

# Supporting Information

for

## Chemoenzymatic synthesis of GD3 oligosaccharides and other disialyl glycans containing natural and non-natural sialic acids

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*Vinod Kumar Tiwari, and Xi Chen\**

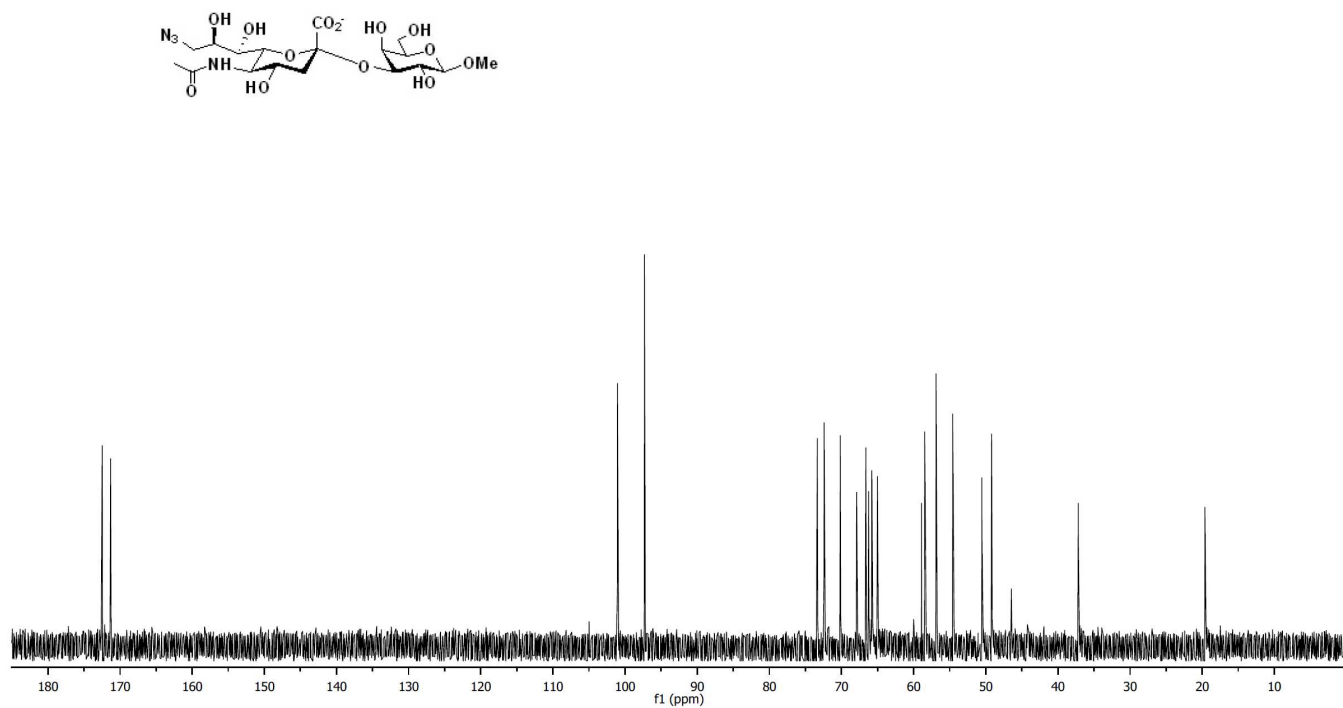
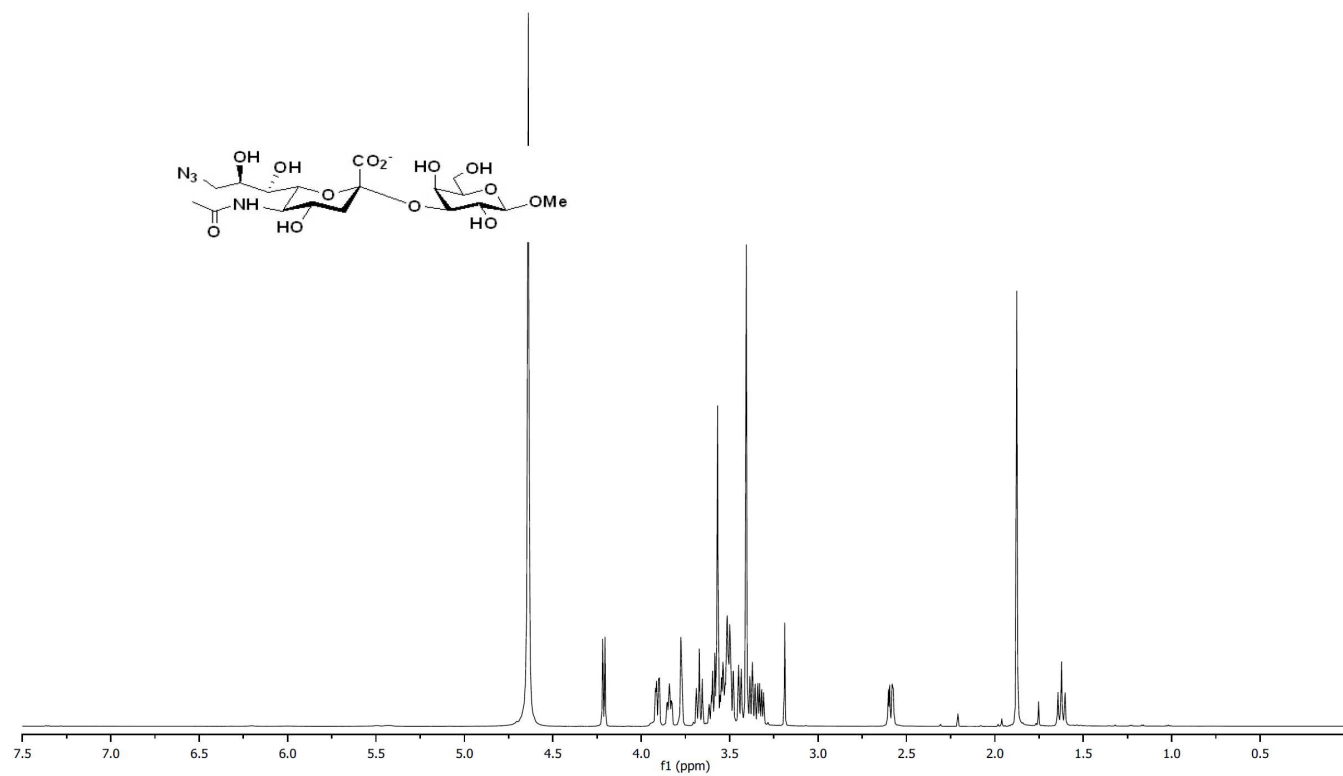
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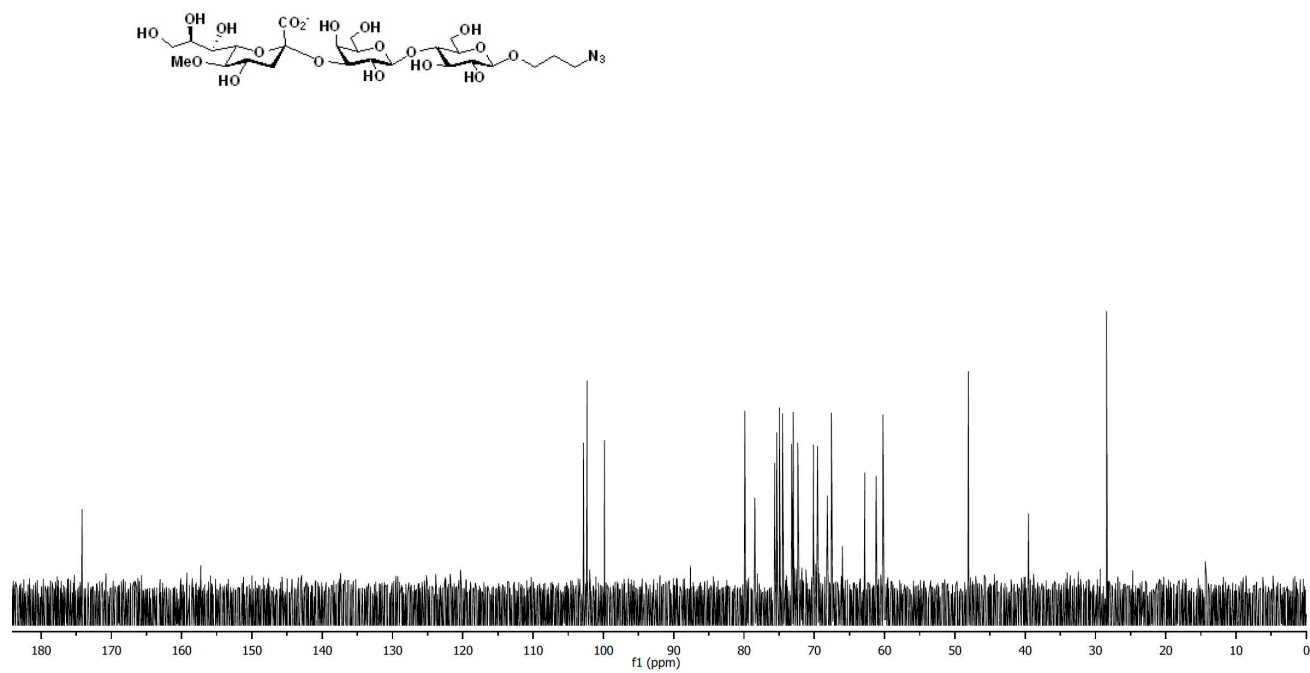
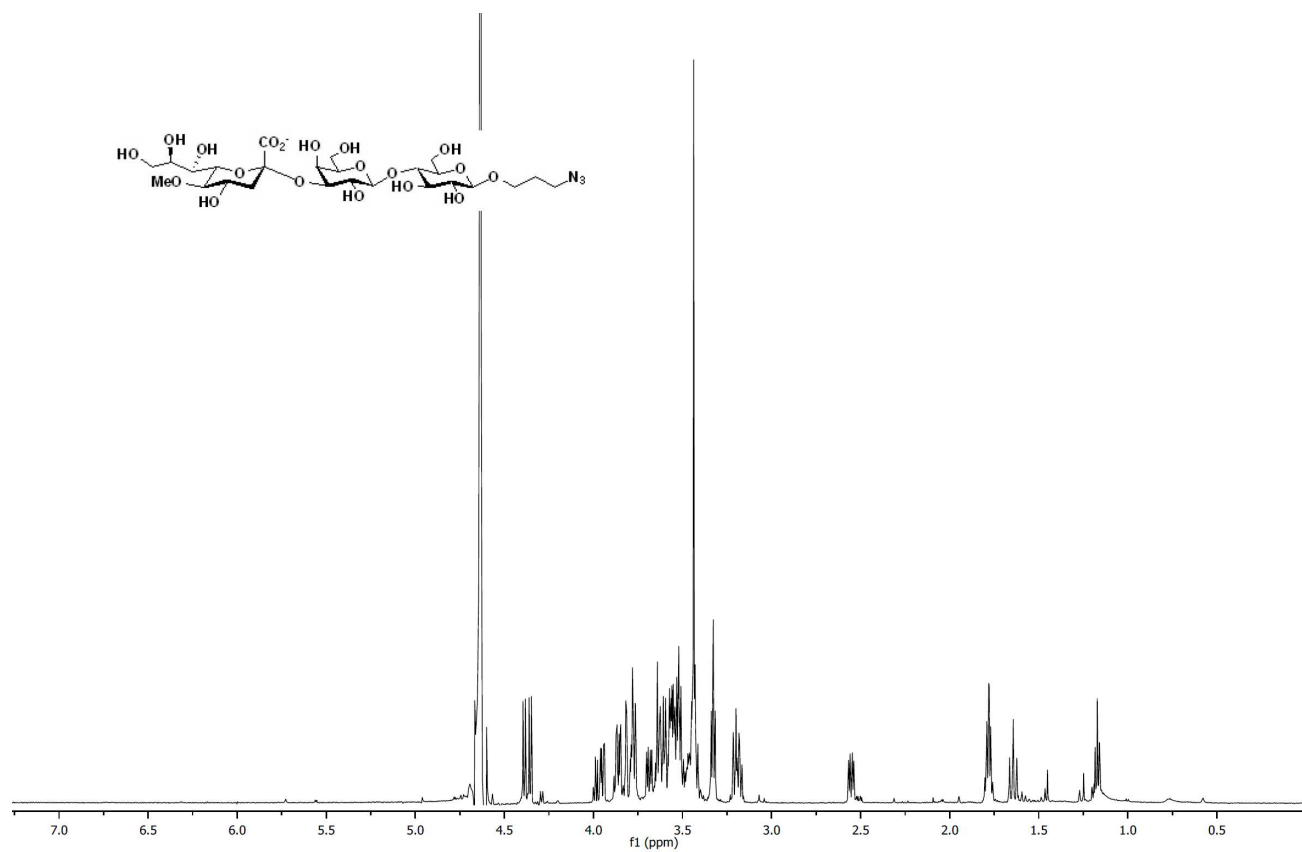
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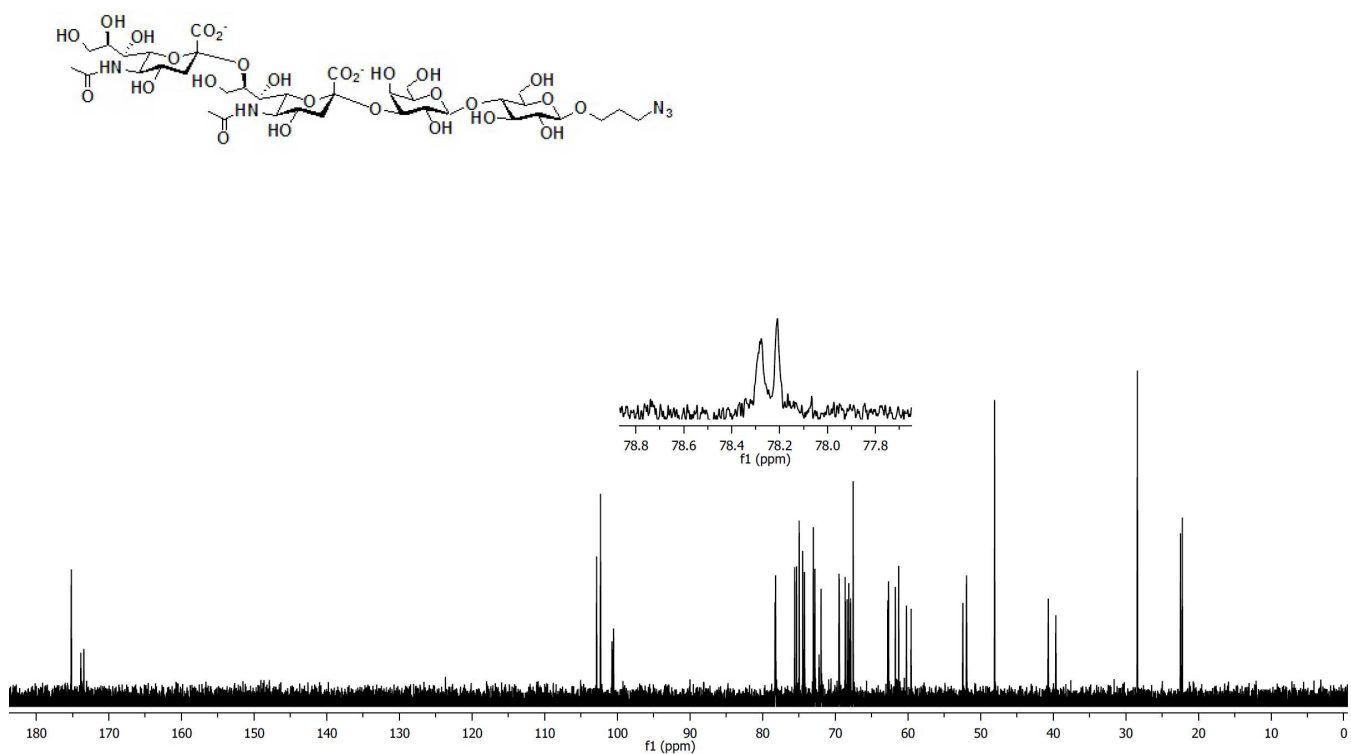
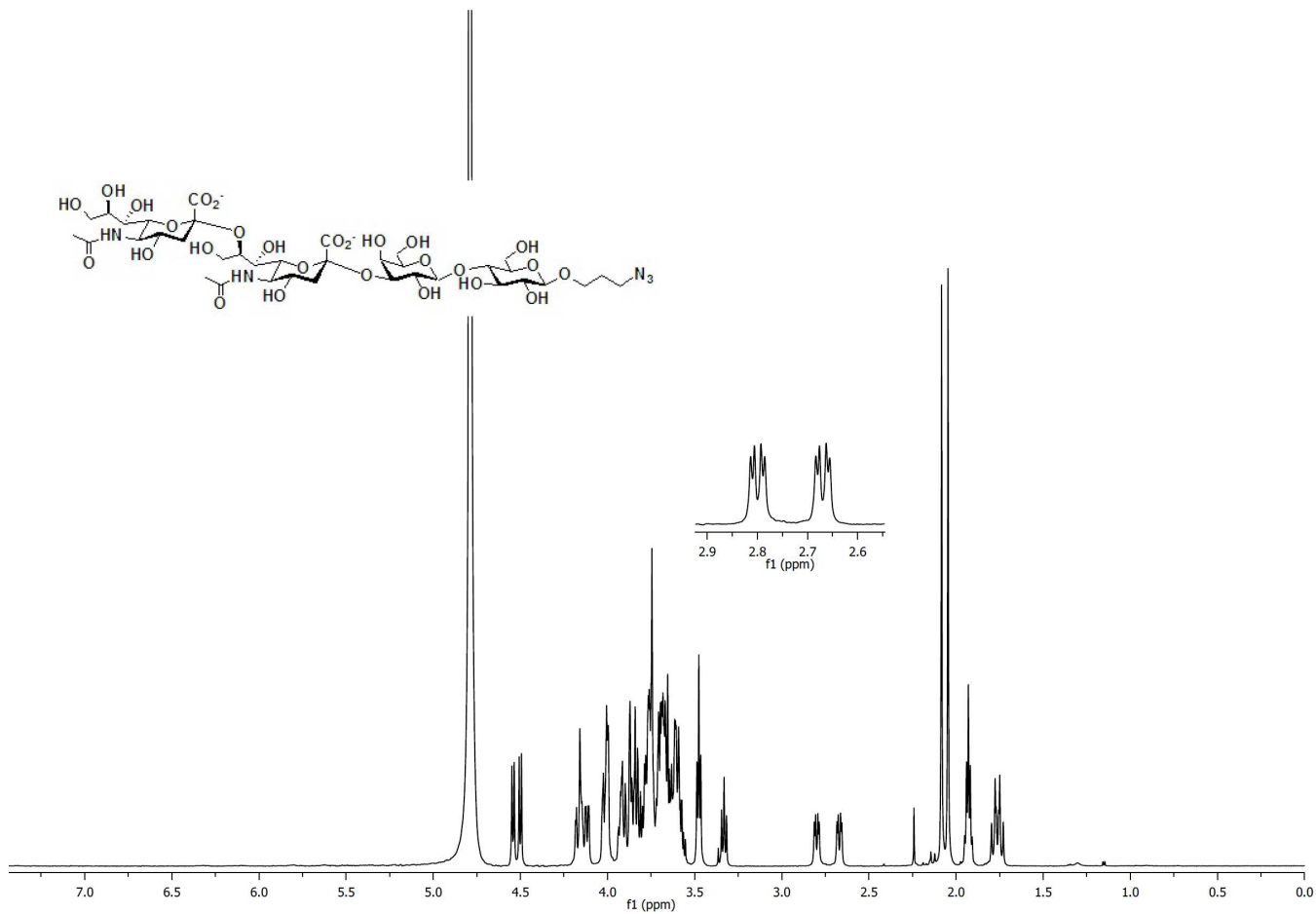
