{O} \\ \quad \quad \quad \backslash \\ \quad \quad \quad \text{O} \end{array} $
α – Ketoglutarate (α – ketoglutaric, 2 – oxopentadioic)	$ \begin{array}{c} \text{O}=\text{C}-\text{C}-\text{CH}_2-\text{CH}_2-\text{C}=\text{O} \\ \quad \quad \\ \text{HO} \quad \quad \text{O} \\ \quad \quad \quad \backslash \\ \quad \quad \quad \text{O} \end{array} $
Unsaturated carboxylic acid	
Acrylate (acrylic, 2 – propenoic)	$ \begin{array}{c} \text{O} \\ // \\ \text{CH}_2=\text{CH}-\text{C} \\ \quad \quad \quad \backslash \\ \quad \quad \quad \text{OH} \end{array} $
Crotonic (2 – butenoic)	$ \begin{array}{c} \text{O} \\ // \\ \text{CH}_3-\text{CH}=\text{CH}-\text{C} \\ \quad \quad \quad \backslash \\ \quad \quad \quad \text{OH} \end{array} $
Anhydrides	
Formic	$ \begin{array}{c} \text{O} \\ // \\ \text{H}-\text{C} \\ \quad \quad \backslash \\ \quad \quad \text{O} \\ \quad \quad // \\ \quad \quad \text{O} \\ \quad \quad \backslash \\ \quad \quad \text{H}-\text{C} \\ \quad \quad \quad \backslash \\ \quad \quad \quad \text{O} \end{array} $
Acetic	$ \begin{array}{c} \text{O} \\ // \\ \text{H}_3\text{C}-\text{C} \\ \quad \quad \backslash \\ \quad \quad \text{O} \\ \quad \quad // \\ \quad \quad \text{O} \\ \quad \quad \backslash \\ \quad \quad \text{H}_3\text{C}-\text{C} \\ \quad \quad \quad \backslash \\ \quad \quad \quad \text{O} \end{array} $
Halogenanhydrides	
Methyl chloride	$ \begin{array}{c} \text{O} \\ // \\ \text{H}-\text{C} \\ \quad \quad \backslash \\ \quad \quad \text{Cl} \end{array} $

Acetyl chloride	$\text{H}_3\text{C}-\text{C} \begin{array}{l} \text{=O} \\ \text{-Cl} \end{array}$
Benzoyl chloride	$\text{C}_6\text{H}_5-\text{C} \begin{array}{l} \text{=O} \\ \text{-Cl} \end{array}$
Amides, nitriles	
Acetamide	$\text{H}_3\text{C}-\text{C} \begin{array}{l} \text{=O} \\ \text{-NH}_2 \end{array}$
Benzamide	$\text{C}_6\text{H}_5-\text{C} \begin{array}{l} \text{=O} \\ \text{-NH}_2 \end{array}$
Acetonitrile	$\text{H}_3\text{C}-\text{C}\equiv\text{N}$
Benzonitrile	$\text{C}_6\text{H}_5-\text{C}\equiv\text{N}$
Esther	
Methyl formate (methyl methanoate)	$\text{H}-\text{C} \begin{array}{l} \text{=O} \\ \text{-O-CH}_3 \end{array}$
Ethyl formate	$\text{H}-\text{C} \begin{array}{l} \text{=CH}_2 \\ \text{-O-C}_2\text{H}_5 \end{array}$
Methyl acetate	$\text{H}_3\text{C}-\text{C} \begin{array}{l} \text{=O} \\ \text{-O-CH}_3 \end{array}$
Ethyl acetate	$\text{H}_3\text{C}-\text{C} \begin{array}{l} \text{=O} \\ \text{-O-C}_2\text{H}_5 \end{array}$
Methyl benzoate	$\text{C}_6\text{H}_5-\text{C} \begin{array}{l} \text{=O} \\ \text{-O-CH}_3 \end{array}$

