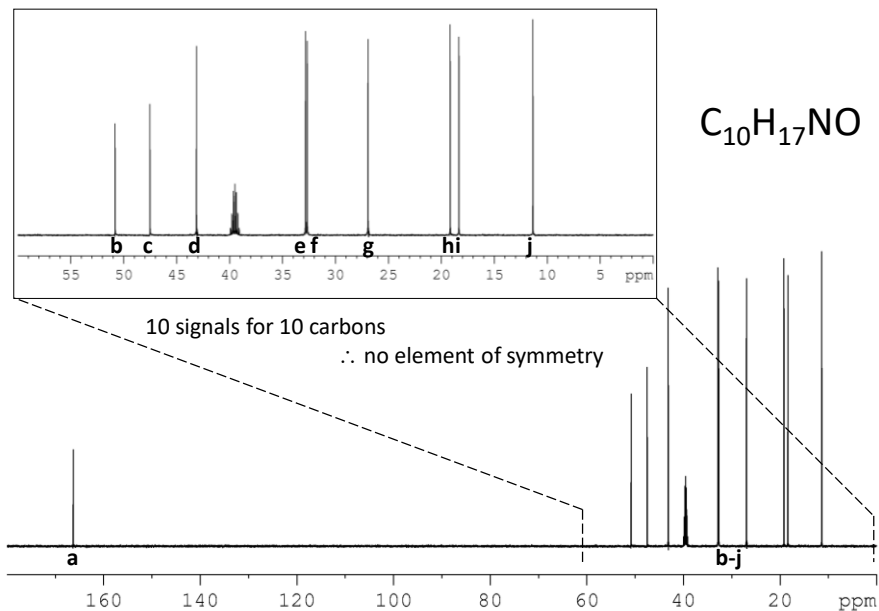
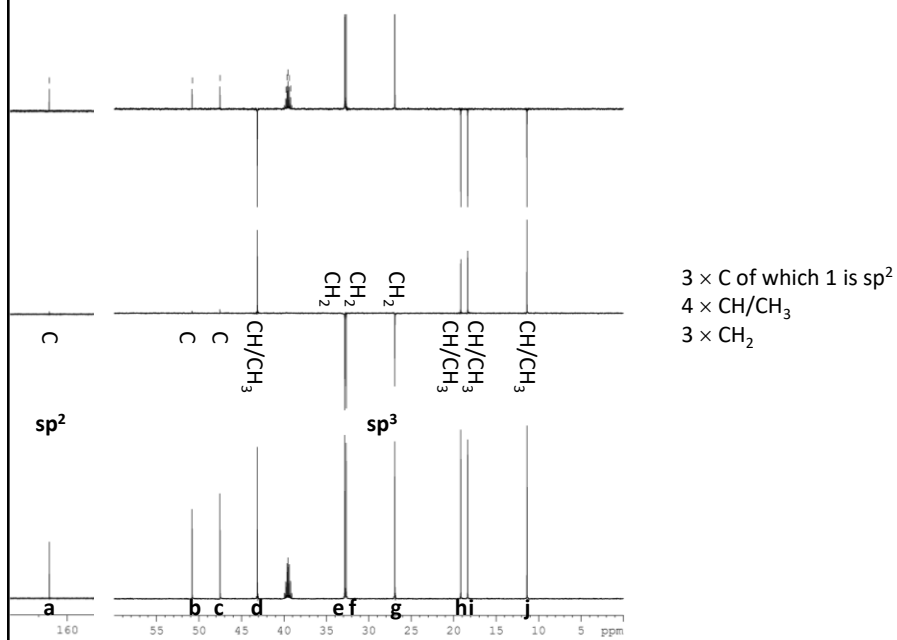


