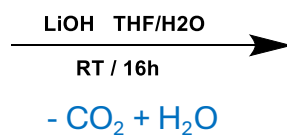
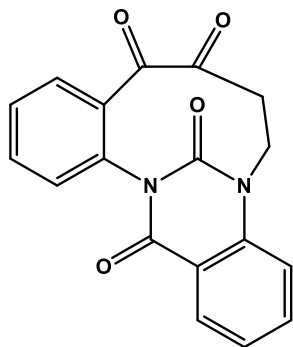


$C_{18}H_{12}N_2O_4$
Mw = 320.30

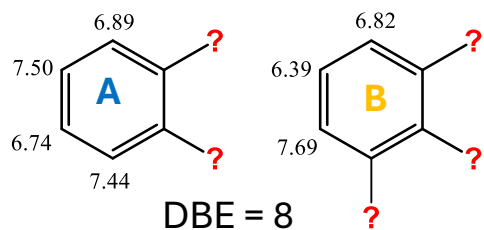


?

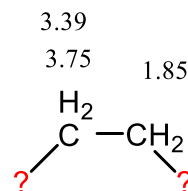
$C_{17}H_{14}N_2O_3$ DBE = 12
Mw = 294.31

Search for structural elements

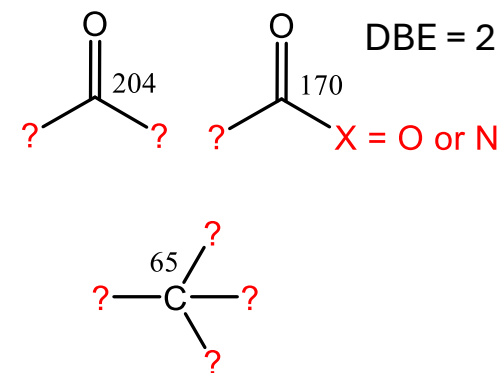
1H aromatic region



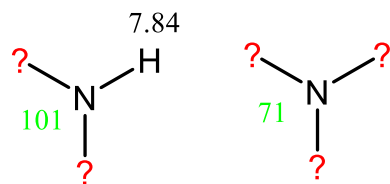
1H aliphatic region



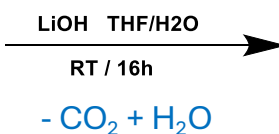
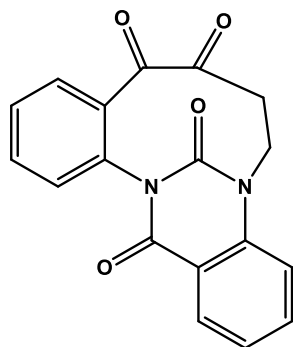
^{13}C DEPTQ



$^1H, ^{15}N$ HMBC



$C_{18}H_{12}N_2O_4$
Mw = 320.30

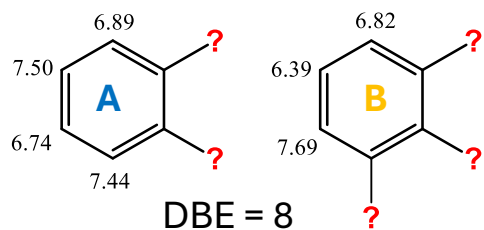


?

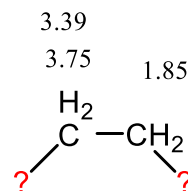
$C_{17}H_{14}N_2O_3$ DBE = 12
Mw = 294.31

Looking for missing elements

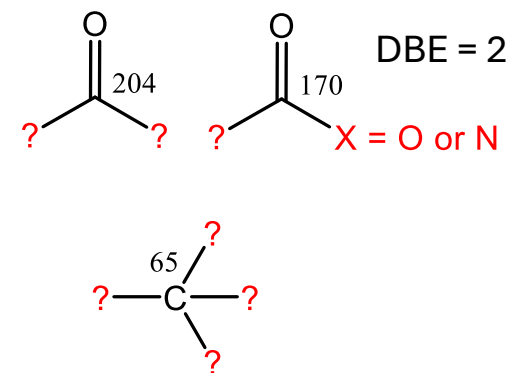
¹H aromatic region



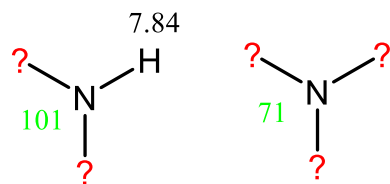
¹H aliphatic region



¹³C DEPTQ



¹H, ¹⁵N HMBC

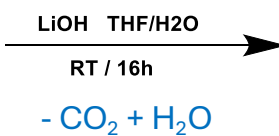
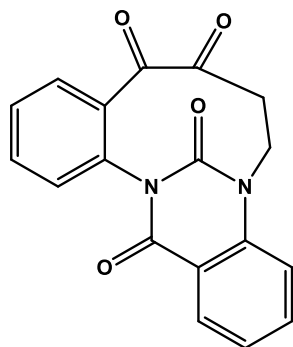


