

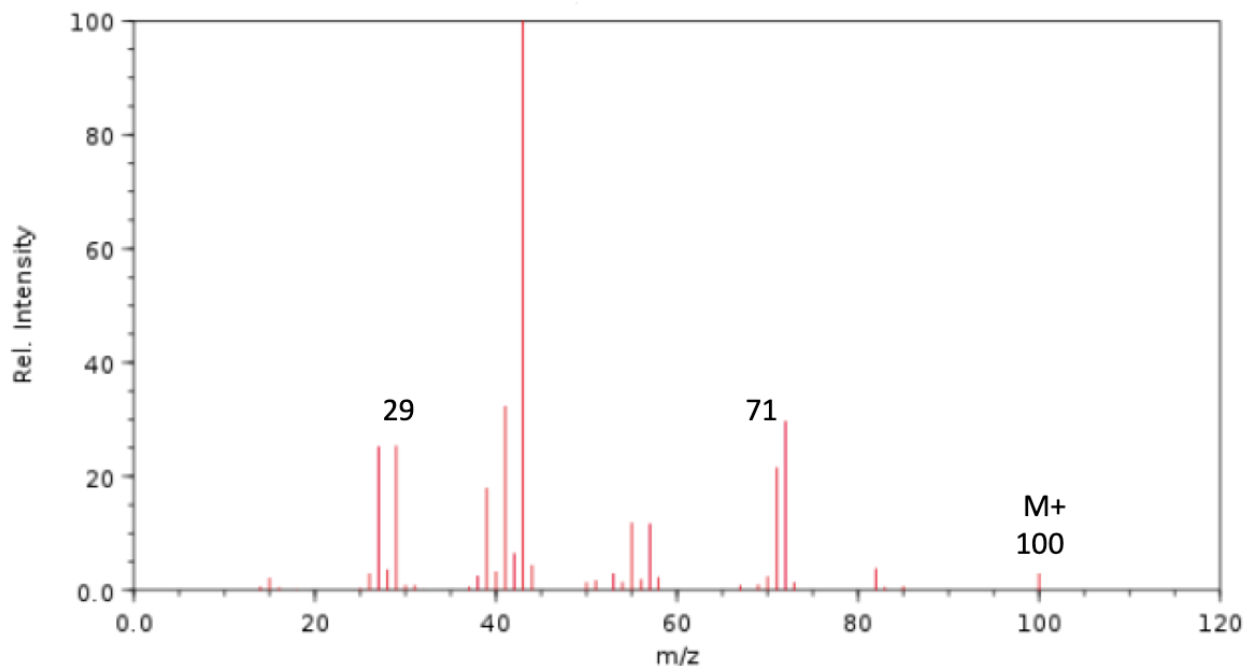
HL Spectroscopic identification of organic compounds: Question 15

Identify **Compound O** from the data (a – d) given and explain how you arrived at your answer

(a) Elemental analysis of **Compound O**

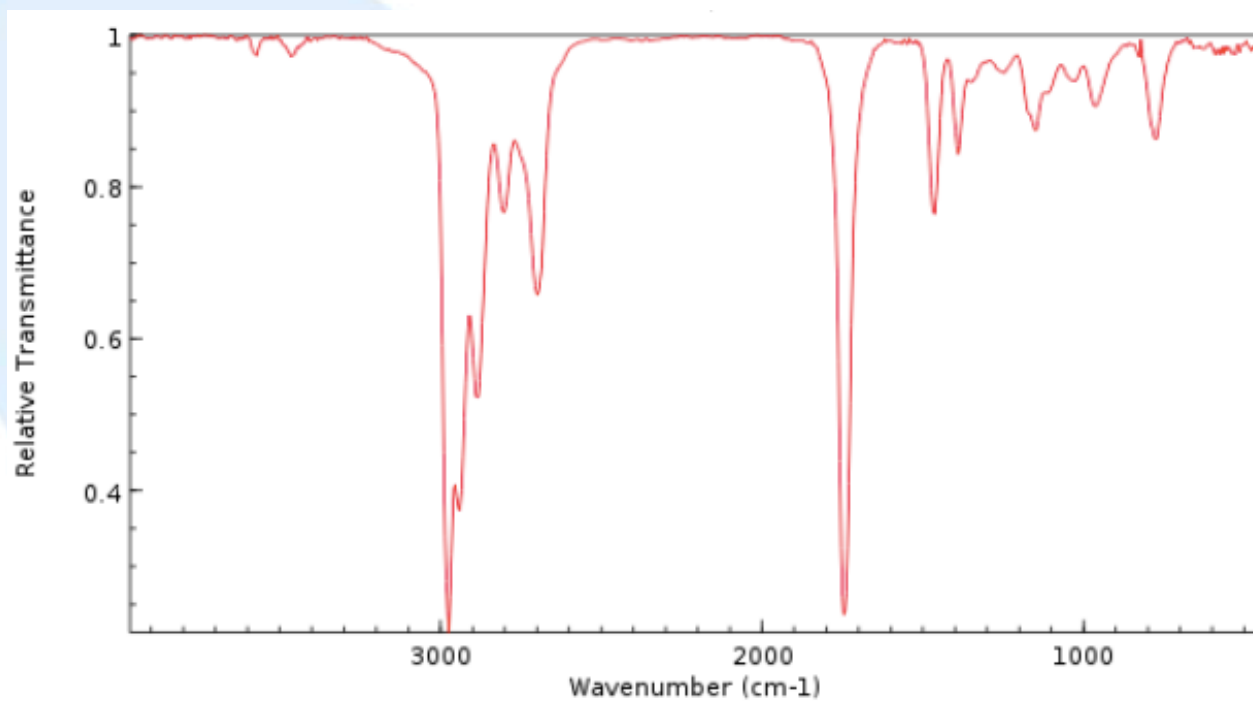
Element	Percentage by mass
Carbon	71.93
Hydrogen	12.10
Oxygen	15.97