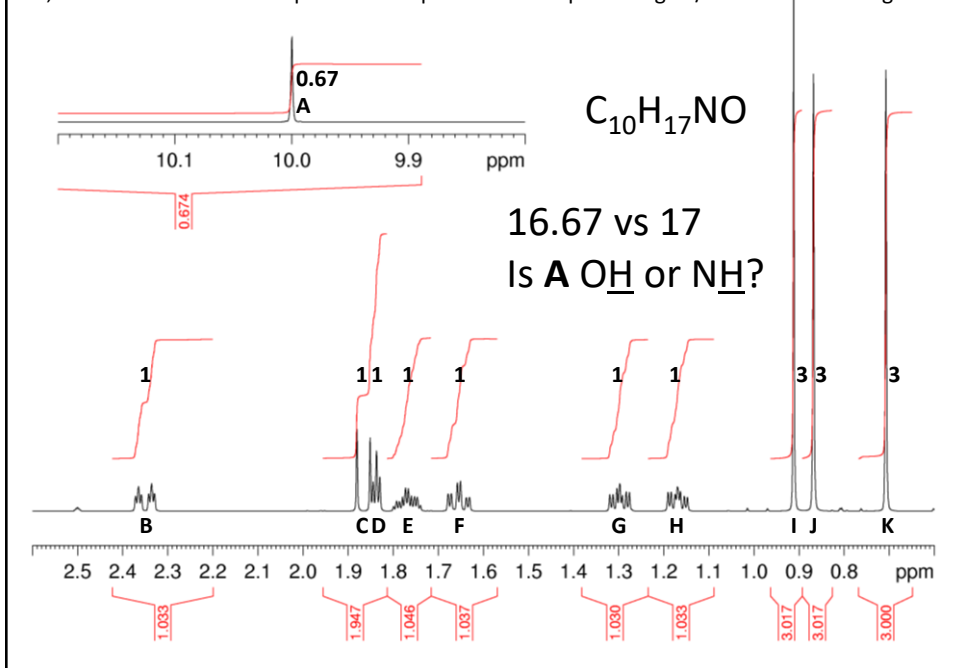
3. Get preliminary information about symmetry of molecule



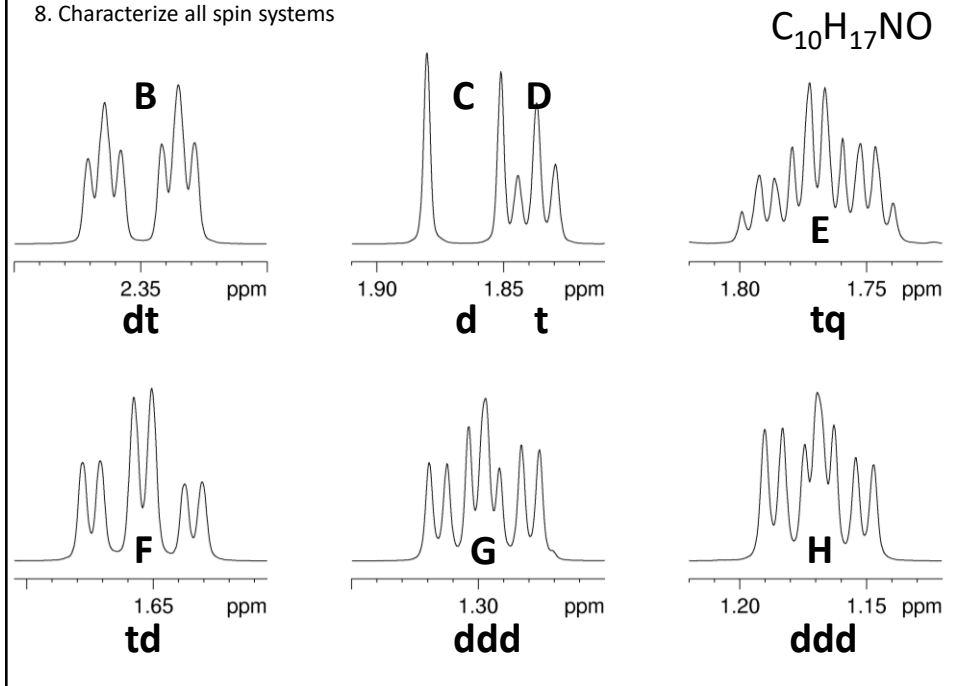
4, 5. Recognize functional groups/determine C, CH, CH_2 , CH_3 sp^2 and sp^3