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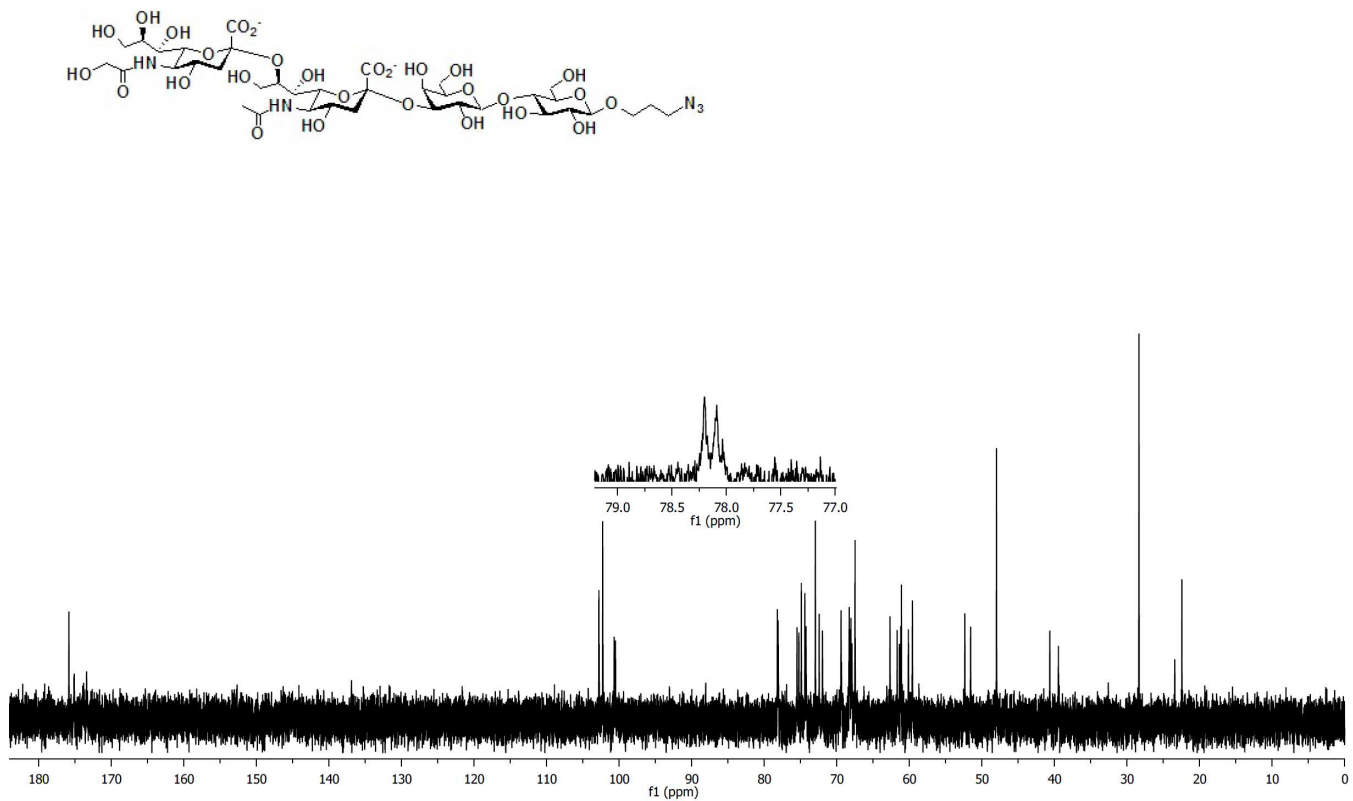
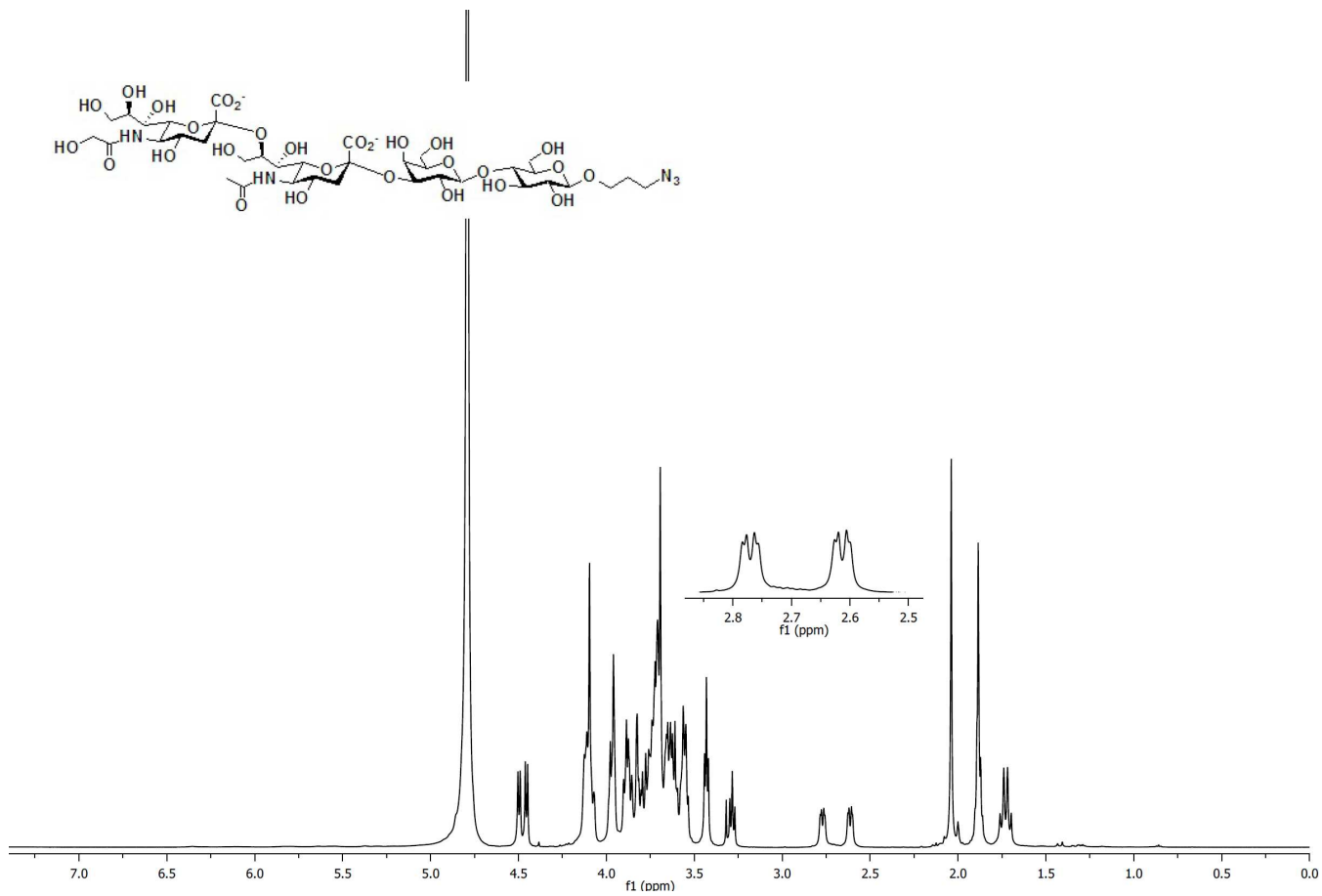
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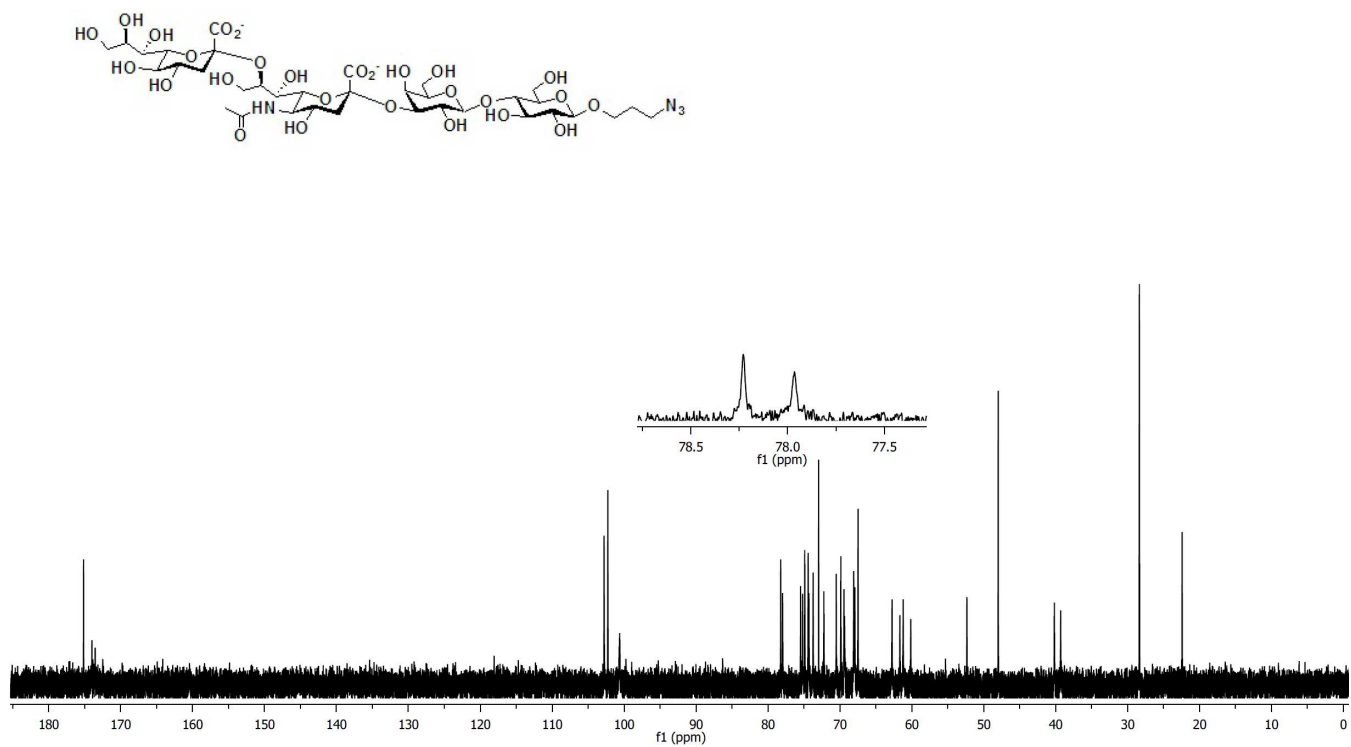
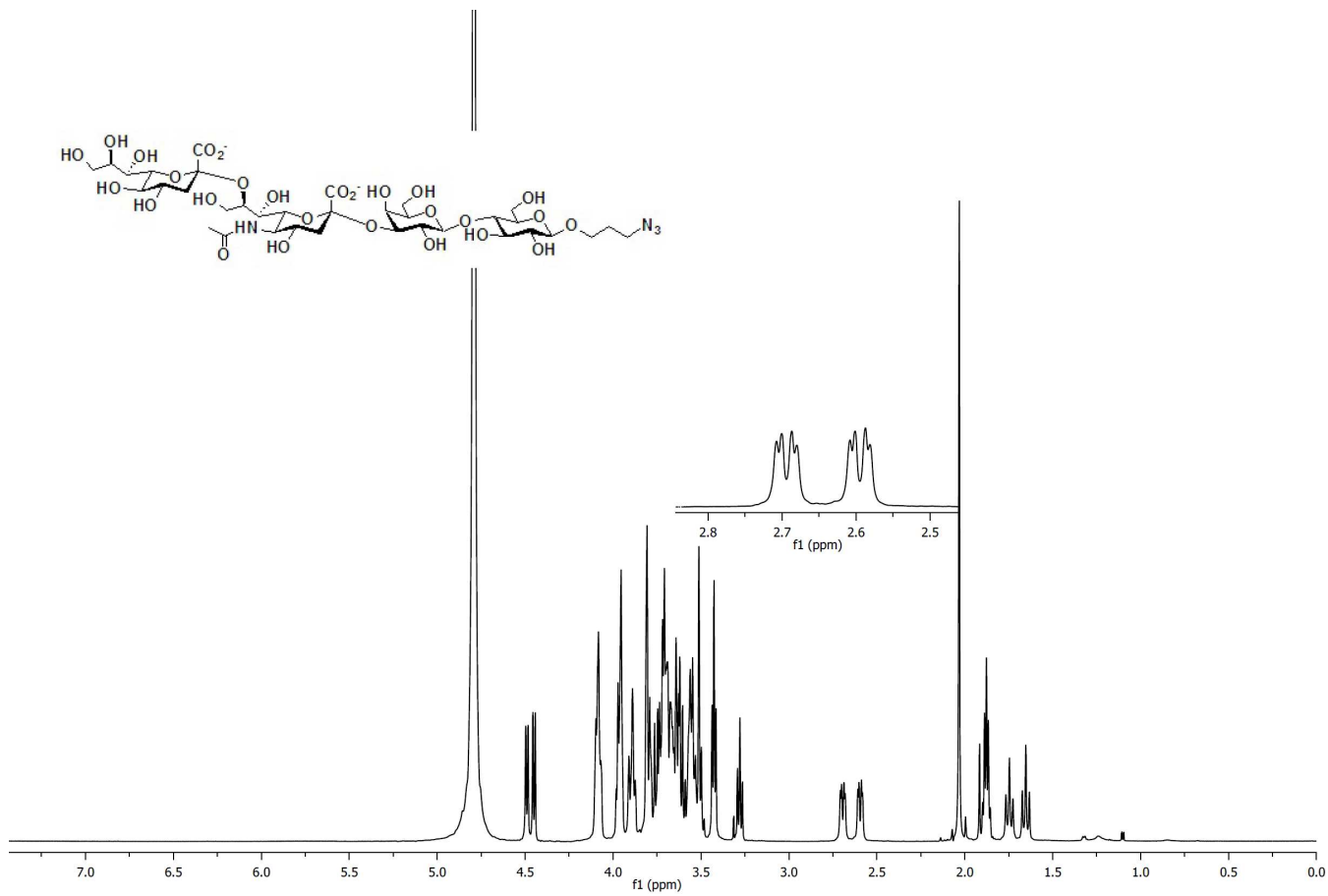
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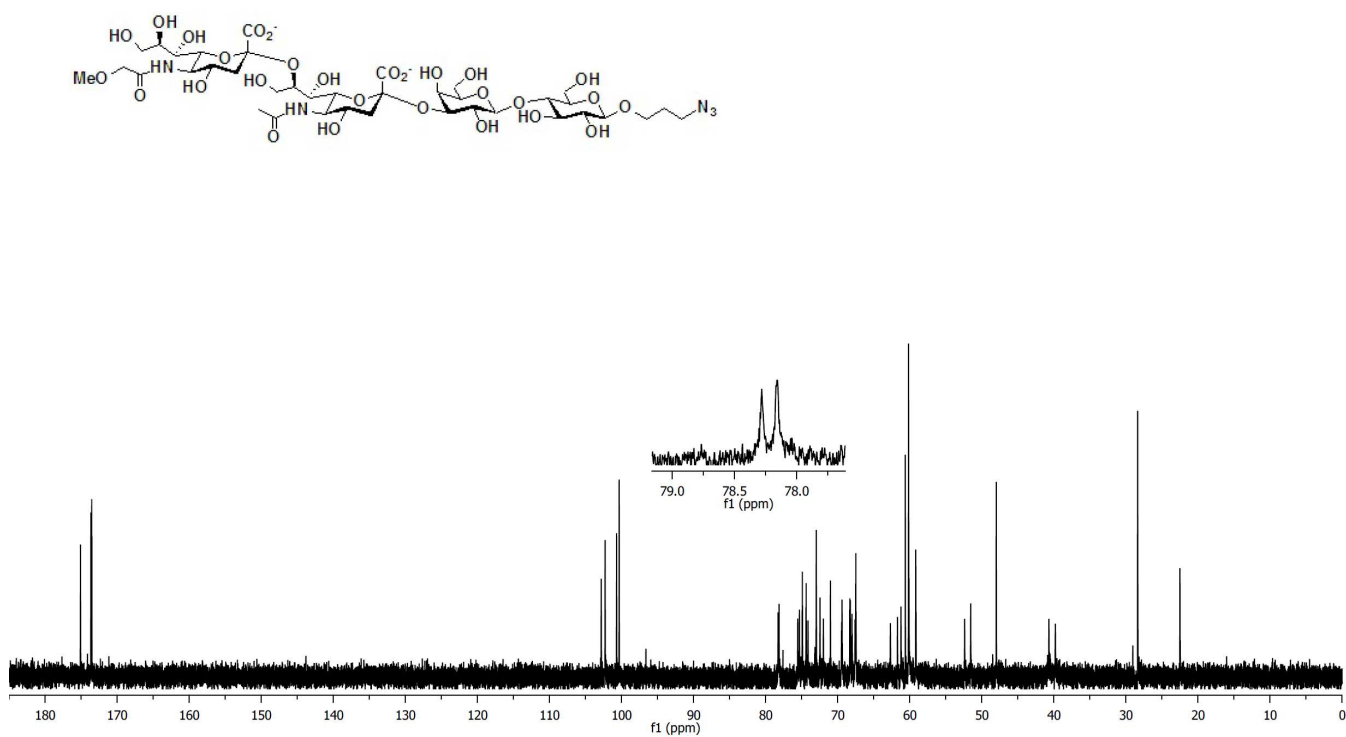
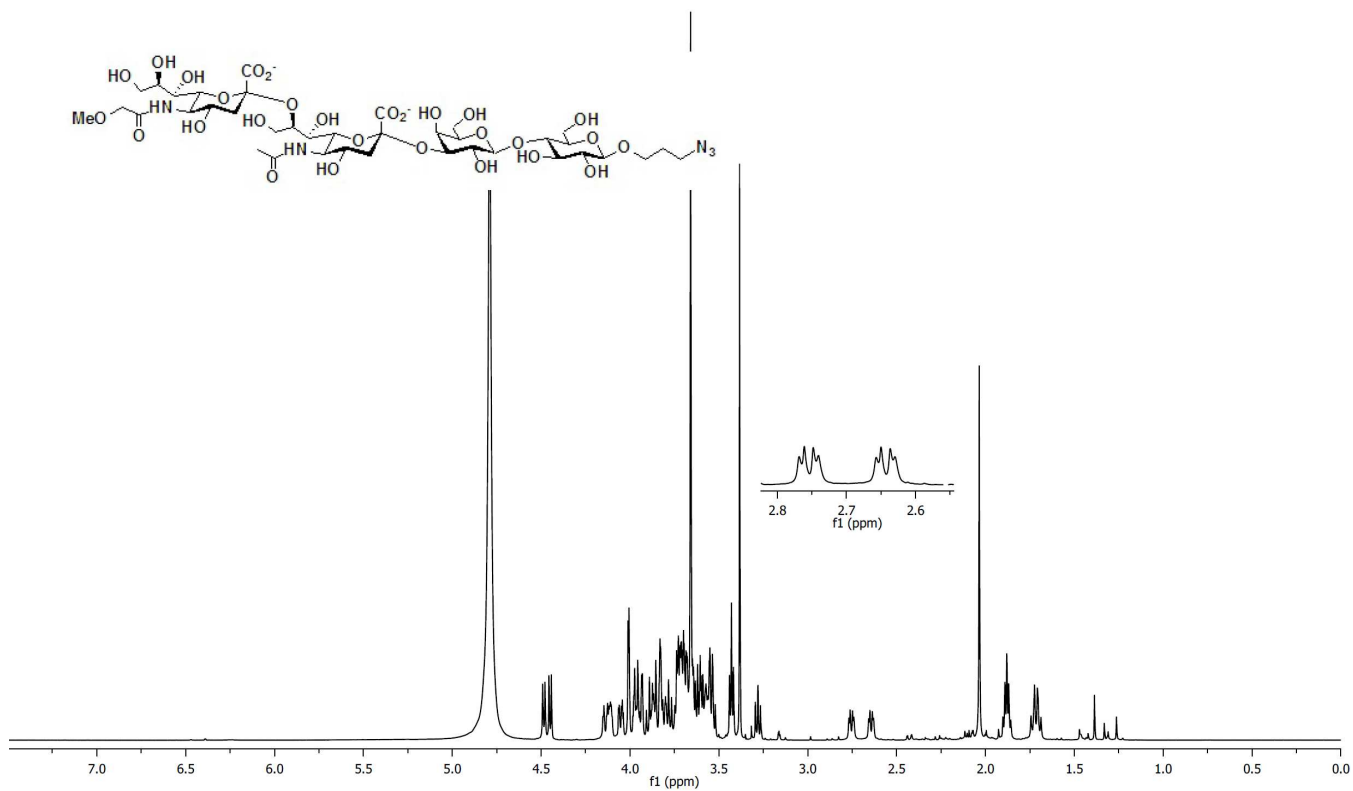
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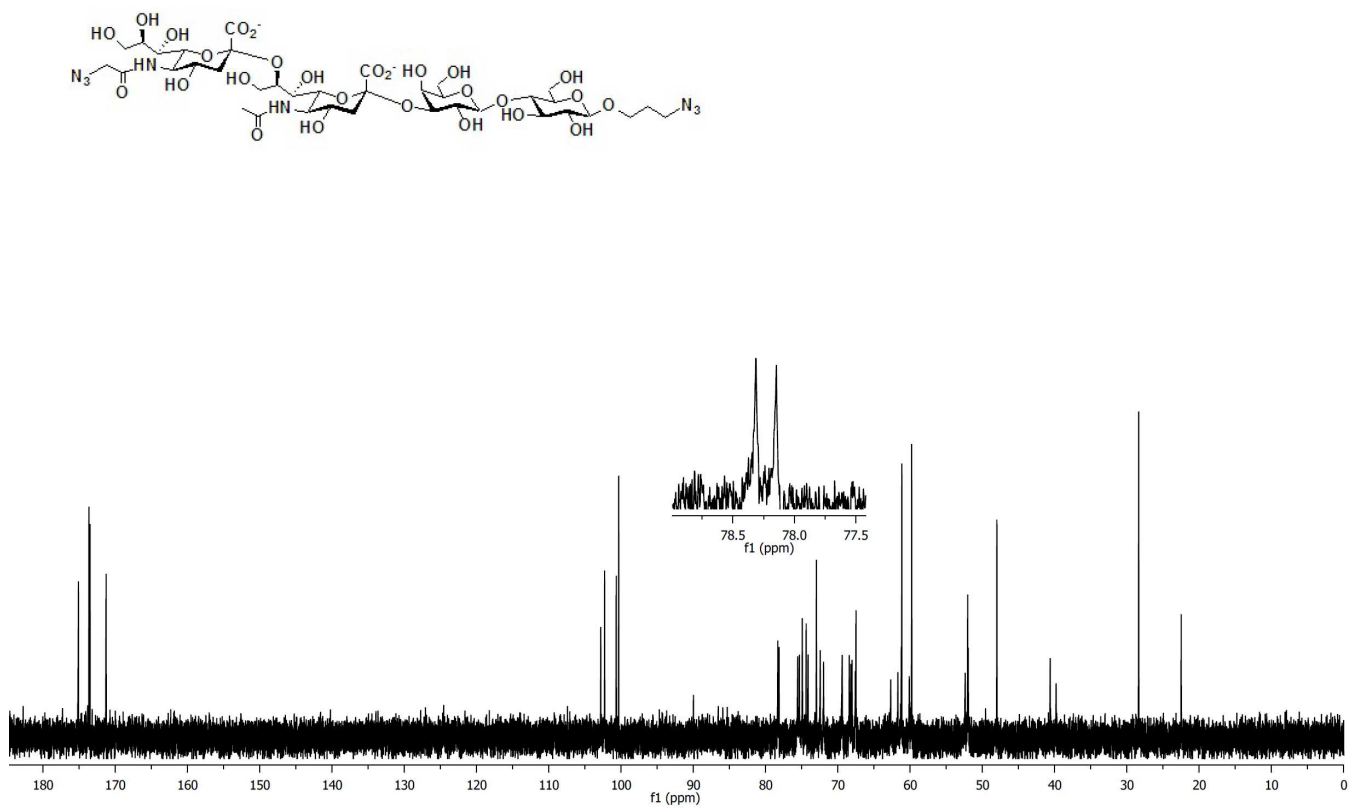
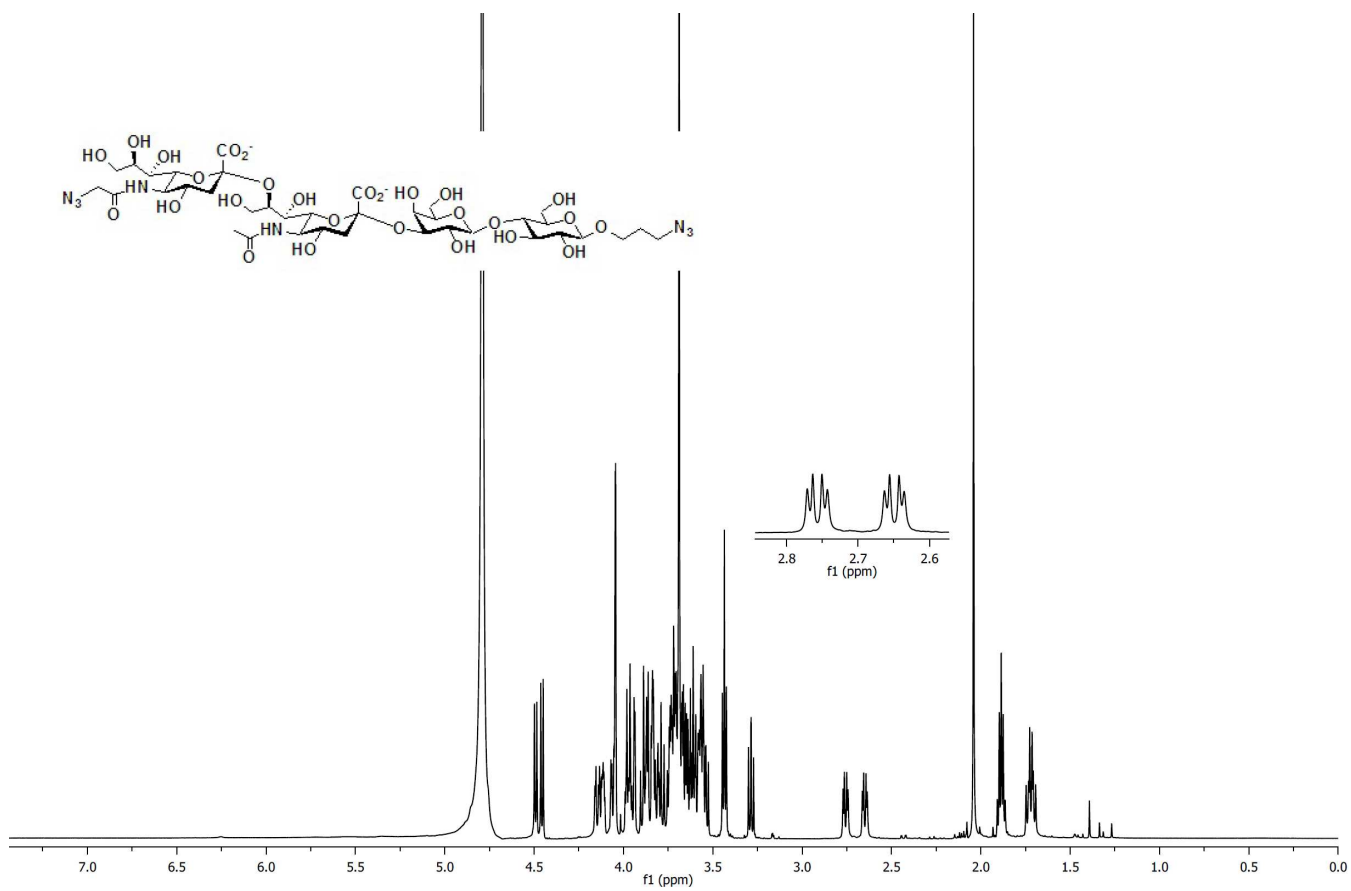
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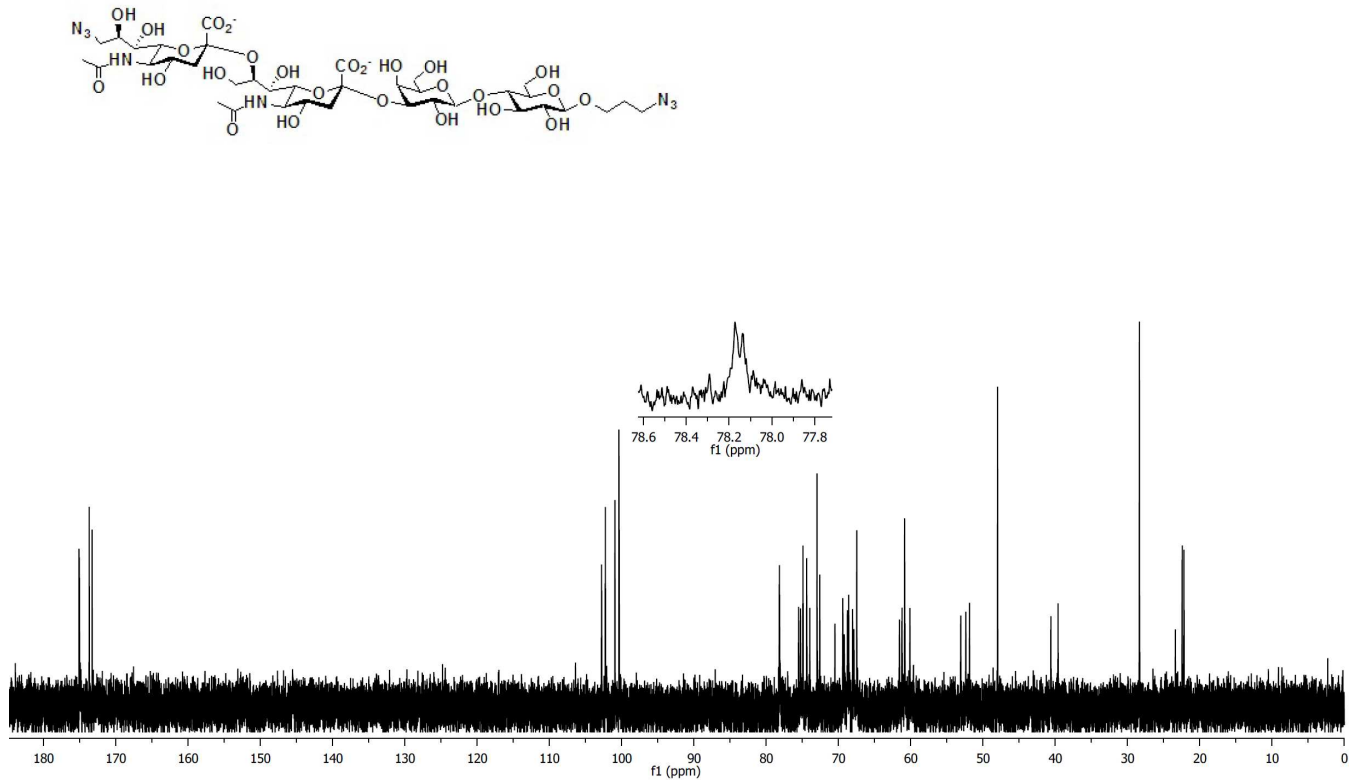
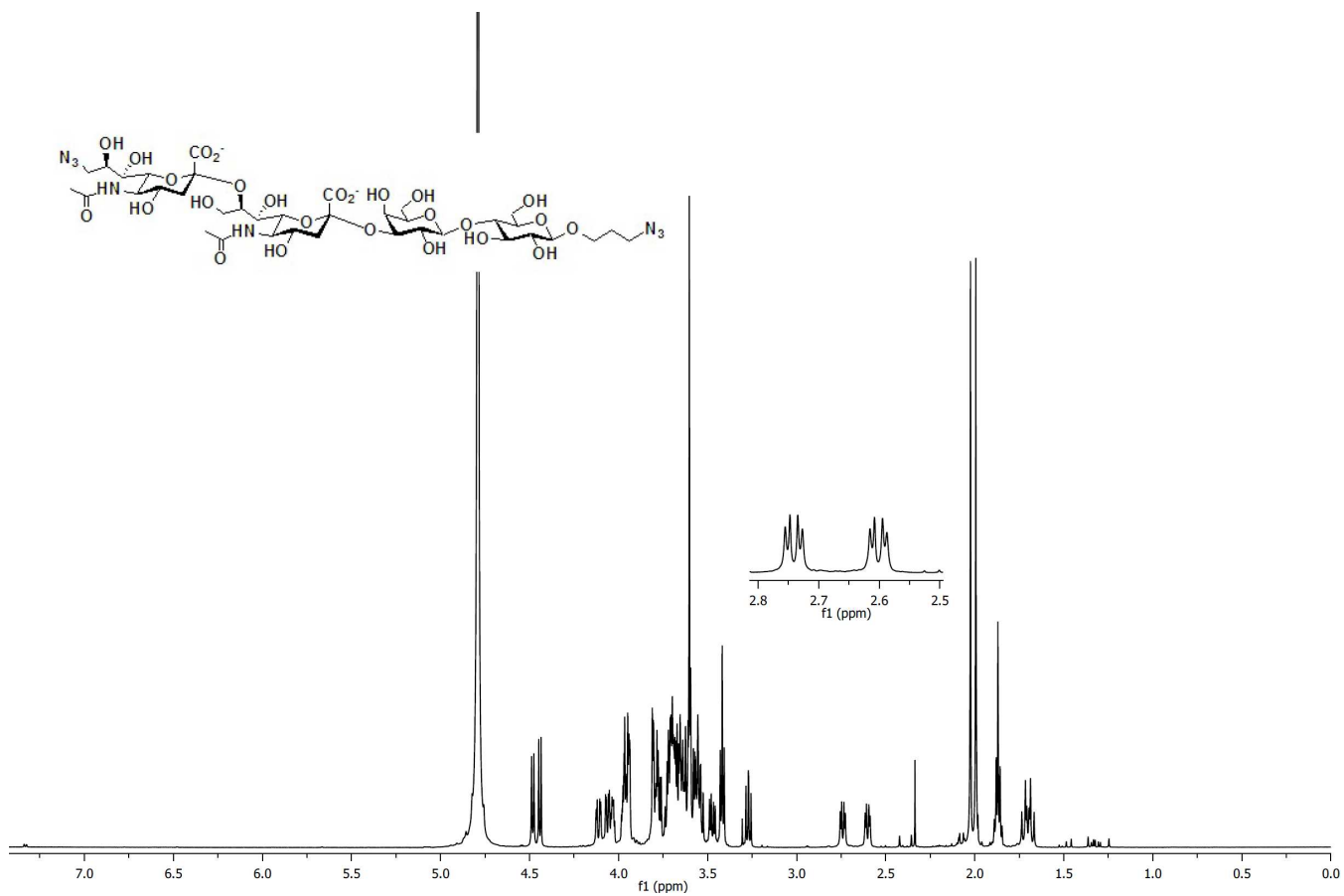


