

C-H-O chemistry of some naturally occurring organic substances

This is a plot of H/C and O/C atomic ratios in some naturally occurring organic substances, and some related C-bearing compounds. The plot is analogous to a Van Krevlen diagram but covers a larger range of H/C and O/C. Dashed lines indicate nominal charge on C assuming charge of 1+ for H and 2- for O.

Sources include Table 3-2 of Drever, J.I., 1988, *Geochemistry of Natural Waters* (2nd edn); Table 1 of Hatcher et al. in Aiken, G.R., et al., 1985, *Humic Substances in Soil, Sediment, and Water*; New York, John Wiley & Sons, 692 p.; Kononova, M. M., 1966, *Soil Organic Matter: its nature, its role in soil formation and in soil fertility* (2nd edn): Oxford, Pergamon Press, 544 p.; Figure 7 of Orem and Finkelman (2003) in *Treatise on Geochemistry* 7: 191-222; Schnitzer, in Schnitzer, M., and Khan, S.U., 1978, *Soil Organic Matter*: Amsterdam, Elsevier, 319 p.; Schulten and Schnitzer (1997) *Soil Science* 162:115-130; Smith, K.L., Smoot, L.D., Fletcher, T.H., and Pugmire, R.J., 1994, *The Structure and Reaction Processes of Coal*: New York, Plenum, 471 p.; Tani, M. & Higashi, T., 1999, Vertical distribution of low molecular weight aliphatic carboxylic acids in some forest soils of Japan: *European Journal of Soil Science*, v. 50 p. 217-226; Figures II.4.11 and II.7.6 of Tissot and Welte, 1978, *Petroleum Formation and Occurrence*; Wood, Scott A., U. of Idaho Dept. of Geological Sciences GEOL464/564 course notes.

