

VIII.A CARBOXYLIC ACIDS (RCO₂H)

Carboxylic acids, which have the family ending 'oic acid'. The key points are:

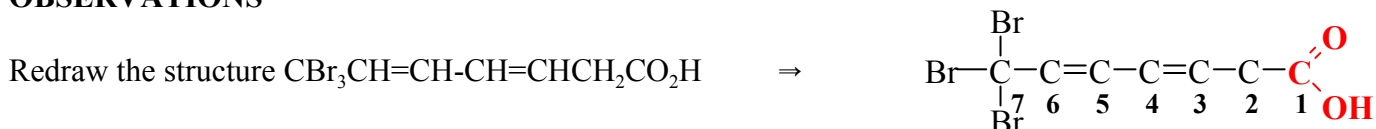
- The carboxylic acid carbon is included in the numbering the longest chain.
- The position of the carboxylic acid is not written in the name of the compound. It is assumed to be C-1 because it MUST be at the one end of a chain.

EXCEPTION

If two carboxylic acids are present, then the position of both groups are listed.

Examples

- Give the IUPAC name for $\text{CBr}_3\text{CH}=\text{CH}-\text{CH}=\text{CHCH}_2\text{CO}_2\text{H}$

OBSERVATIONS

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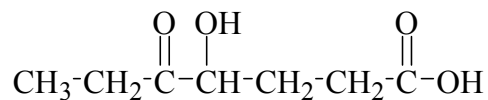
	OBSERVATION	IMPLICATION
Parent Group and Site	Carboxylic acid	-oic acid
Longest Carbon Chain/Ring	7 Carbons	hept....
# C=C or C≡C bonds and Site	2 C=C's at C-3 & C-5	3,5-heptadien...
Final Word		3,5-heptadienoic acid
Substituents and Sites	3 Br's all at C-7	7,7,7- tribromo
Alphabetizing substituents		7,7,7- tribromo

SOLUTION Compound is: 7,7,7-tribromo-3,5-heptadienoic acid

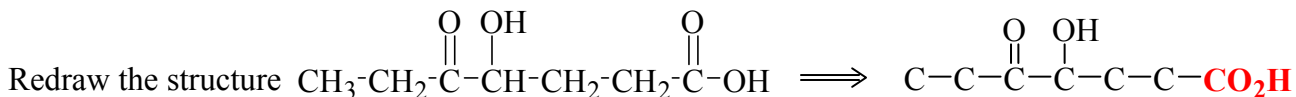
[Notes: 1. The hepta and diene letters are added to make the name easier to pronounce.

- Notice that the '3,5-' term comes before the 'hept'. Always place the number of the site of the carbon-carbon π bonds before the first syllable of the final 'word'.]

2. Give the IUPAC name for



OBSERVATIONS



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	OBSERVATION	IMPLICATION
Parent Group and Site	Carboxylic acid	-oic acid
Longest Carbon Chain/Ring	7 Carbons	hept..
# C=C or C≡C bonds and Site	None	heptan
Final Word		heptanoic acid
Substituents and Sites	OH at C-4 Ketone at C-5	4-hydroxy- 5-oxo
Alphabetizing substituents		4-hydroxy-5-oxo

SOLUTION Compound is 4-hydroxy-5-oxo-heptanoic acid

[Notice that the position of the carboxylic acid group, C-1, is not listed in the name]