$^1\text{H}$  and  $^{13}\text{C}$  NMR for Neu5AcN<sub>3</sub> $\alpha$ 2-8Neu5Ac $\alpha$ 2-3Lac $\beta$ ProN<sub>3</sub> (**12**)

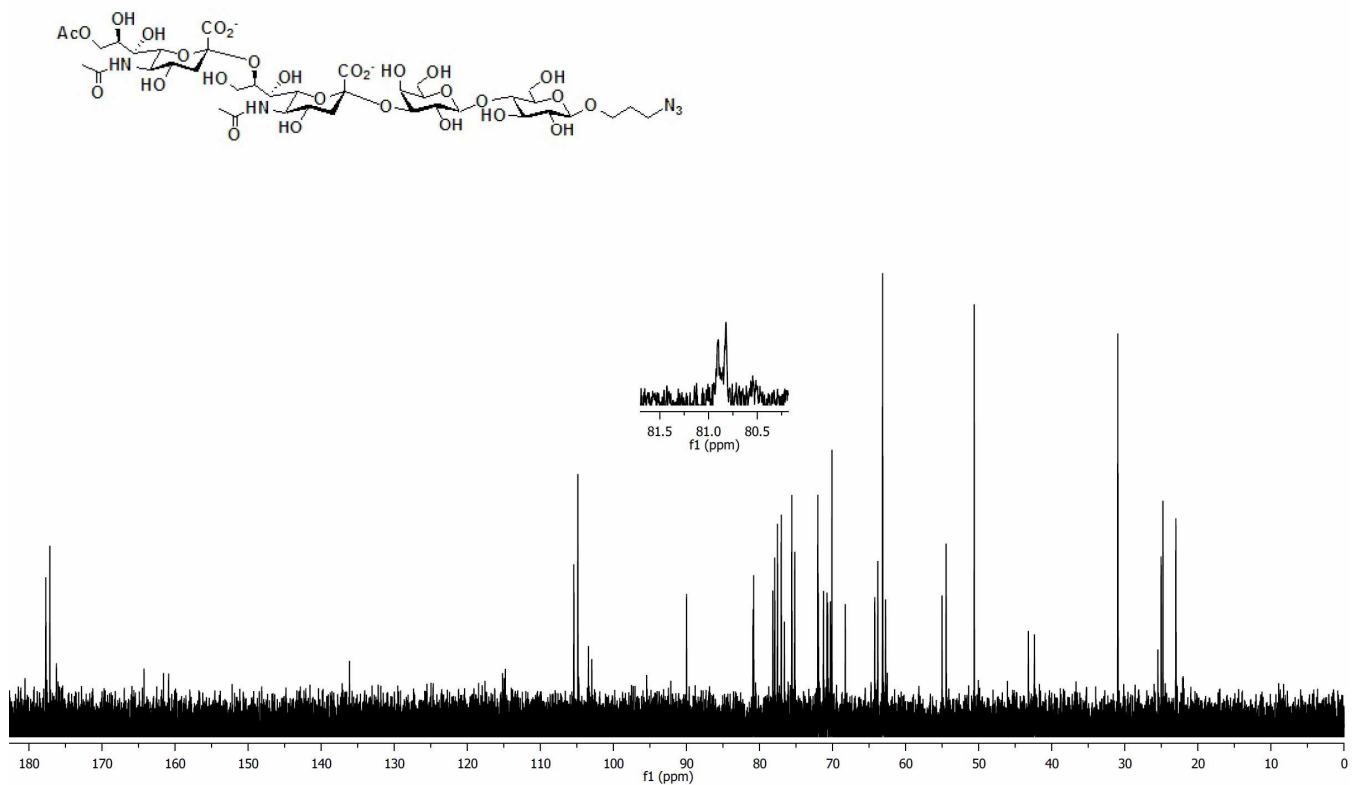
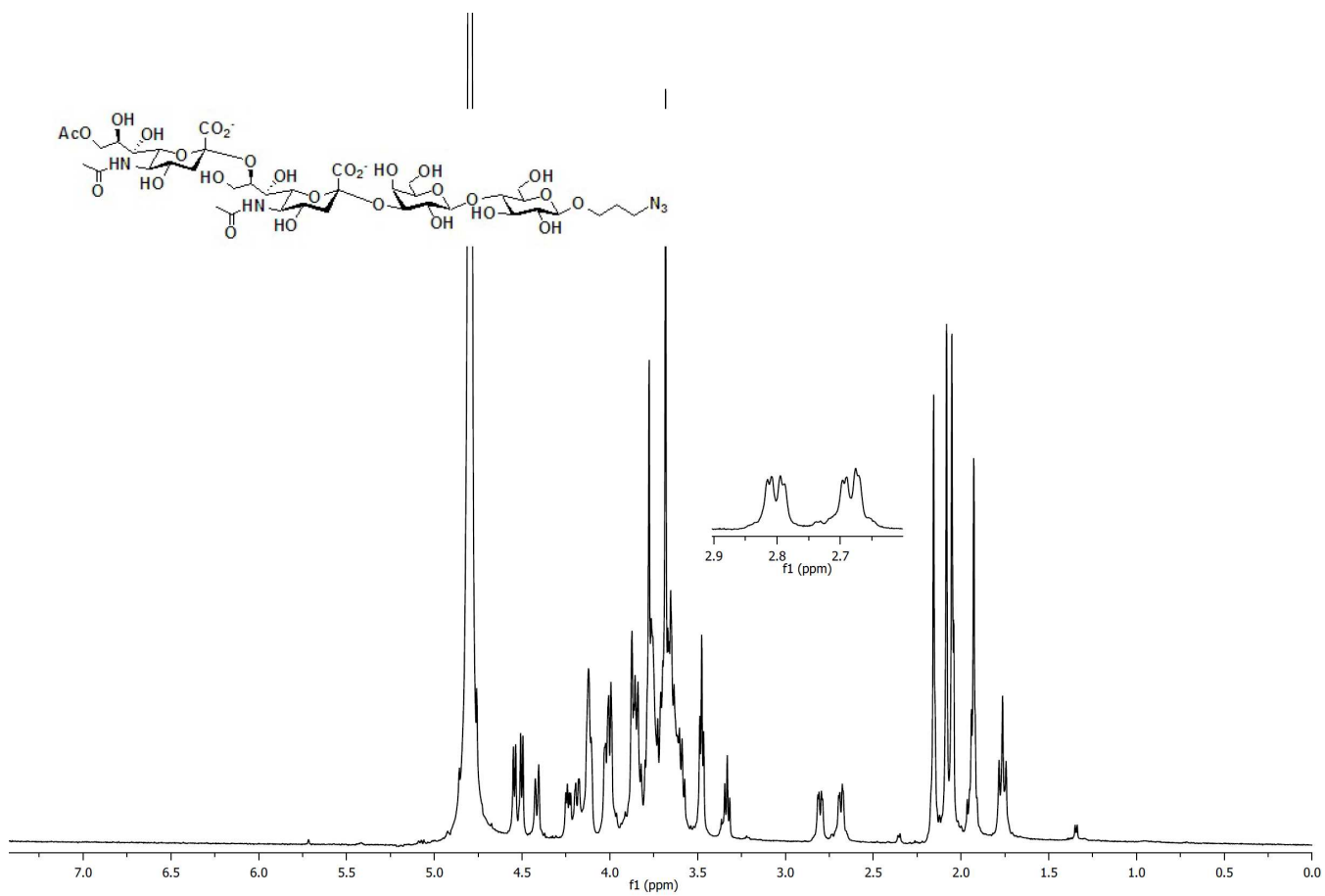