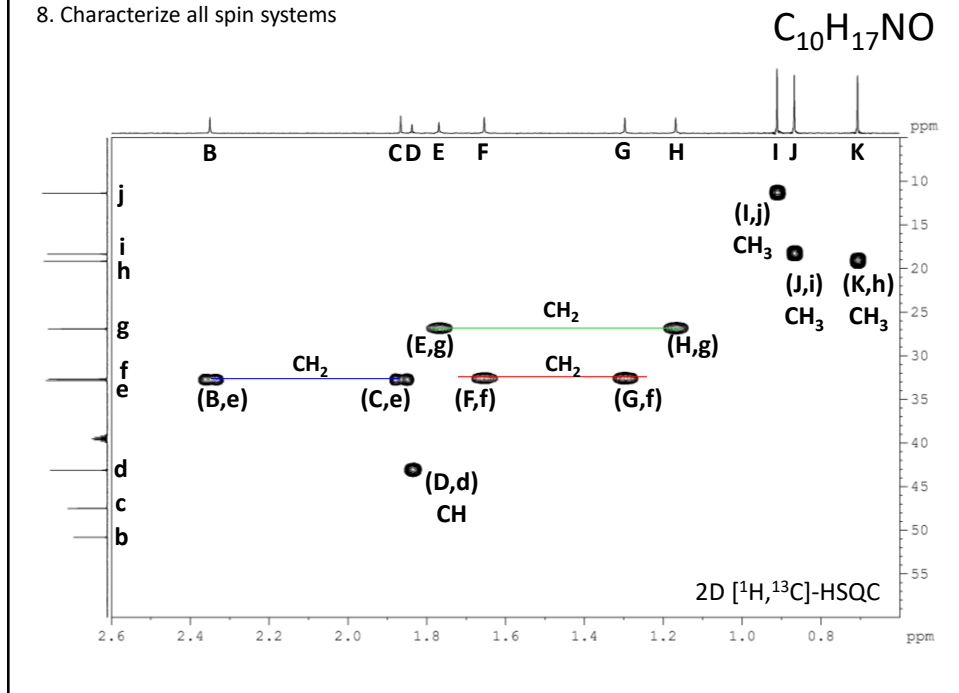
6,7. Determine number of protons that produces each proton signal/number of exchangeables



