

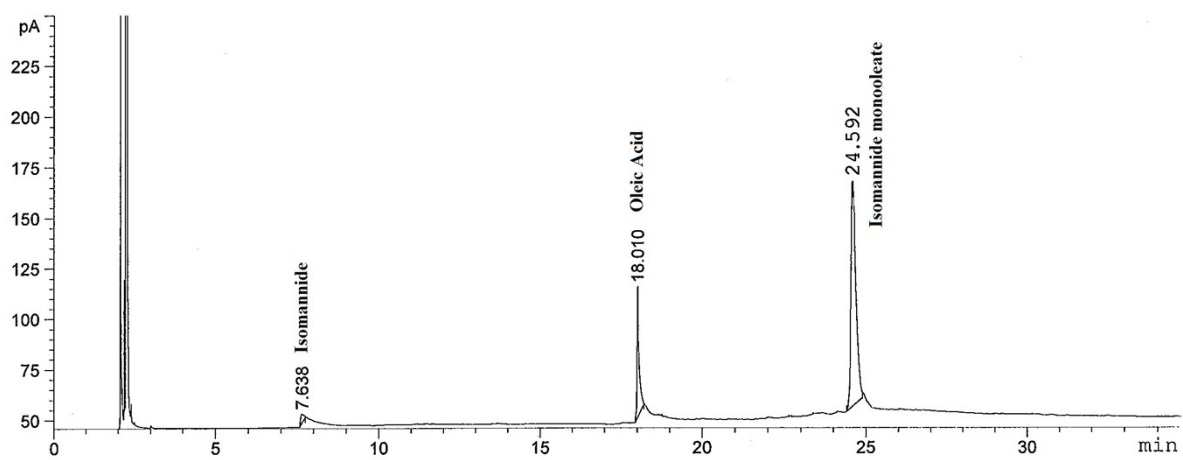
Green recyclable SO₃H-carbon catalyst for the selective synthesis of isomannide-based fatty acid monoesters as non-ionic bio-surfactants

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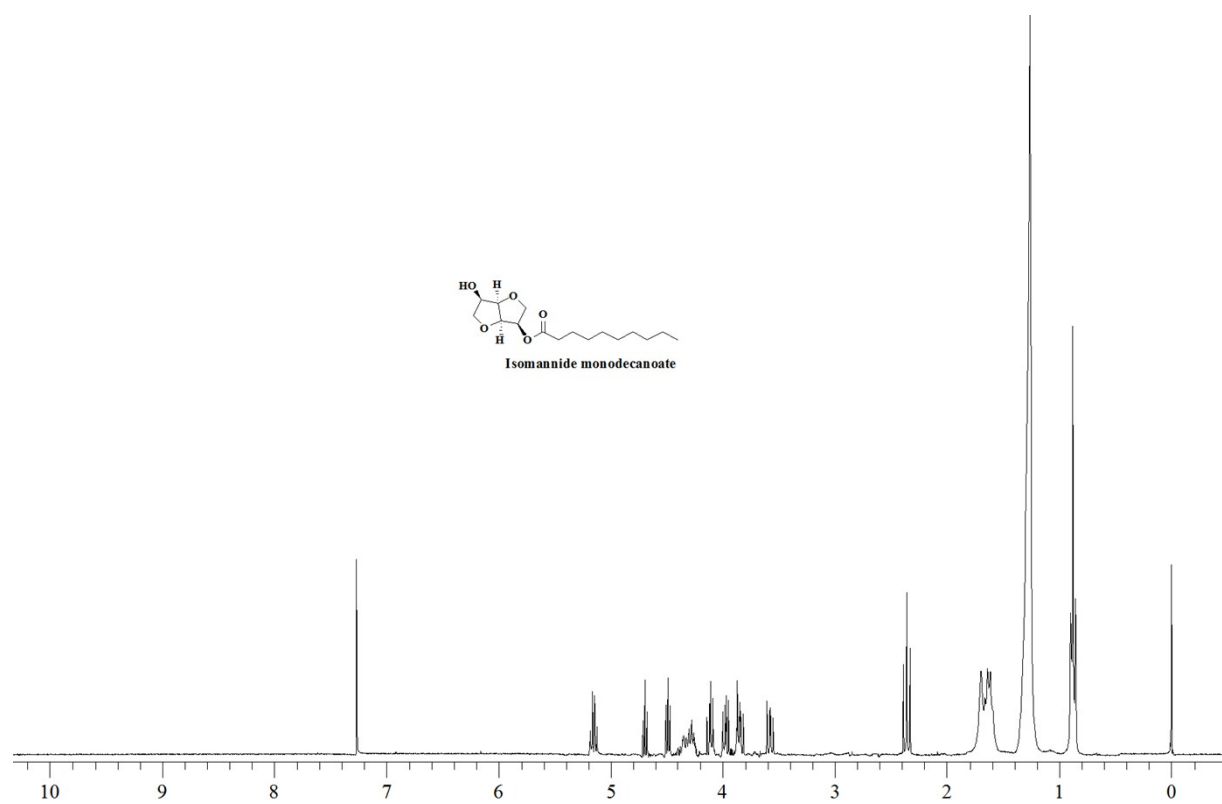
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| INDEX: | Page No. |
|---|-----------------|
| Gas Chromatogram..... | S2 |
| ¹ H & ¹³ C NMR Spectra..... | S3-S14 |