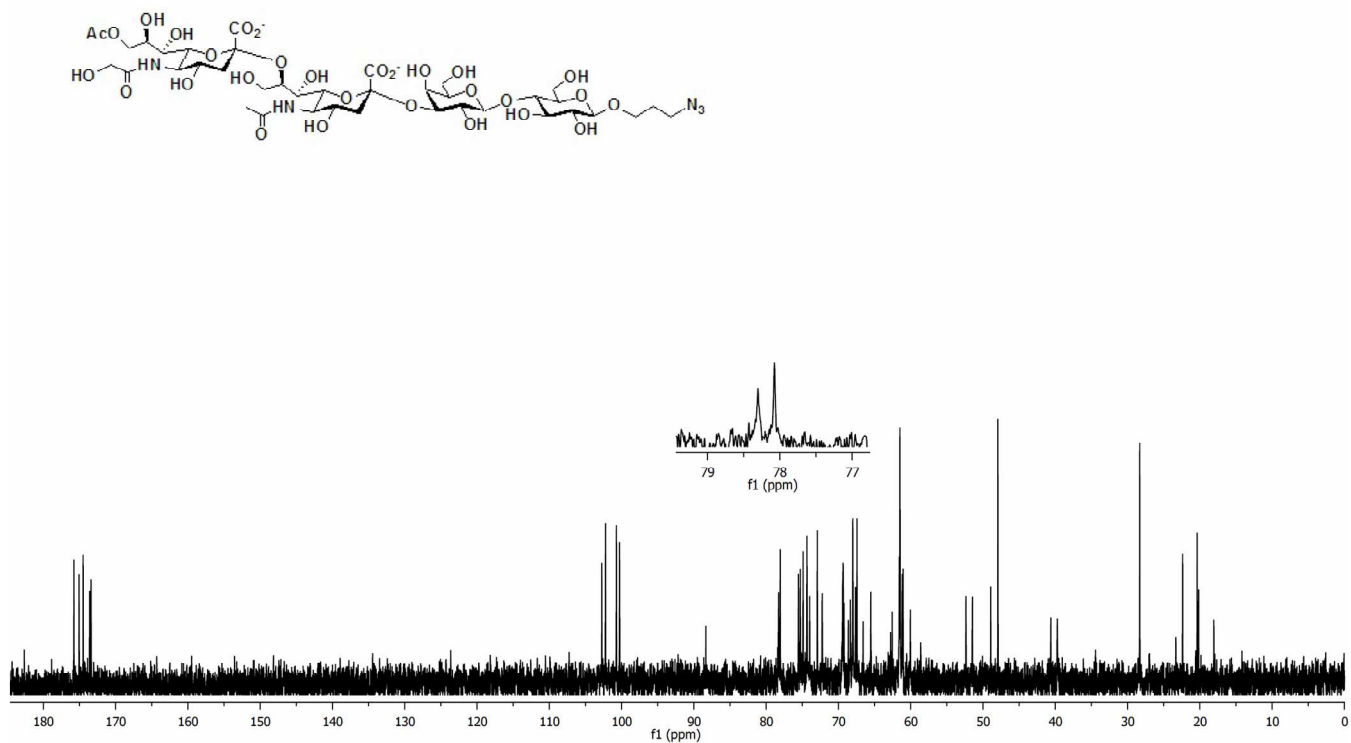
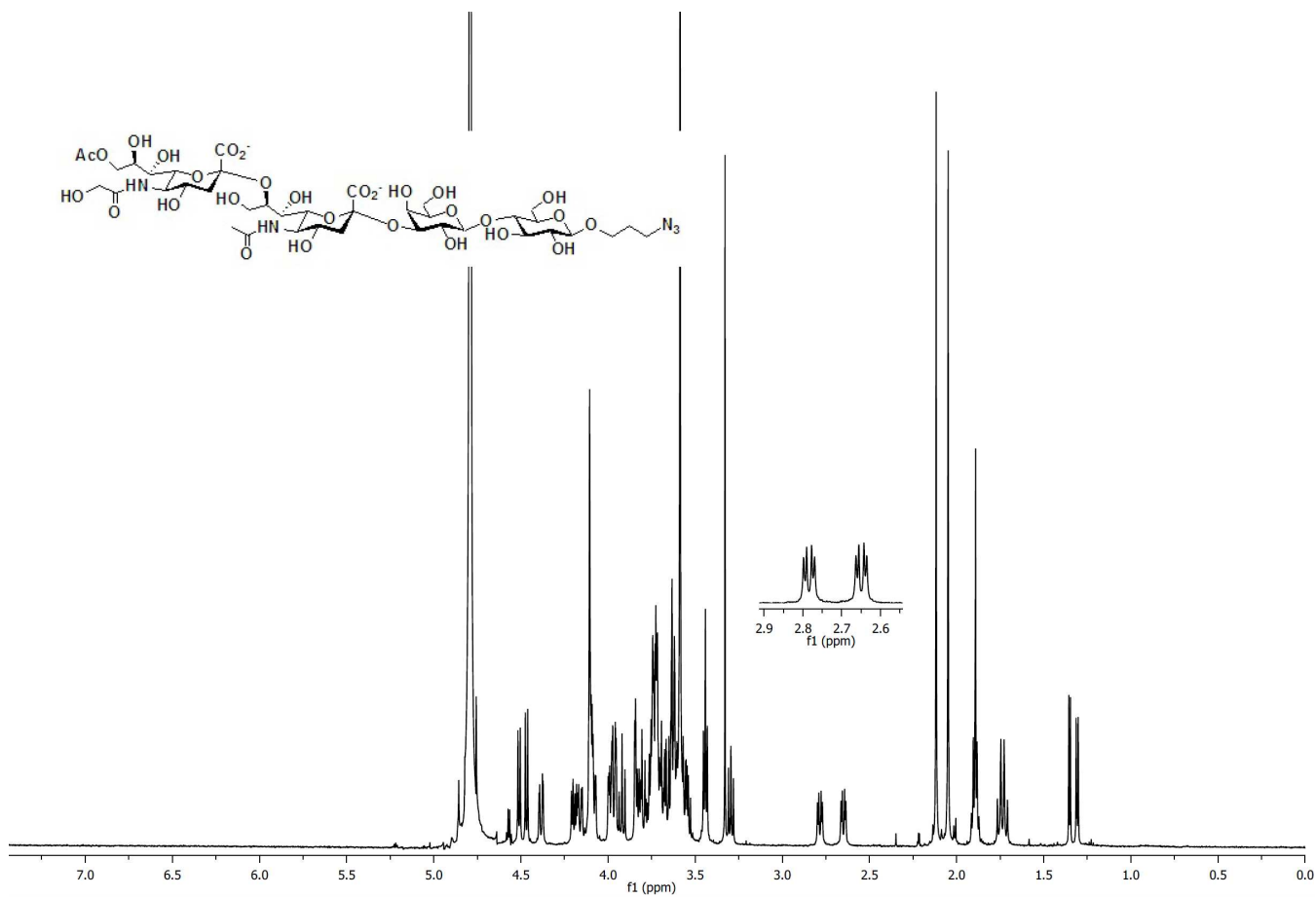
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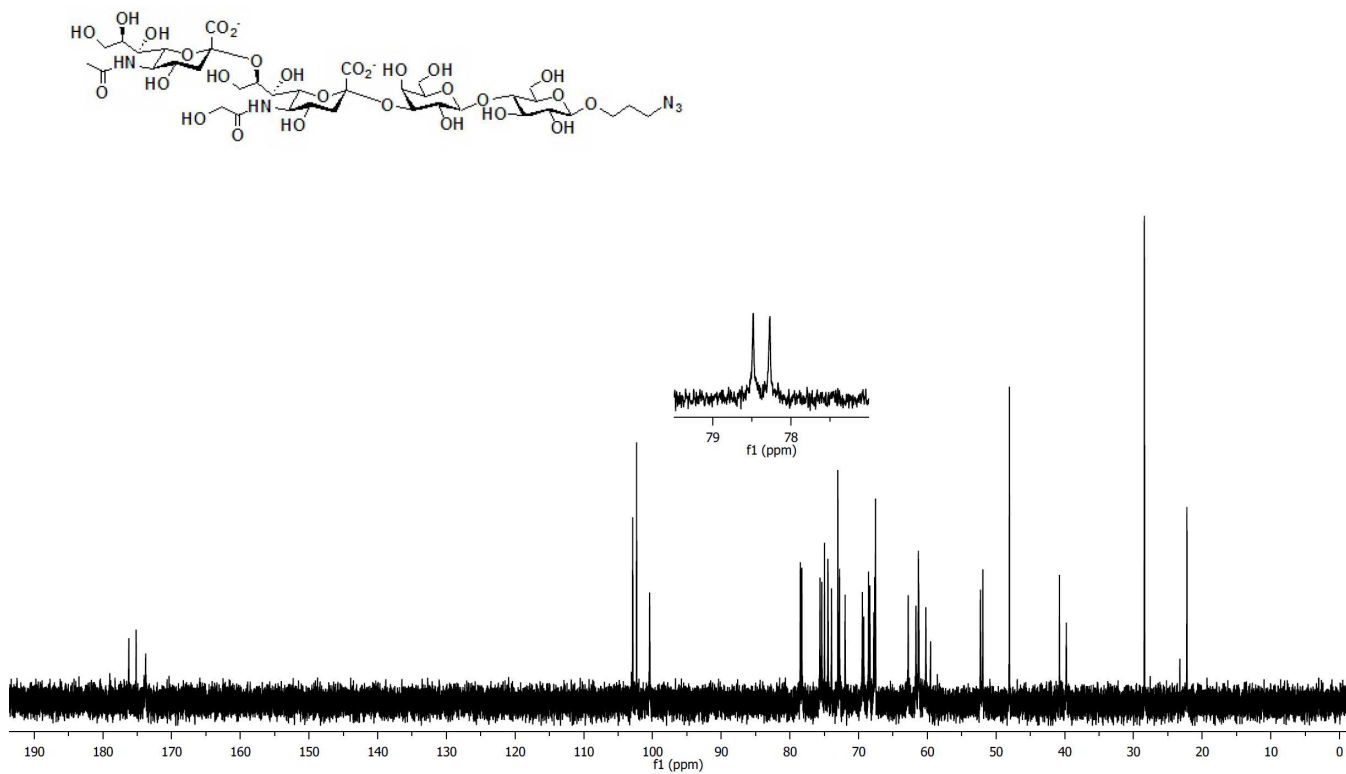
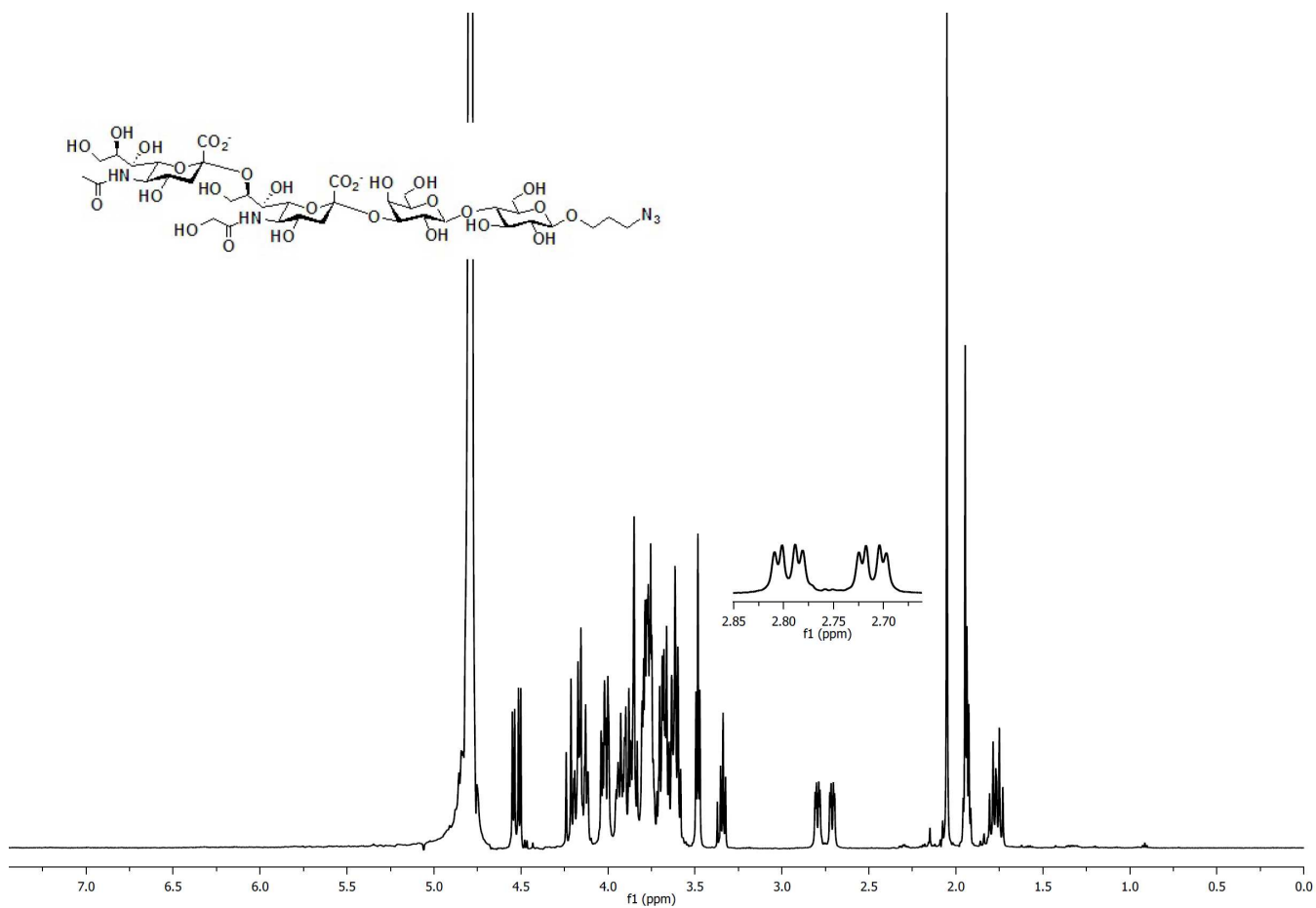
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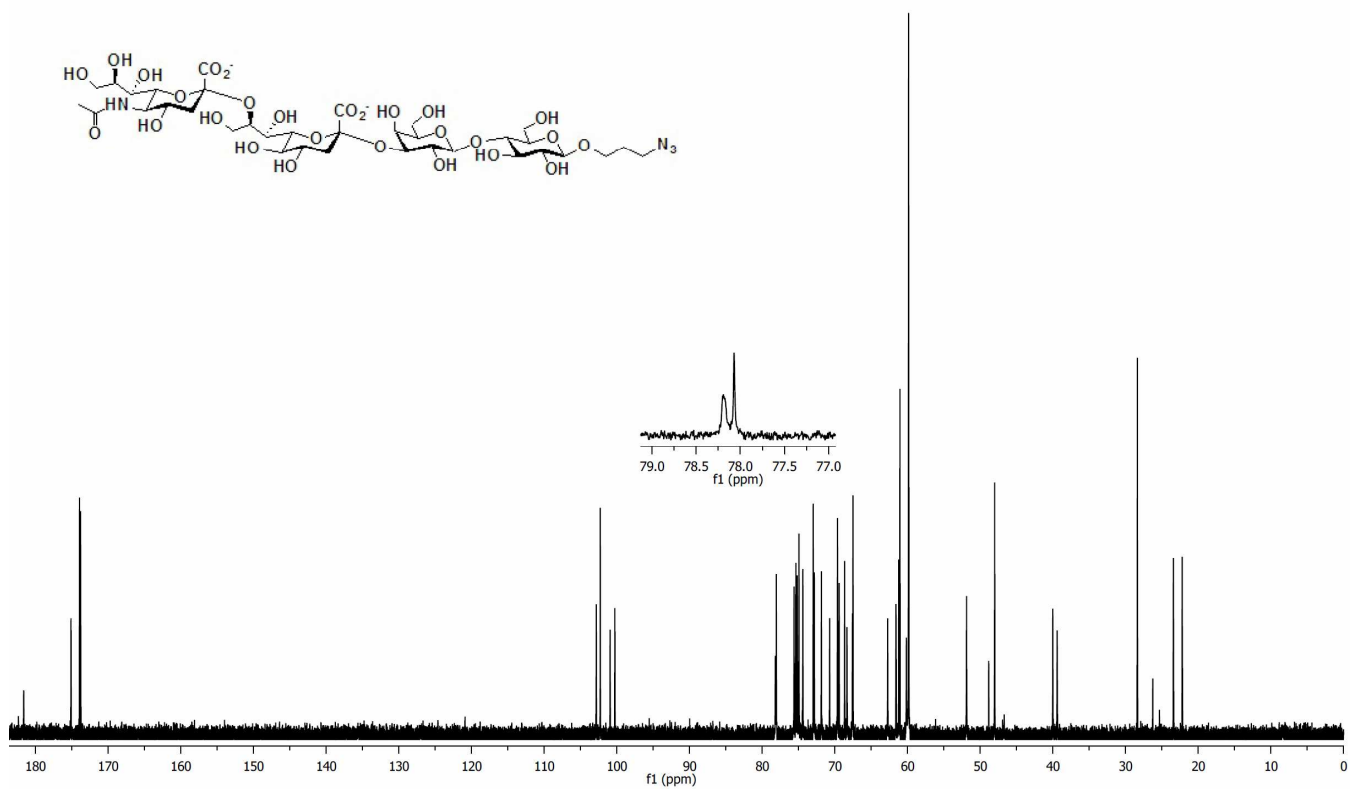
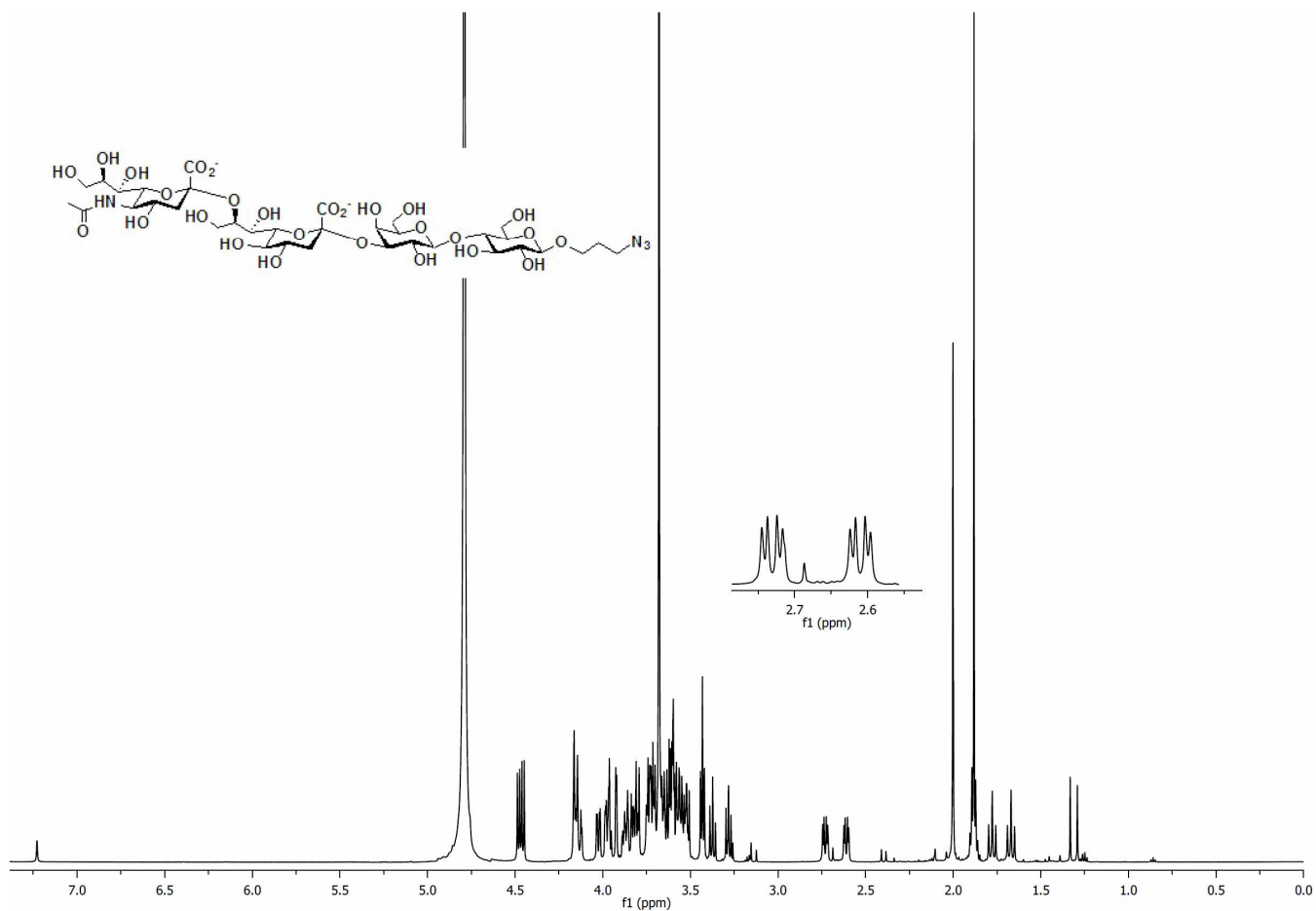
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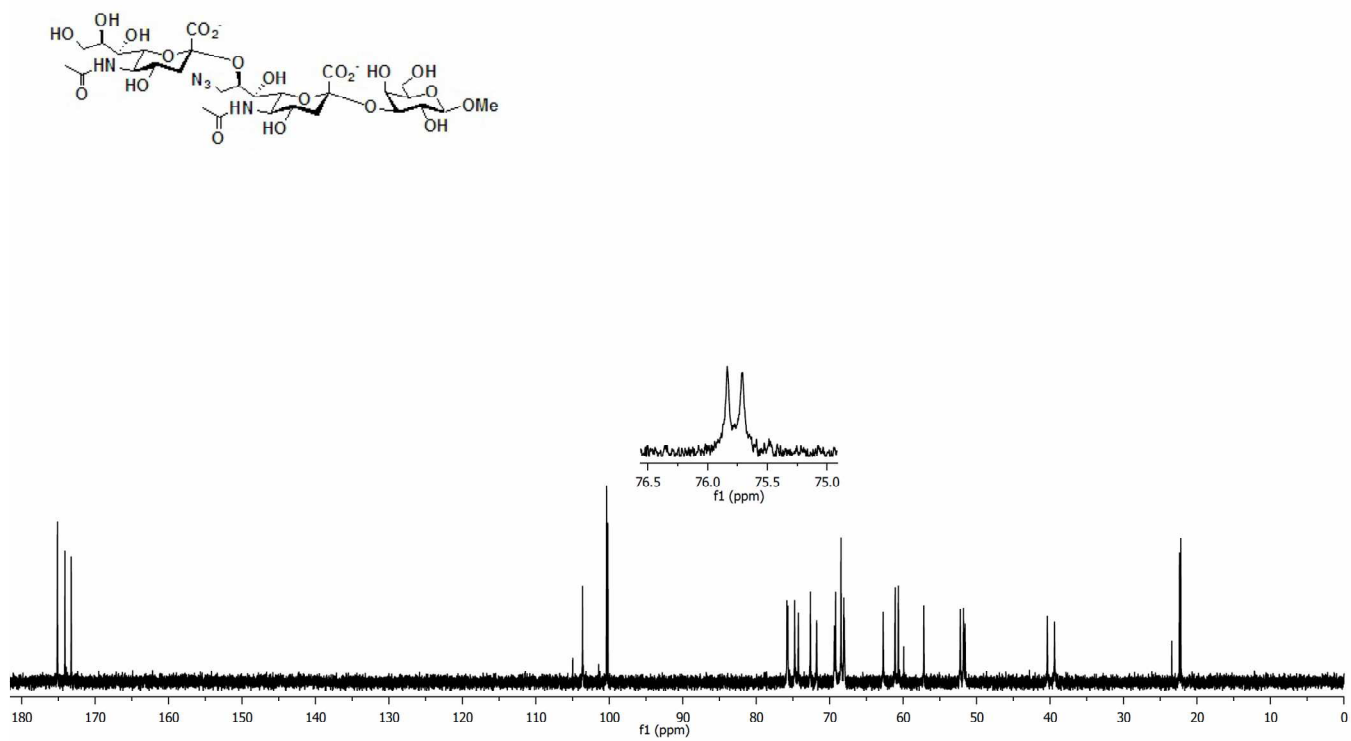