(b) Mass spectrum of **Compound O**



NIST Chemistry WebBook (<https://webbook.nist.gov/chemistry>)

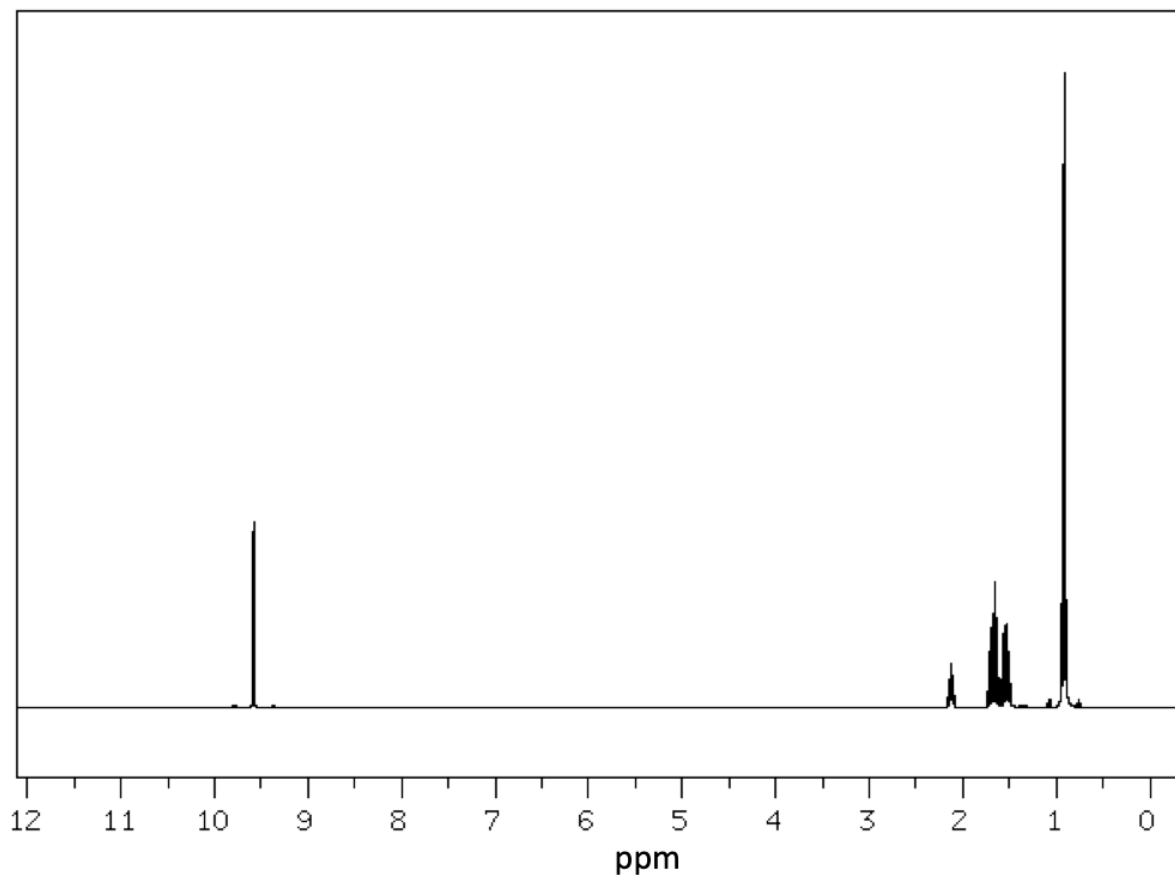
(c) Infrared spectrum of **Compound O**



NIST Chemistry WebBook (<https://webbook.nist.gov/chemistry>)



(d) ^1H NMR spectrum of **Compound O**



https://www.chemicalbook.com/SpectrumEN_97-96-1_1HNMR.htm

data from ^1H NMR spectrum

Position of signal/ δ ppm	Splitting pattern	Integration trace
0.9	triplet	6
1.6	complex	4
2.1	complex	1
9.6	doublet	1