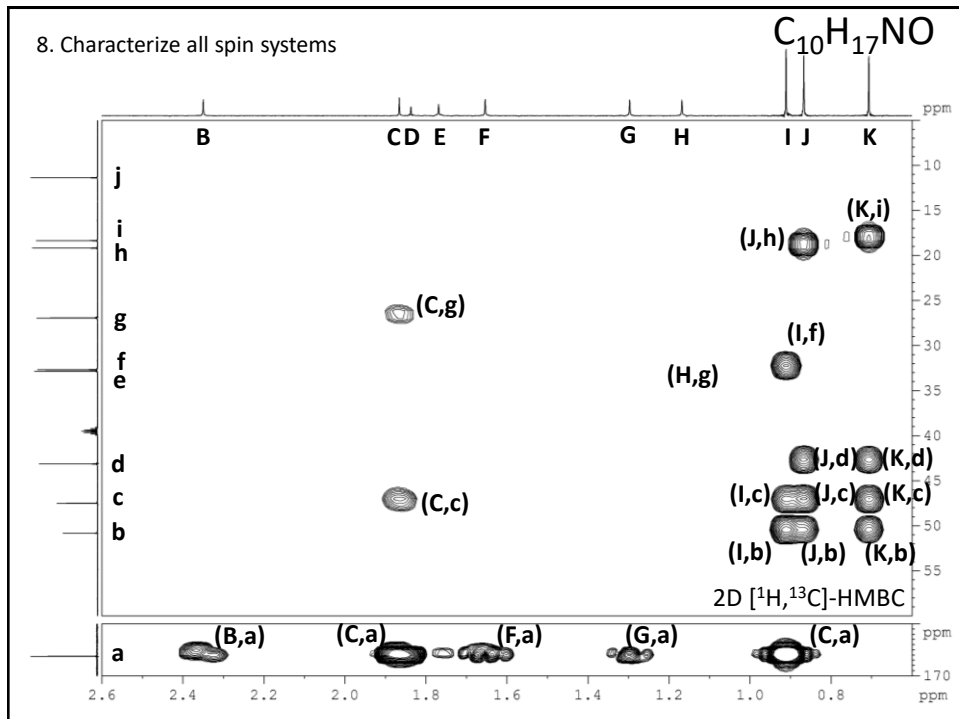
8. Characterize all spin systems

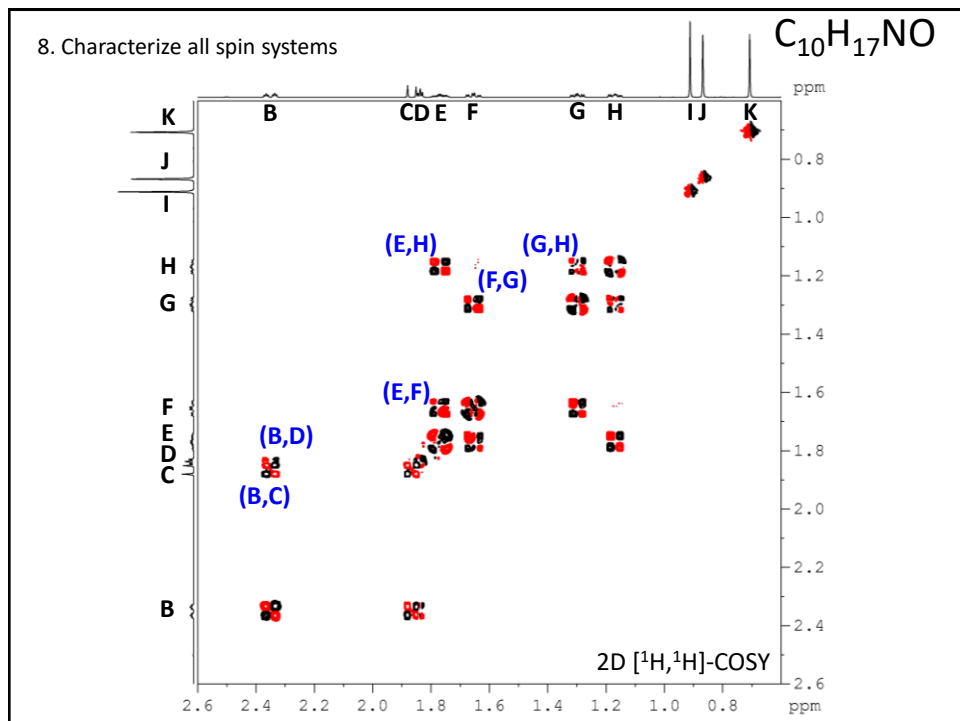
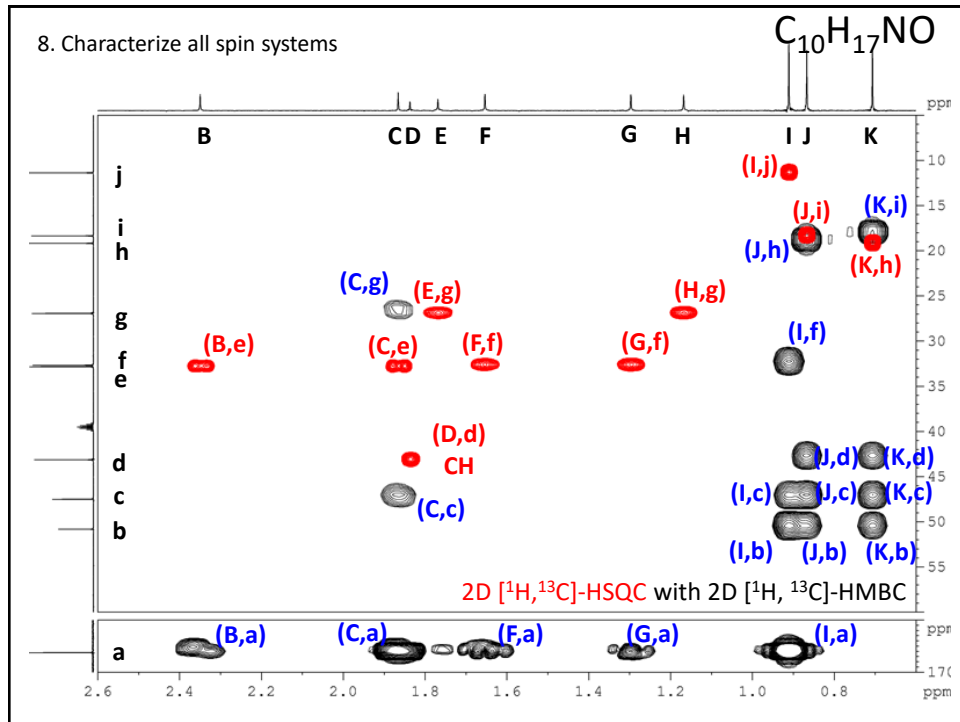