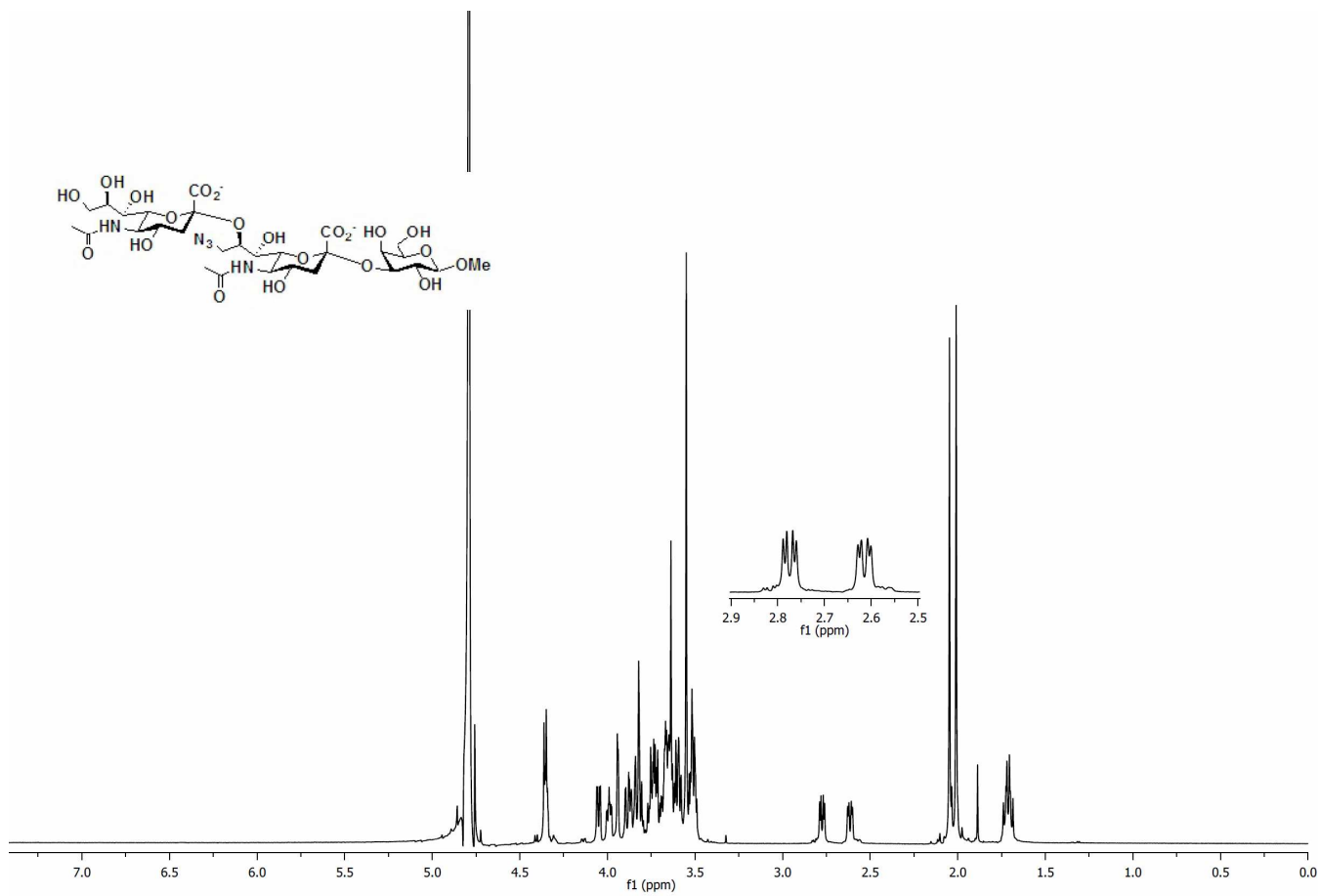
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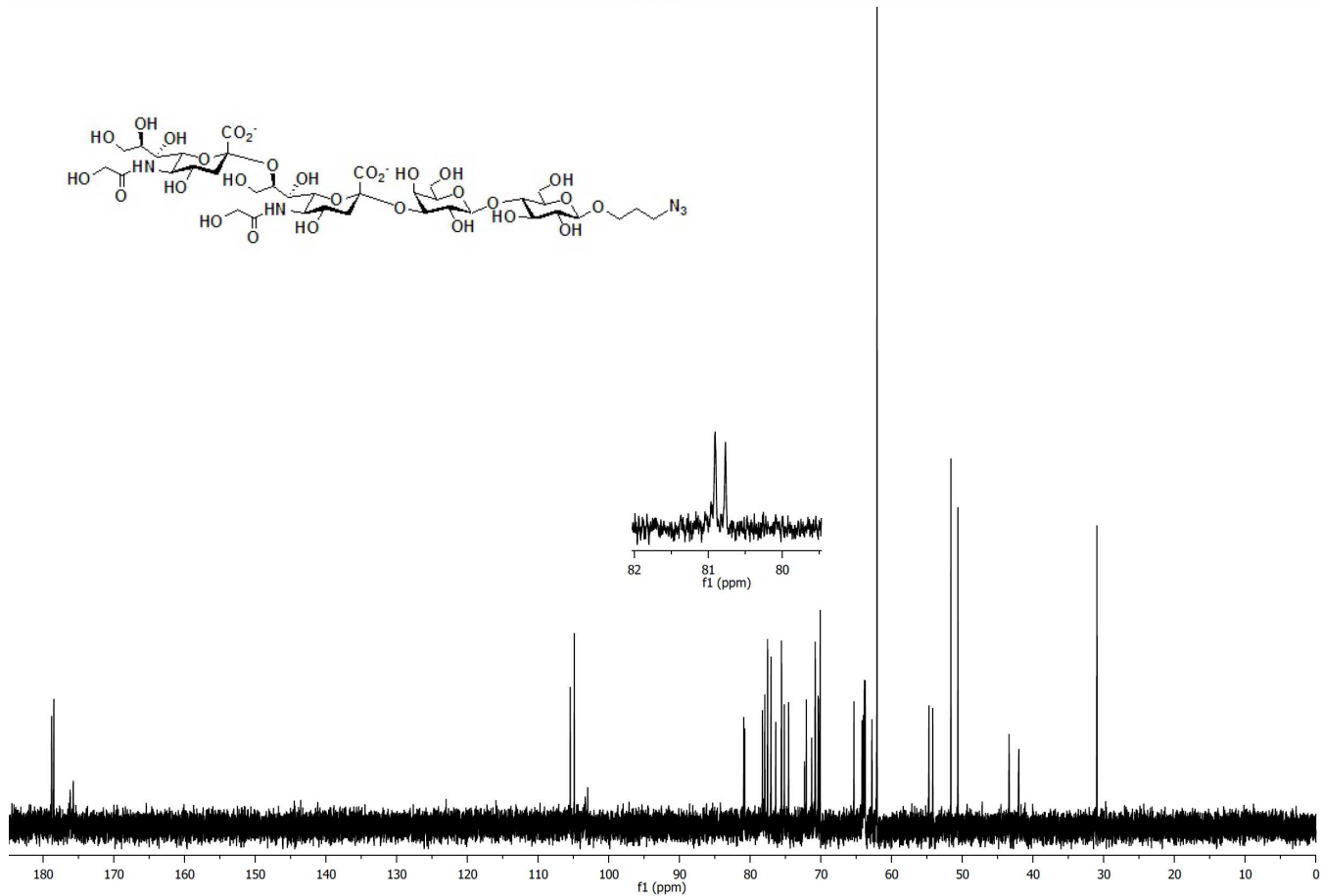
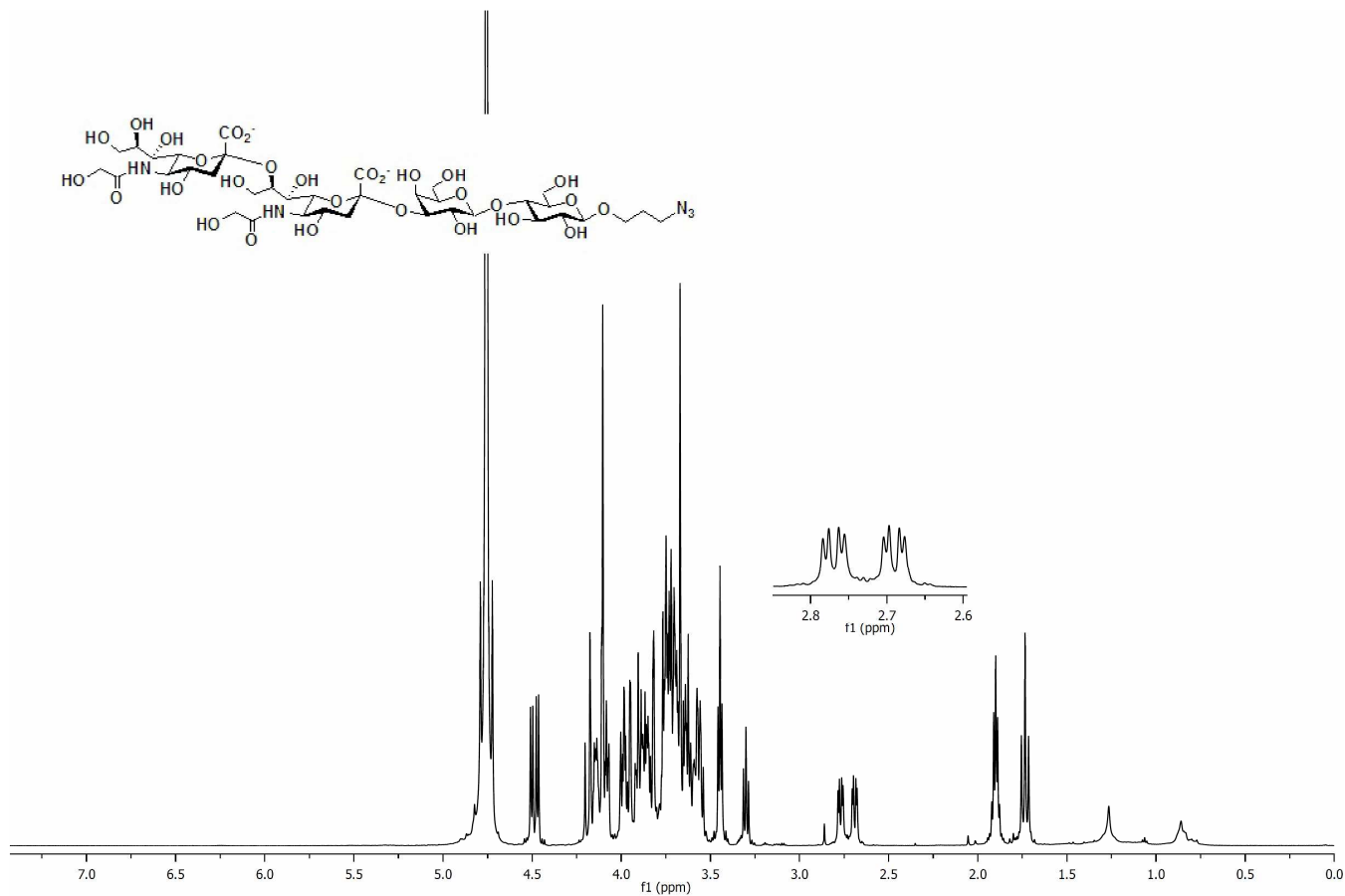
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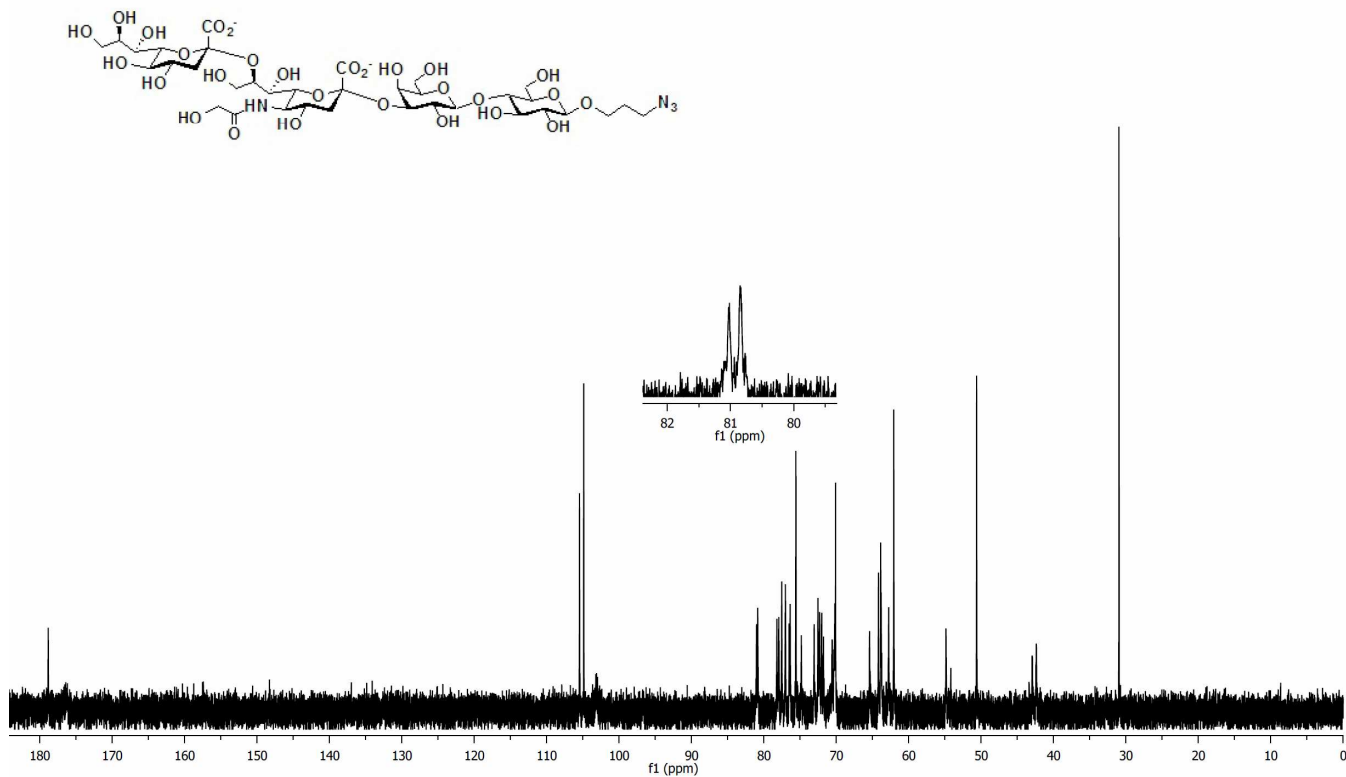
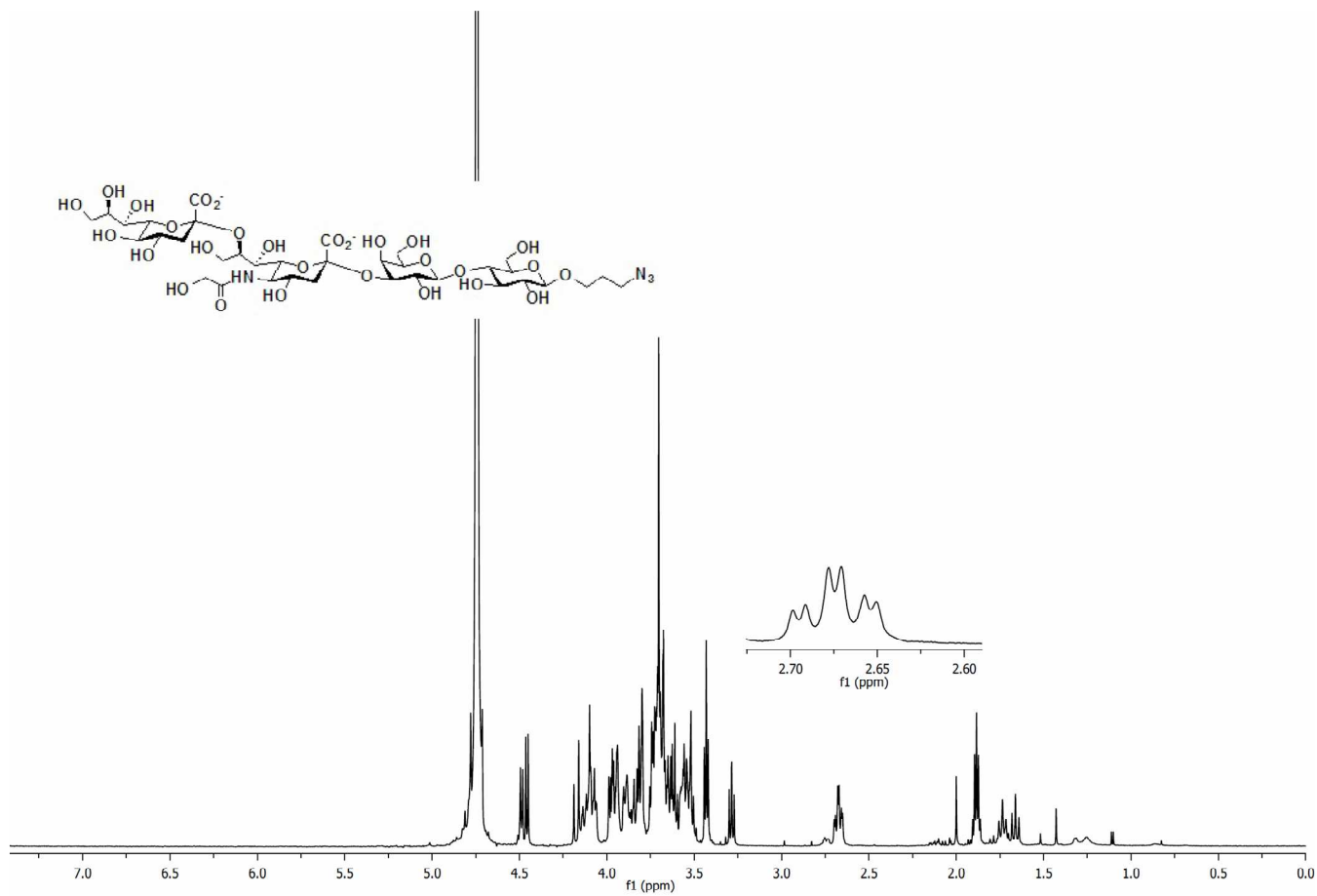
$^1\text{H}$  and  $^{13}\text{C}$  NMR for Neu5Ac $\alpha$ 2-8Neu5Ac9N $_3\alpha$ 2-3Gal $\beta$ OMe (**24**)



