15

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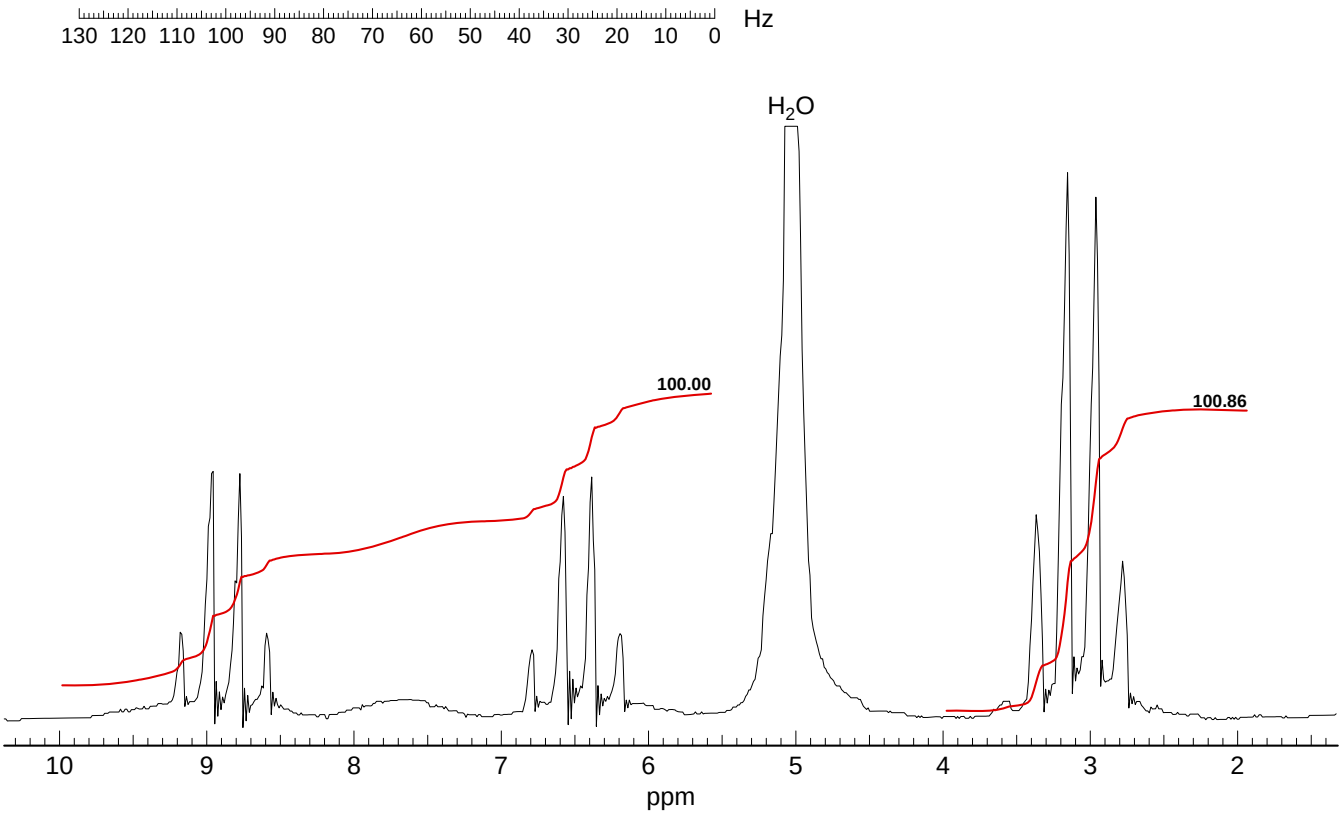

Identify all significant peaks by labelling the spectrum. Show all coupling constants in the standard format $^nJ_{x\text{-}y}$ = 00 Hz.