8. Characterize all spin systems

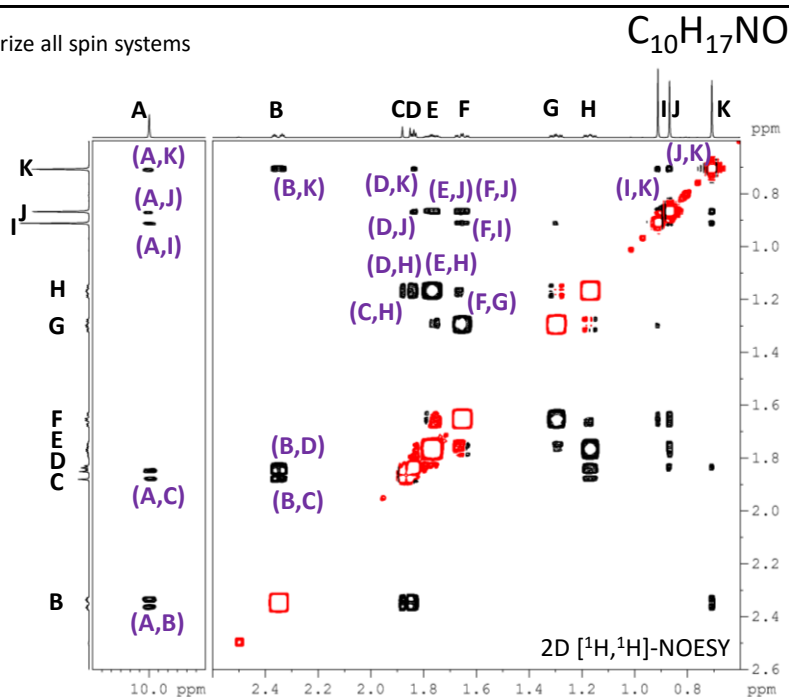


8. Characterize all spin systems

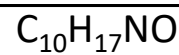




8. Characterize all spin systems

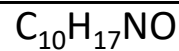


9. Connect all fragments together to define the molecular structure



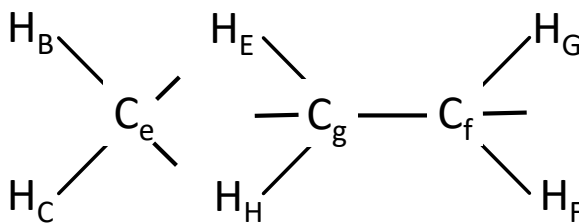
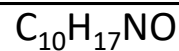
1	2	3	4	5	6	7
1H Signal Designation	1H Chemical Shift (ppm)	Integral	Multiplicity/Coupling Constant	Partial Structure	Scalar coupled to	NOE to
A	10.000	0.67	s	OH or NH?	-	B, C, I, J, K
B	2.350	1	dt	HC-CH ₂ -CH or CH ₂ -CH ₂	C ($^2J_{HH}$), D	A, C, D, K
C	1.865	1	d	H-C-H	B ($^2J_{HH}$)	A, B, H
D	1.835	1	t	HC-CH ₂ or HC-CH-CH	B	B, H, J, K
E	1.770	1	tq	HC-CH ₂ -CH ₂	H ($^2J_{HH}$), F	G?, H, J
F	1.655	1	td	HC-CH ₂ -HC or H ₂ C-CH ₂	G ($^2J_{HH}$), E	G, H?, I, J
G	1.295	1	ddd	HC-CH ₂ -HC or H ₂ C-CH ₂	F ($^2J_{HH}$), H	F, E?
H	1.170	1	ddd	HC-CH ₂ -HC or H ₂ C-CH ₂	E ($^2J_{HH}$), G	C, D, E, F?
I	0.910	3	s	CH ₃	-	A, F, G?, K
J	0.860	3	s	CH ₃	-	A, D, E, F, K
K	0.700	3	s	CH _w	-	A, B, D, I, J