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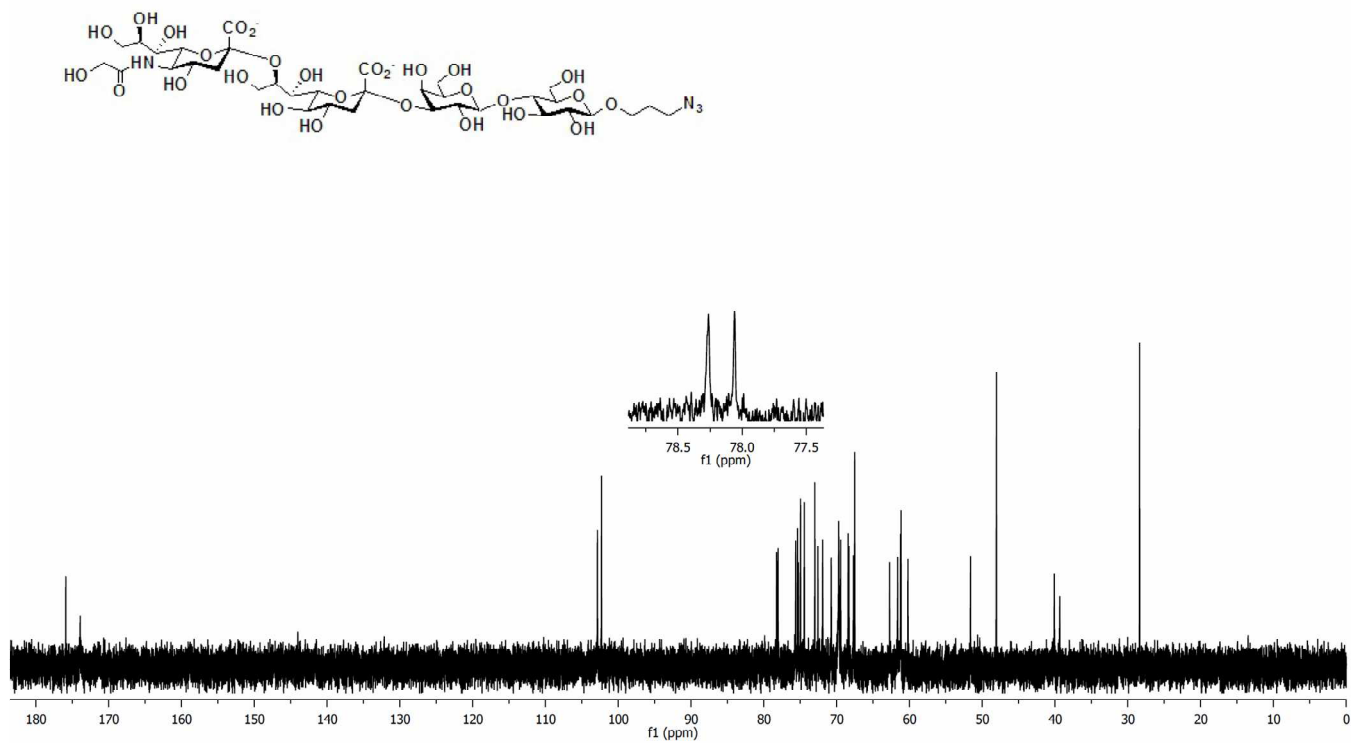
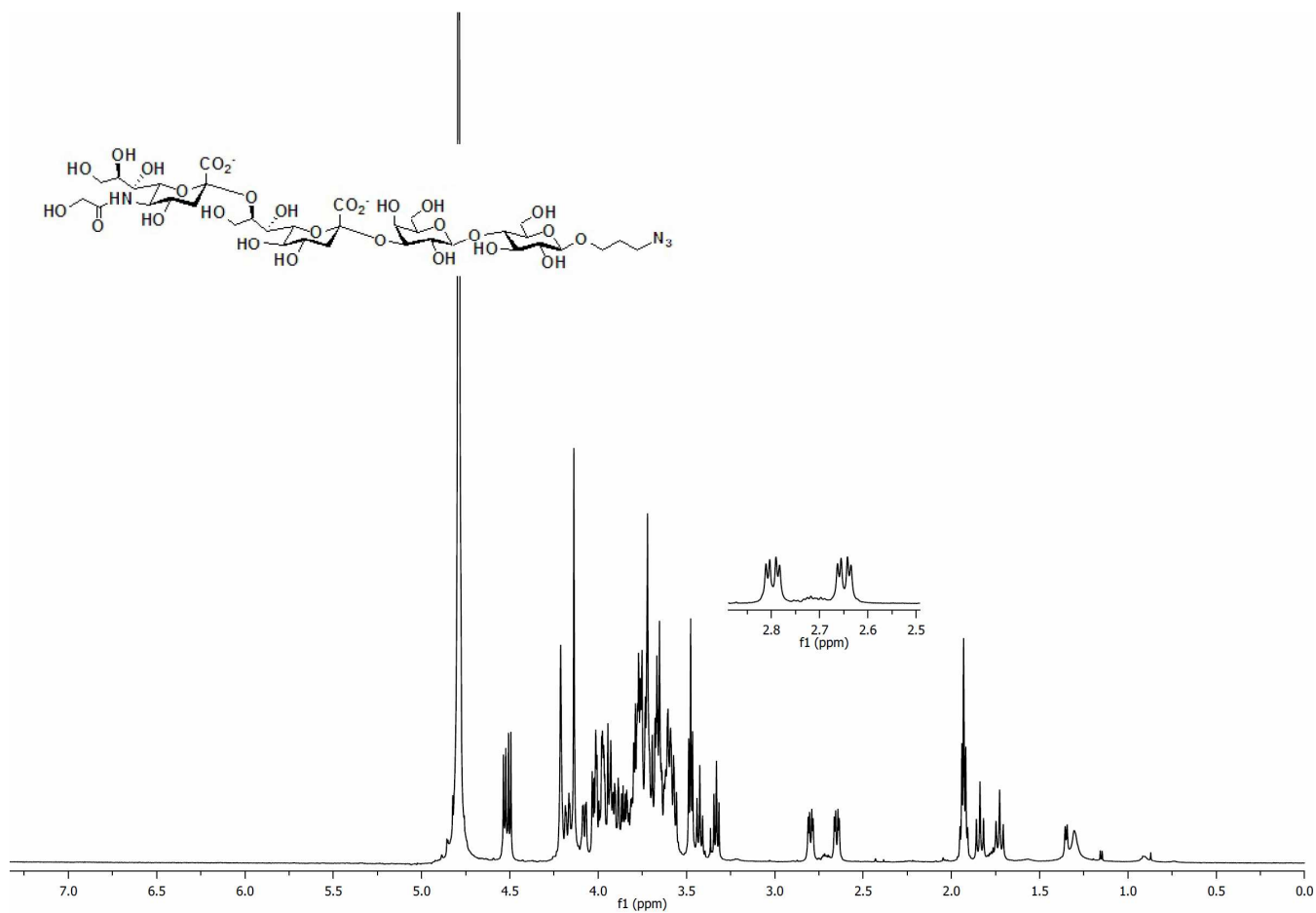