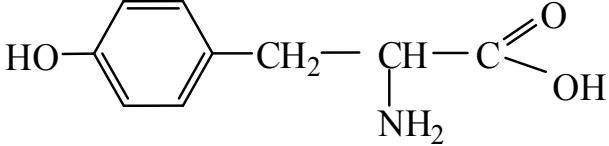
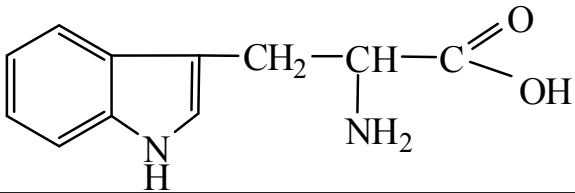
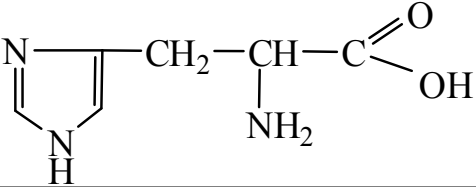
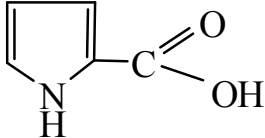
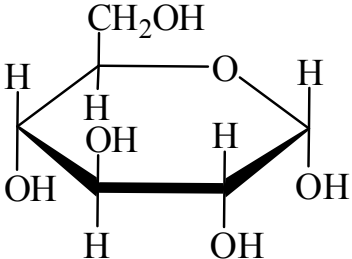
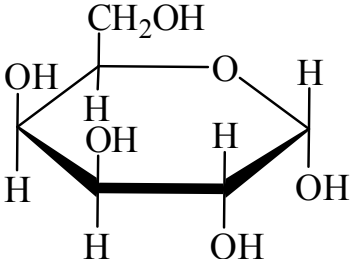
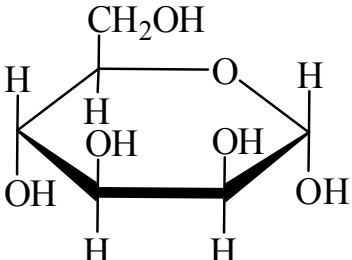
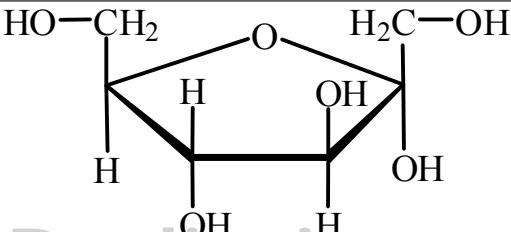
Lipids

Higher fatty acids

Palmitic $C_{15}H_{31}COOH$	
Stearic $C_{17}H_{35}COOH$	
Oleic $C_{17}H_{33}COOH$	
Linoleic $C_{17}H_{31}COOH$	
Linolenic $C_{17}H_{29}COOH$	
Arachidonic $C_{19}H_{31}COOH$	
Oleic $C_{17}H_{33}COOH$	
Triacylglycerides (tristearine)	

Phosphatidic acid	$ \begin{array}{c} \text{H}_2\text{C}-\text{O}-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{C}_{17}\text{H}_{35} \end{array} \\ \\ \text{HC}-\text{O}-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{C}_{17}\text{H}_{33} \end{array} \\ \\ \text{H}_2\text{C}-\text{O}-\text{PH} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{OH} \end{array} \end{array} $
Phosphoglyceride (phosphatidylcholine)	$ \begin{array}{c} \text{H}_2\text{C}-\text{O}-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{C}_{17}\text{H}_{35} \end{array} \\ \\ \text{HC}-\text{O}-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{C}_{17}\text{H}_{33} \end{array} \\ \\ \text{H}_2\text{C}-\text{O}-\text{P} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{OH} \end{array} \\ \\ \text{O} \\ \\ \text{H}_2\text{C}-\text{CH}_2-\text{N}^+ \begin{array}{l} \nearrow \text{CH}_3 \\ \searrow \text{CH}_3 \\ \text{CH}_3 \end{array} \end{array} $
Amino acids	
Monoaminomonocarboxylic acid	
Glycine (Gly)	$ \begin{array}{c} \text{CH}_2-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{OH} \end{array} \\ \\ \text{NH}_2 \end{array} $
Alanine (Ala)	$ \begin{array}{c} \text{CH}_3-\text{CH}-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{OH} \end{array} \\ \\ \text{NH}_2 \end{array} $
Valine* (Val)	$ \begin{array}{c} \text{CH}_3-\text{CH}-\text{CH}-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{OH} \end{array} \\ \quad \\ \text{CH}_3 \quad \text{NH}_2 \end{array} $
Leucine* (Leu)	$ \begin{array}{c} \text{CH}_3-\text{CH}-\text{CH}_2-\text{CH}-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{OH} \end{array} \\ \quad \\ \text{CH}_3 \quad \text{NH}_2 \end{array} $
Isoleucine* (ile)	$ \begin{array}{c} \text{CH}_3-\text{CH}_2-\text{CH}-\text{CH}-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{OH} \end{array} \\ \quad \\ \text{CH}_3 \quad \text{NH}_2 \end{array} $
Monoaminodicarboxylic acid	