9. Connect all fragments together to define the molecular structure

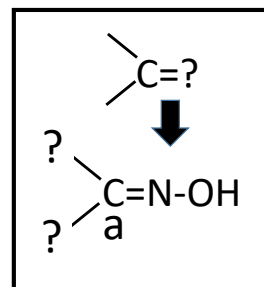
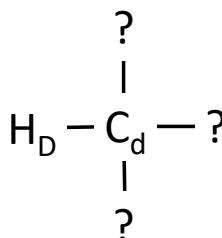
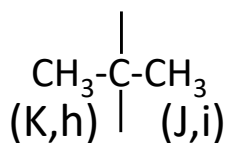
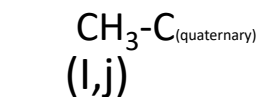


8	9	10	11	12	13	14
¹³ C Signal Designation	¹³ C Chemical Shift (ppm)	sp ² or sp ³	C, CH, CH ₂ , CH ₃	¹ J _{HC} paired proton	ⁿ J _{HC} paired protons	Partial Structure
a	166.260	Sp ²	C	-	B, C, F, G, I	C=?
b	50.785	sp ³	C	-	I, J, K	C
c	47.501	sp ³	C	-	C, I, J, K	C
d	43.128	sp ³	CH	D	J, K	HC-
e	32.827	sp ³	CH ₂	B, C	-	CH ₂
f	32.663	sp ³	CH ₂	F, G	I	H ₂ C-CH ₃ or H ₂ C-C-CH ₃
g	26.923	sp ³	CH ₂	E, H	C	H ₂ C-CH ₂
h	19.158	sp ³	CH ₃	K	J	CH ₃ -C-CH ₃
i	18.339	sp ³	CH ₃	J	K	CH ₃ -C-CH ₃
j	11.355	sp ³	CH ₃	I	-	CH ₃

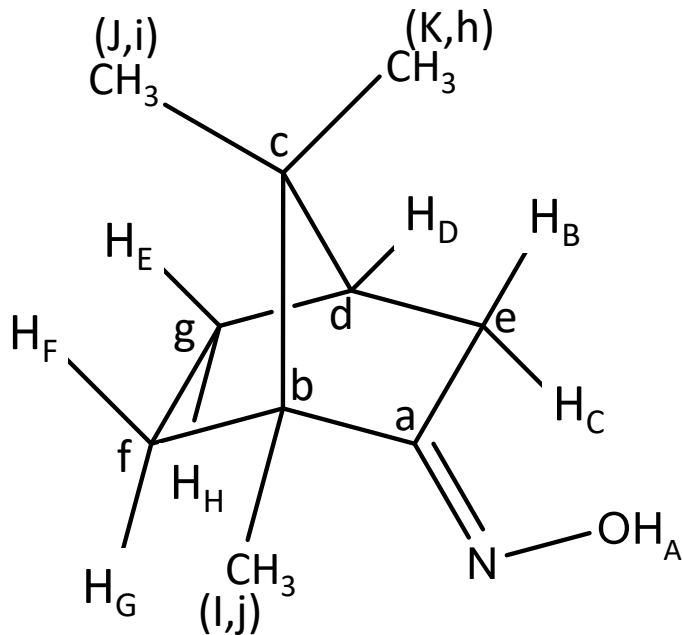
9. Collect all fragments together & connect to define molecular structure



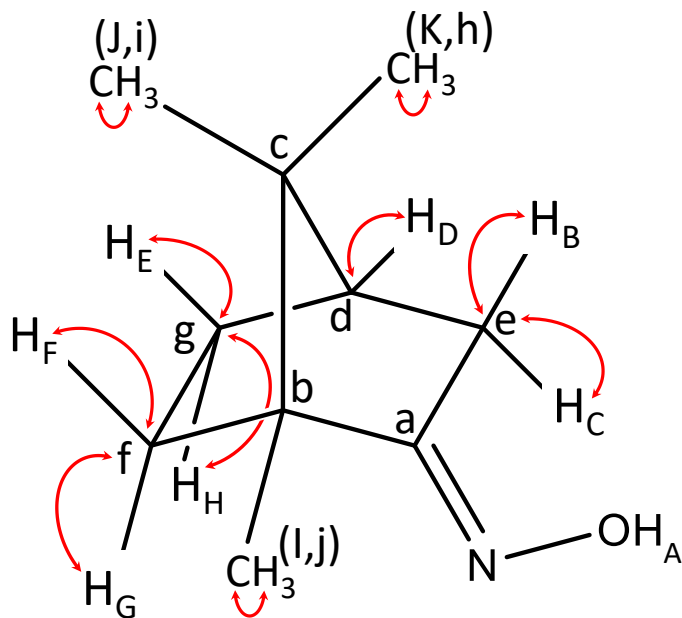
OH or NH?