$^1\text{H}$  and  $^{13}\text{C}$  NMR for KDN $\alpha$ 2-8Neu5Gc $\alpha$ 2-3Lac $\beta$ ProN $_3$  (**29**)

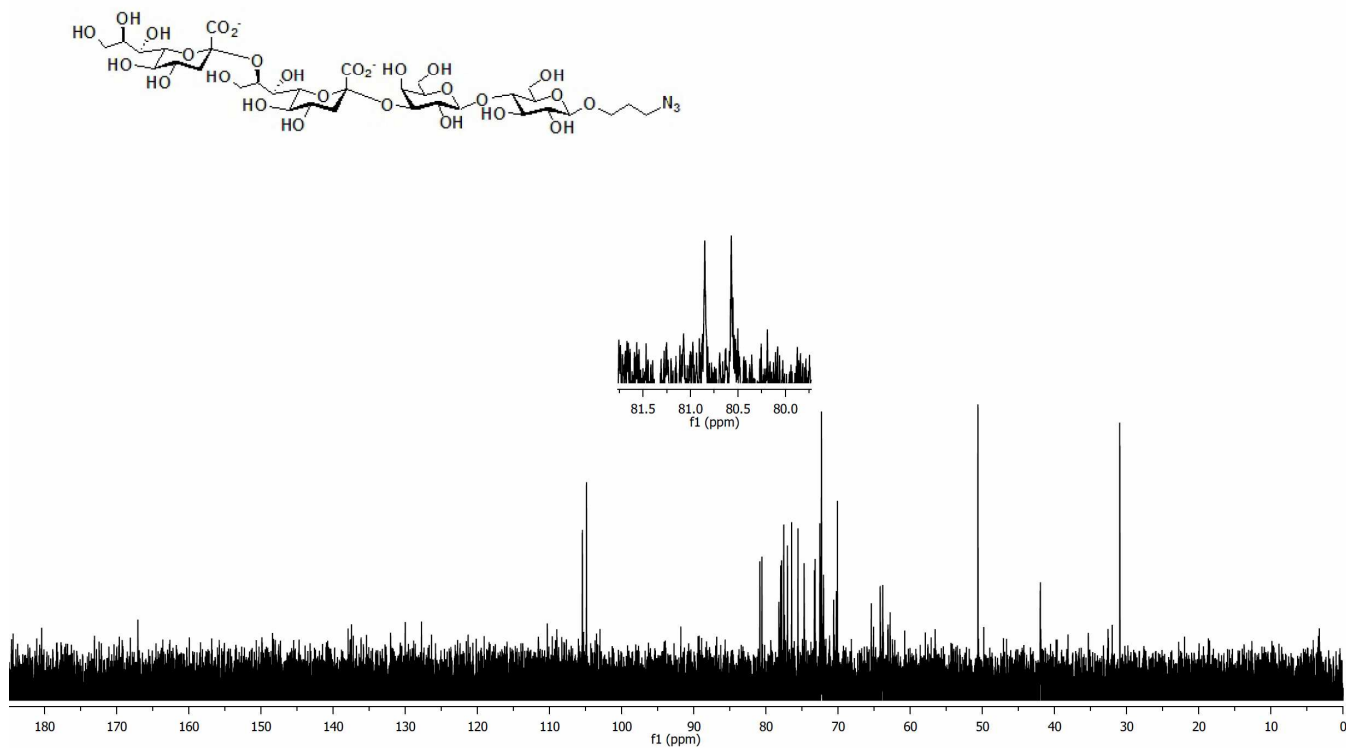
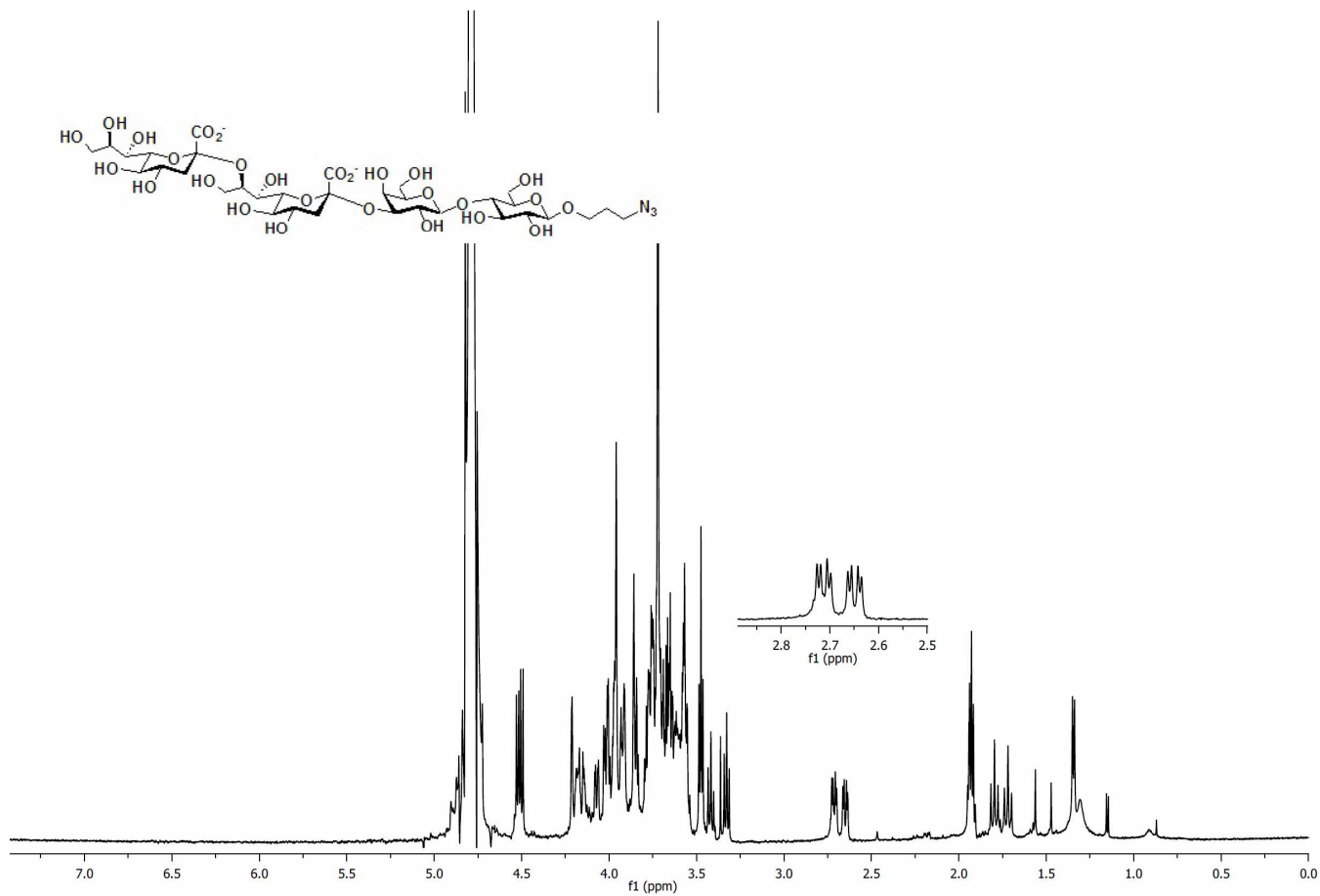