Aspartic (Asp) (aspartate)	$\begin{array}{c} \text{O} & & \text{O} \\ & & \\ \text{HO}-\text{C} & -\text{CH}_2- & \text{CH}-\text{C} \\ & & \\ & & \text{NH}_2 \end{array}$
Glutamic acid (Glu)	$\begin{array}{c} \text{O} & & \text{O} \\ & & \\ \text{HO}-\text{C} & -\text{CH}_2-\text{CH}_2- & \text{CH}-\text{C} \\ & & \\ & & \text{NH}_2 \end{array}$
Asparagine (Asn)	$\begin{array}{c} \text{O} & & \text{O} \\ & & \\ \text{H}_2\text{N}-\text{C} & -\text{CH}_2- & \text{CH}-\text{C} \\ & & \\ & & \text{NH}_2 \end{array}$
Glutamine (Gln)	$\begin{array}{c} \text{O} & & \text{O} \\ & & \\ \text{H}_2\text{N}-\text{C} & -\text{CH}_2-\text{CH}_2- & \text{CH}-\text{C} \\ & & \\ & & \text{NH}_2 \end{array}$
Diaminomonocarboxylic acid	
Lysine*(Lys)	$\begin{array}{c} \text{H}_2\text{N}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2- & \text{CH}-\text{C} \\ & \\ & \text{NH}_2 \end{array}$
Arginine (Arg)	$\begin{array}{c} \text{NH}_2-\text{C}-\text{NH}-\text{CH}_2-\text{CH}_2-\text{CH}_2- & \text{CH}-\text{C} \\ & \\ \text{NH} & \text{NH}_2 \end{array}$
Oxyamino acid	
Serine*(Ser)	$\begin{array}{c} \text{CH}_2-\text{CH}-\text{C} \\ & \\ \text{OH} & \text{NH}_2 \end{array}$
Threonine (Thr)	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}-\text{CH}-\text{C} \\ & \\ \text{OH} & \text{NH}_2 \end{array}$
Sulfur-containing amino acids	
Cysteine (Cys)	$\begin{array}{c} \text{CH}_2-\text{CH}-\text{C} \\ & \\ \text{SH} & \text{NH}_2 \end{array}$
Methionine*(Met)	$\text{H}_3\text{C}-\text{S}-\text{CH}_2-\text{CH}_2-\text{CH}-\text{C}$ $\quad \quad \quad \quad \\ \quad \quad \quad \quad \text{NH}_2$
Aromatic amino acids	
Phenylalanine*(Phe)	$\text{C}_6\text{H}_5-\text{CH}_2-\text{CH}-\text{C}$ $\quad \quad \quad \quad \\ \quad \quad \quad \quad \text{NH}_2$

Tyrosine (Tyr)	
Heterocyclic amino acids	
Tryptophan*(Trp)	
Histidine (His)	
Proline (Pro)	
Carbohydrates	
Monosaccharides	
Glucose	
Galactose	
Mannose	
Fructose	

Ribose	
Deoxyribose	
Xylose	
Glucose - 6 phosphate	
Glucosamine	
Disaccharides	
Sucrose	
Lactose	

Maltose	
Cellobiose	
Nitrogenous base	
Pyrimidine line	
Uracil	
Thymine	
Cytosine	
Purine line	
Adenine	
Guanine	