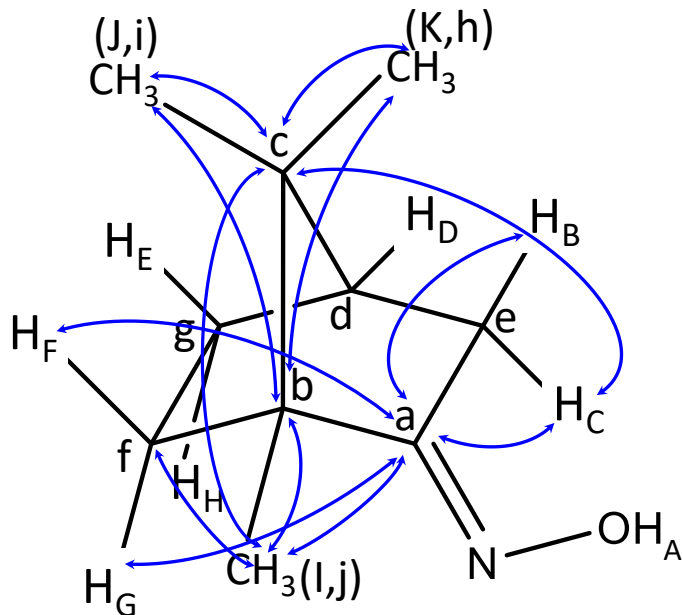
10. Verify the consistency of the data collected

 $C_{10}H_{17}NO$ 

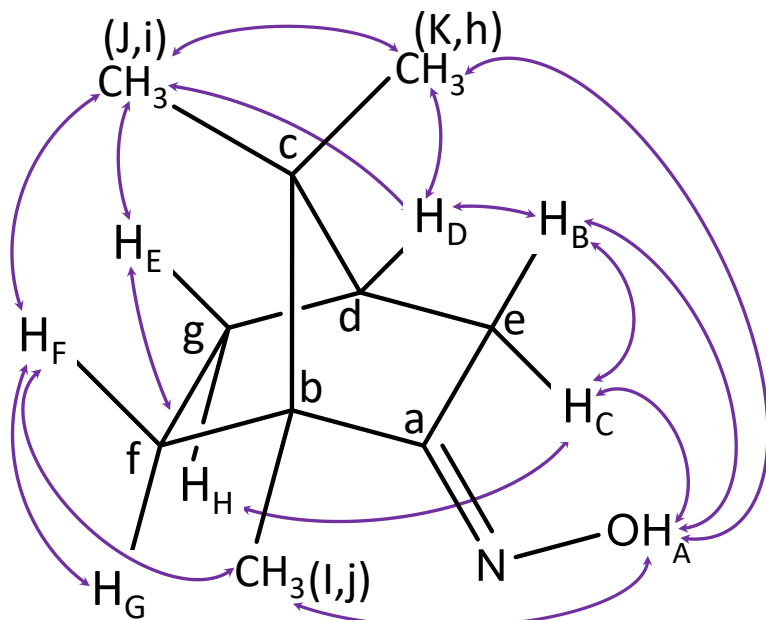
10. Verify the consistency of the data collected

 $C_{10}H_{17}NO$ 2D $[^1H, ^{13}C]$ -HSQC Correlations

10. Verify the consistency of the data collected

 $C_{10}H_{17}NO$ Selected 2D $[^1H, ^{13}C]$ -HMBC Correlations

10. Verify the consistency of the data collected

 $C_{10}H_{17}NO$ Selected 2D $[^1H, ^1H]$ -NOESY Correlations