$C_{17}H_{12}N_2O_2$
 Σ Mw = 276.30



Missing H₂O

$C_{18}H_{12}N_2O_4$
Mw = 320.30

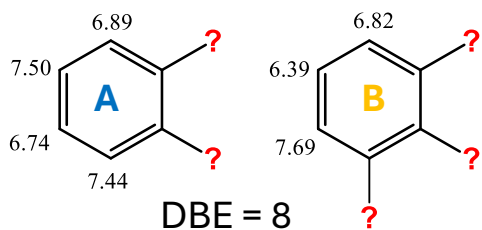


?

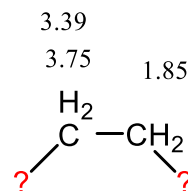
$C_{17}H_{14}N_2O_3$ DBE = 12
Mw = 294.31

Looking for missing elements

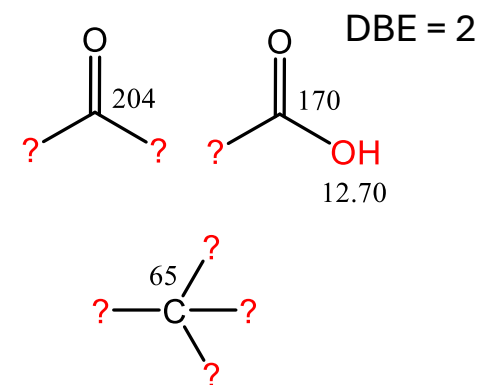
¹H aromatic region



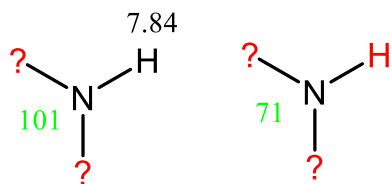
¹H aliphatic region



¹³C DEPTQ



¹H, ¹⁵N HMBC



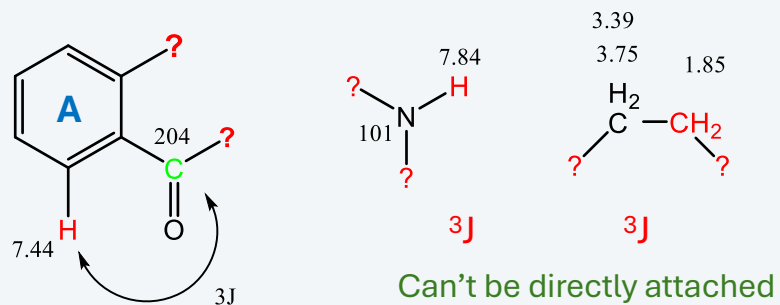
$C_{17}H_{14}N_2O_3$
 Σ Mw = 294.31

DBE = 10

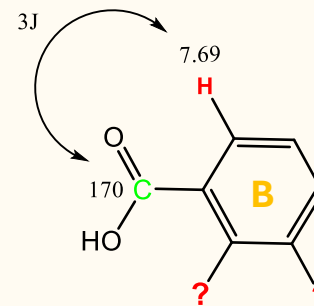
Two additional rings

Looking for connectivity

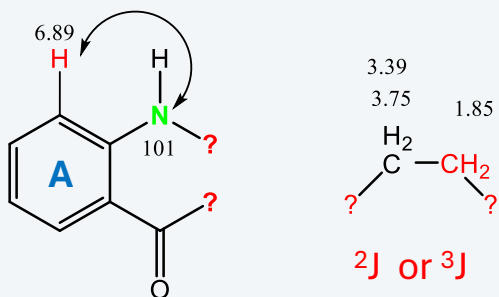
$^1\text{H}, ^{13}\text{C}$ -HMBC ketone carbonyl correlations



$^1\text{H}, ^{13}\text{C}$ -HMBC acid carbonyl correlations



$^1\text{H}, ^{15}\text{N}$ -HMBC



$^1\text{H}, ^{13}\text{C}$ -HMBC sp^3 quaternary correlations

