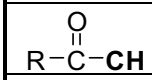
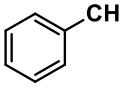
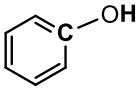
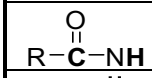
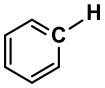
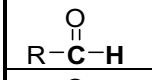
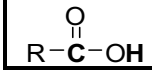
NMR Characteristic Table

Structural Residue	Name	^{1}H δ (ppm)	^{13}C δ (ppm)
R-**C**H_3	Primary alkyl	~ 0.9	5 – 20
R_2-**C**H_2	Secondary alkyl	~ 1.3	20 – 30
R_3-**C**H	Tertiary alkyl	~ 1.5	30 – 50
R_4**C**	Quaternary alkyl	N.A.	30 – 45
C=C-**C**H	Allylic	~ 1.7	20 – 40
	α to Carbonyl	2 – 2.7	30 – 50
C≡**C-H**	Alkynyl	2 – 3	65 – 95
CH-I	Alkyl Iodide	2 – 4	-20 – 10 (can be less than zero ppm!)
	Benzylic	2.2 – 3	10 – 40
CH-N	Amine	2.4 – 3.4	20 – 65
CH-Br	Alkyl Bromide	2.5 – 4	20 – 40
CH-Cl	Alkyl Chloride	3 – 4	25 – 50
CH-O	Alcohol or Ether	3.3 – 4	50 – 90
CH-F	Alkyl Fluoride	4 – 4.5	70 – 80
R-O**H**	Hydroxyl	0.5 – 5 (often broad)	N.A.
R-N**H**	Amino	0.5 – 5 (often broad)	N.A.
	Phenol	4 – 8	~ 160
C=**C-H**	Alkenyl (Vinyl)	4.5 – 6	100 – 160
	Amide	5 – 8	150 – 185
	Aromatic	6.5 – 8	100 – 160
	Aldehyde (^{1}H or ^{13}C) or Ketone (^{13}C only)	9 – 10	190 – 210 (aldehyde or ketone carbon)
	Carboxyl	10 – 12	160 – 180 (acid or ester carboxyl carbon)