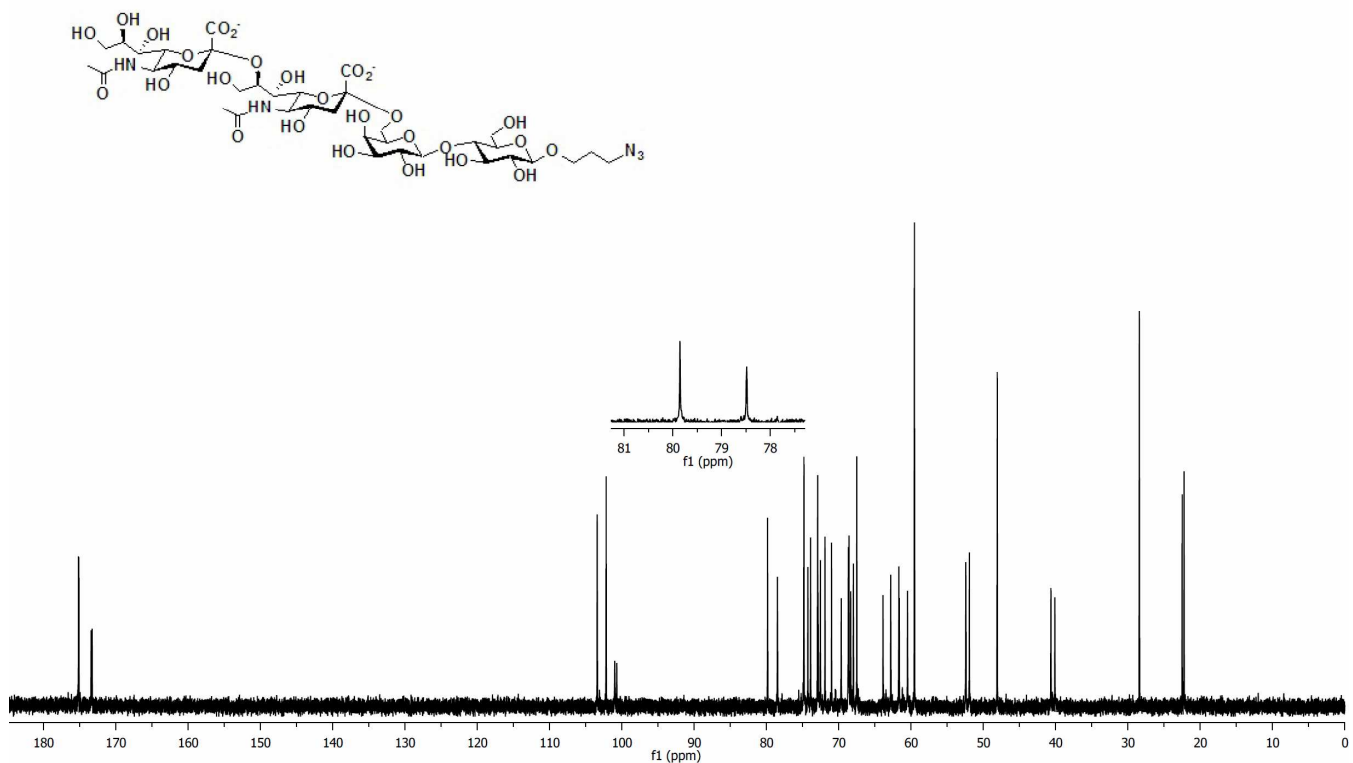
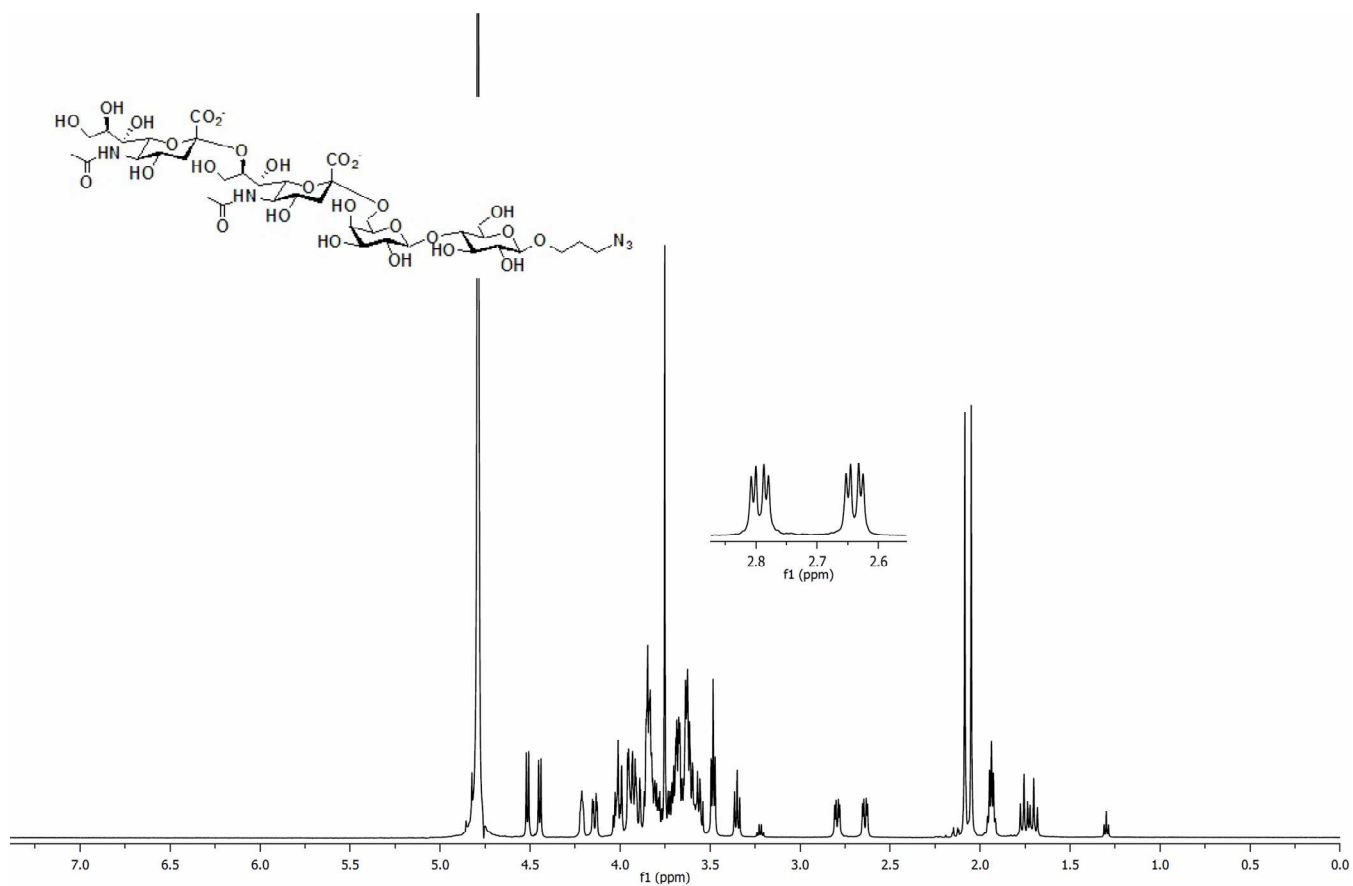
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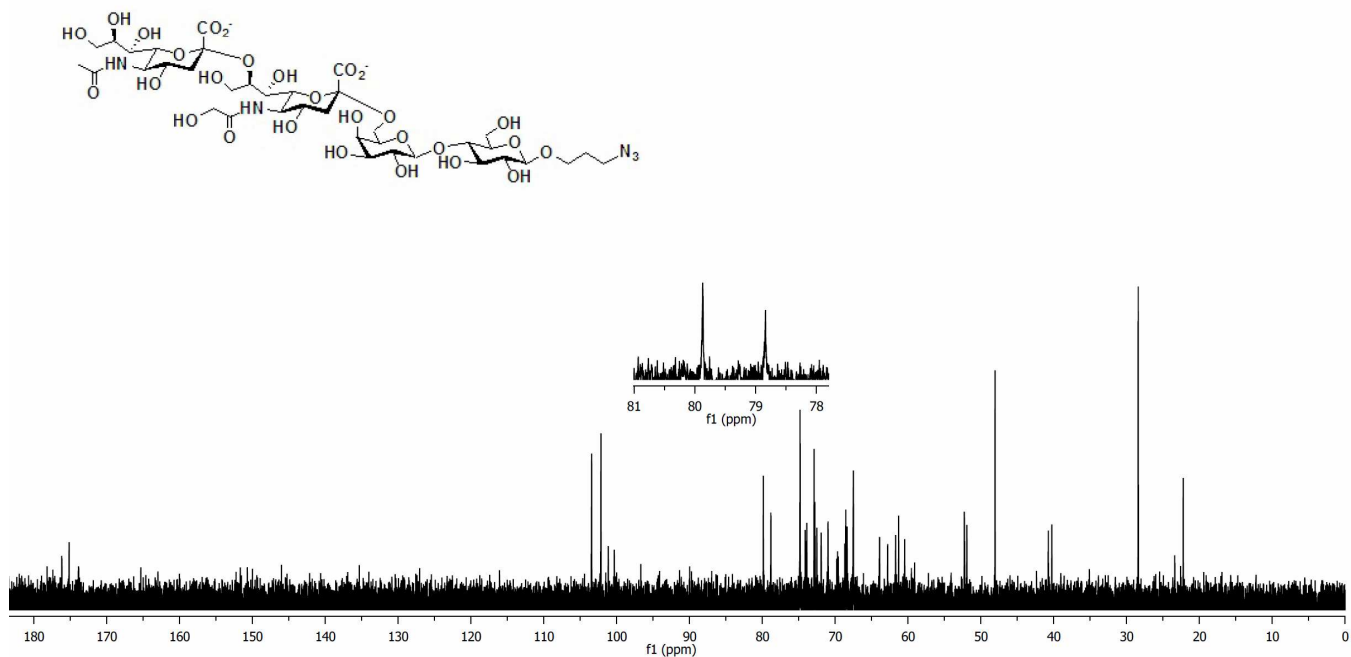
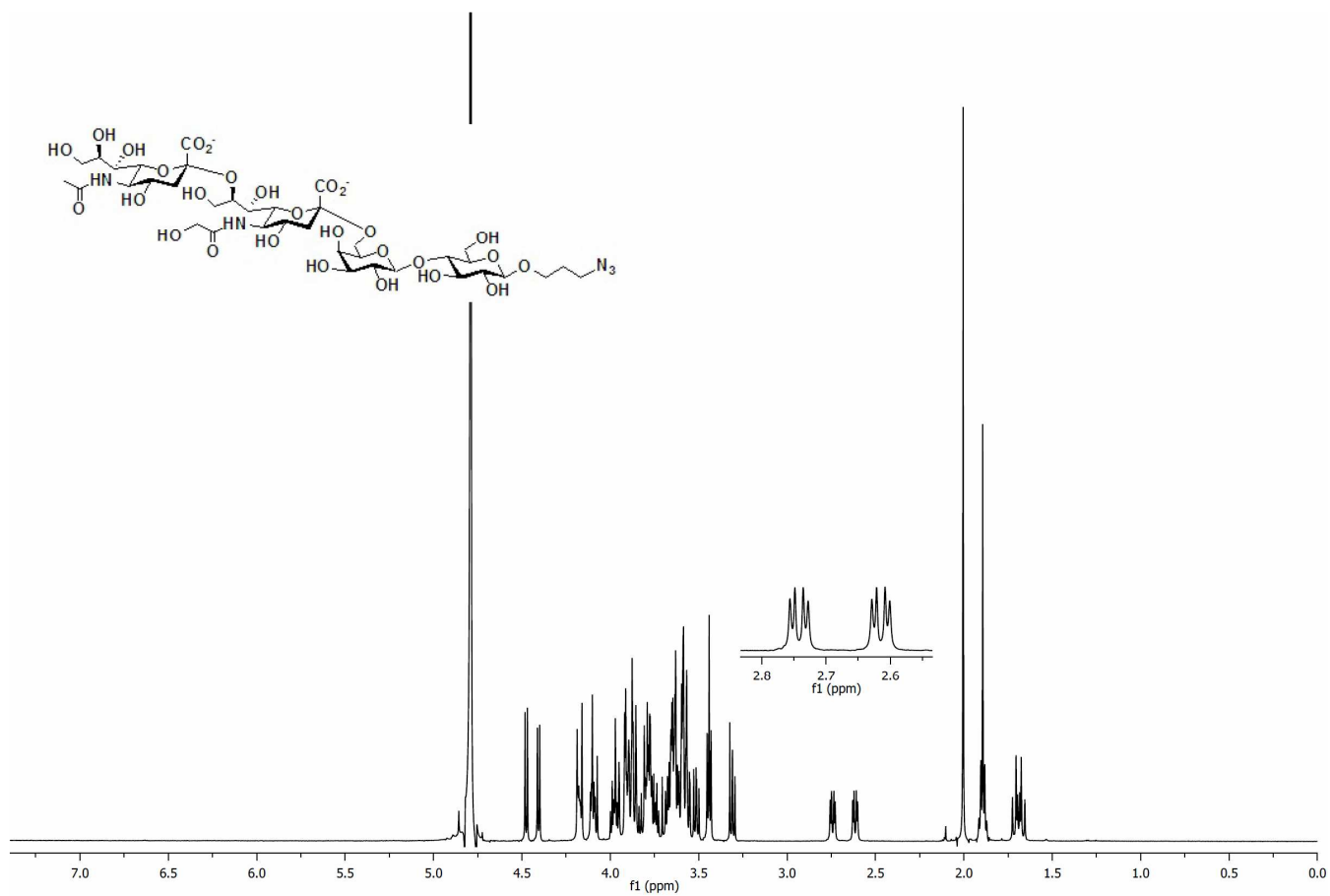
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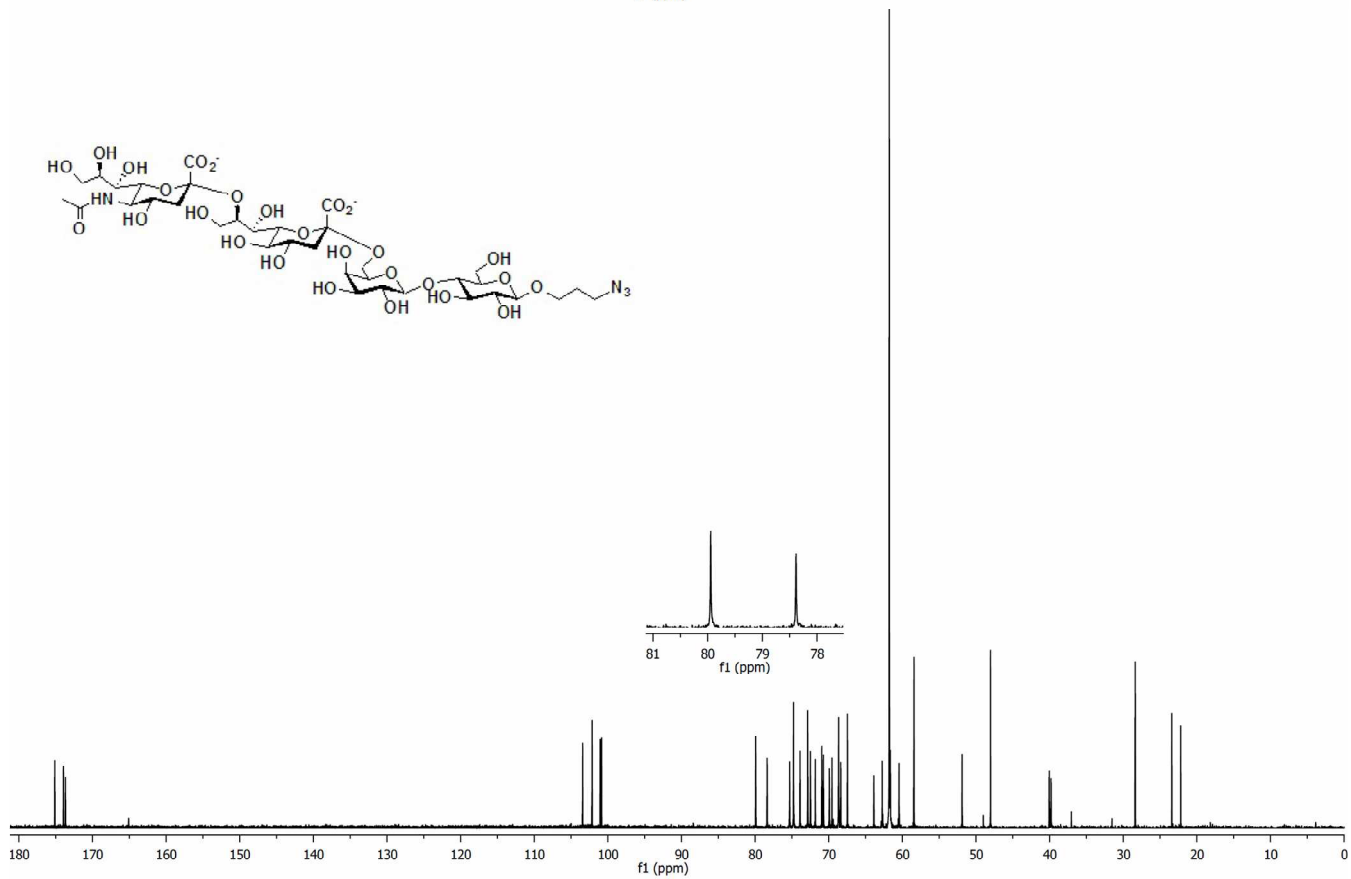
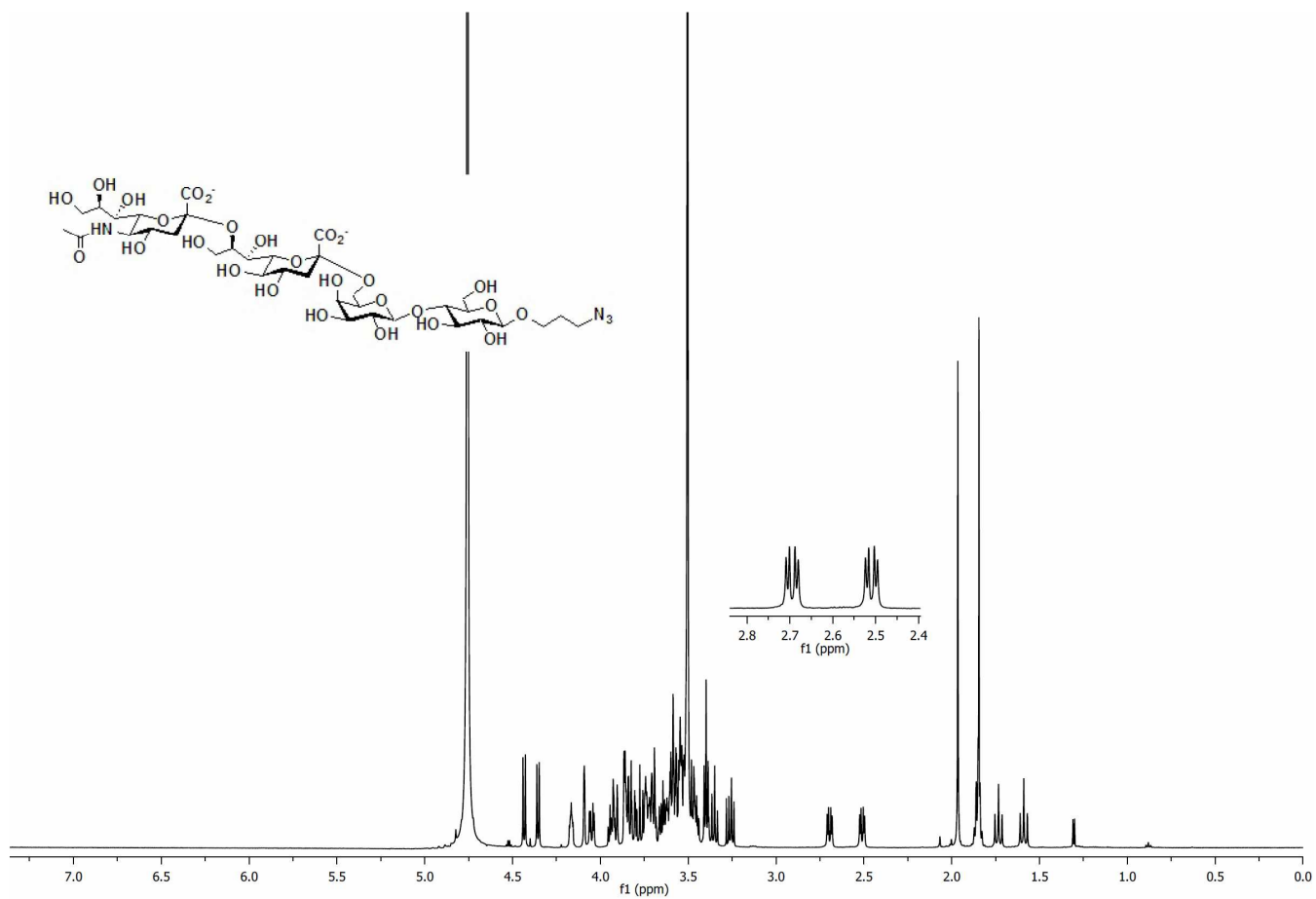
$^1\text{H}$  and  $^{13}\text{C}$  NMR for Neu5Ac $\alpha$ 2-8Neu5Ac $\alpha$ 2-6Lac $\beta$ ProN $_3$  (**34**)



$^1\text{H}$  and  $^{13}\text{C}$  NMR for Neu5Ac $\alpha$ 2-8Neu5Gc $\alpha$ 2-6Lac $\beta$ ProN $_3$  (**36**)



$^1\text{H}$  and  $^{13}\text{C}$  NMR for Neu5Ac $\alpha$ 2-8KDN $\alpha$ 2-6Lac $\beta$ ProN $_3$  (**38**)



$^1\text{H}$  and  $^{13}\text{C}$  NMR of Neu5Ac $\alpha$ 2-8Neu5Ac9N $_3\alpha$ 2-6Gal $\beta$ OMe (**40**)