PLT ex-3-09-10.plt

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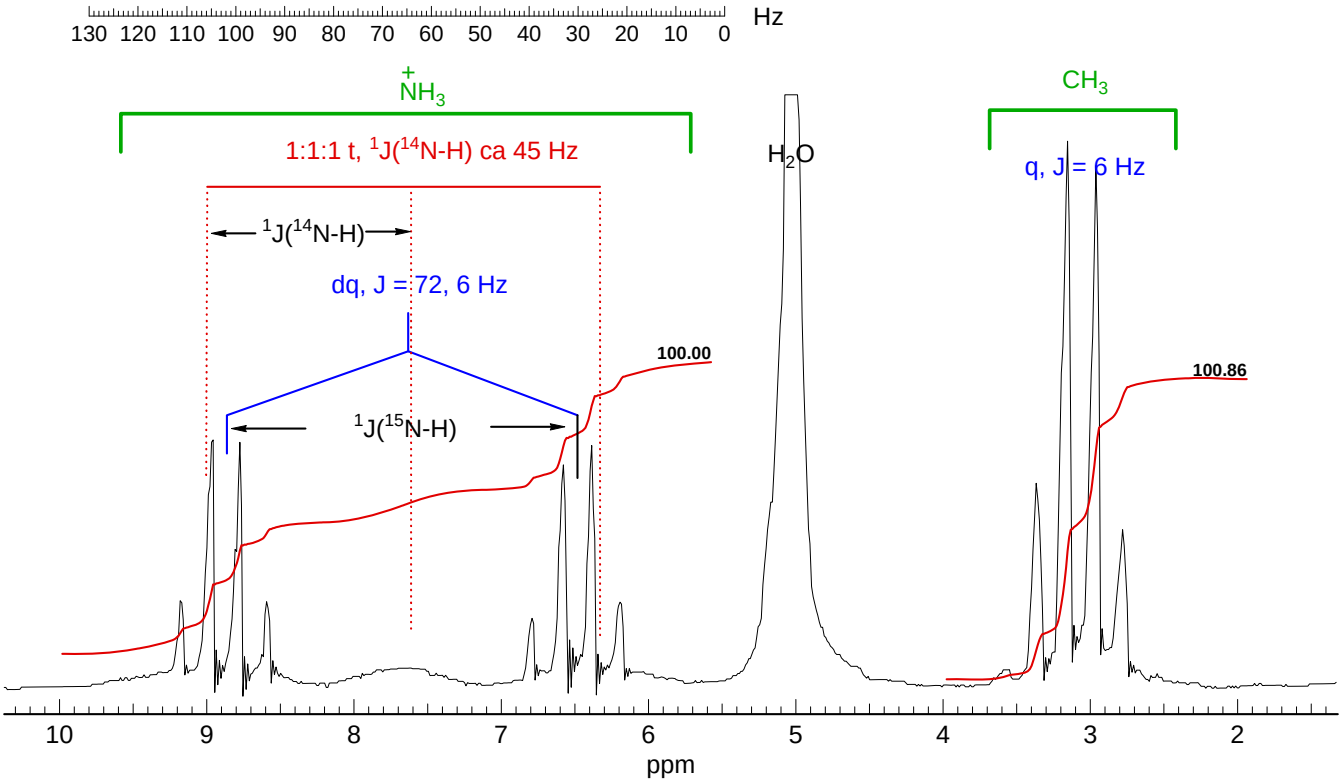

Identify all significant peaks by labelling the spectrum. Show all coupling constants in the standard format $^nJ_{x\text{-}y}$ = 00 Hz.

For the 60% ^{15}N, signals are a dq for the NH_3, and a q for the CH_3

$^1J(^{15}N\text{-}H)$ = 72 Hz.

$^3J(H\text{-}H)$ = 6 Hz.

Apparently the $^2J_{N\text{-}H}$ is too small to resolve, otherwise would see a qd for the Me group

For the 40% ^{14}N, signals are a broad 1:1:1 triplet for the NH_3 centered at δ 7.6. The coupling to the Me group is not resolved because T_1 relaxation of ^{14}N is fast enough to cause broadening. The quartet for the CH_3 is superimposed on the signals of the ^{15}N isotopomer. The $^3J_{HCNH}$ is too small to detect.

$^1J(^{14}N\text{-}H)$ ca 45 Hz.

The ratio of $^1J(^{15}N\text{-}H)$ and $^1J(^{14}N\text{-}H)$ should be $\gamma(^{l5}N)/\gamma(^{14}N)$, 10.13/ 7.22, i.e.predict $^1J(^{14}N\text{-}H)$ = 51 Hz if $^1J(^{15}N\text{-}H)$ = 72

Common errors: Ignoring the ^{l4}N entirely; mixing up CH_3 and NH_3