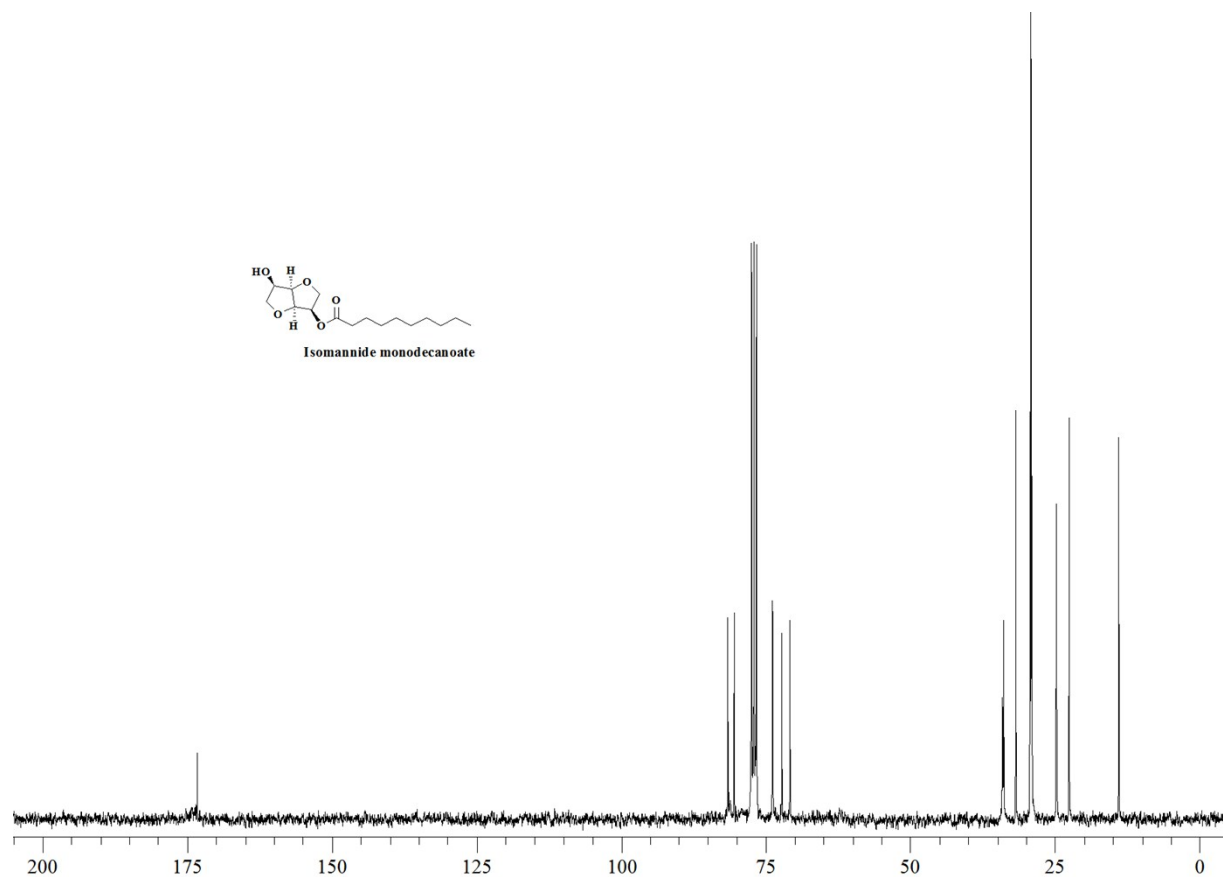
Gas Chromatogram of isomannide monooleate (3f)



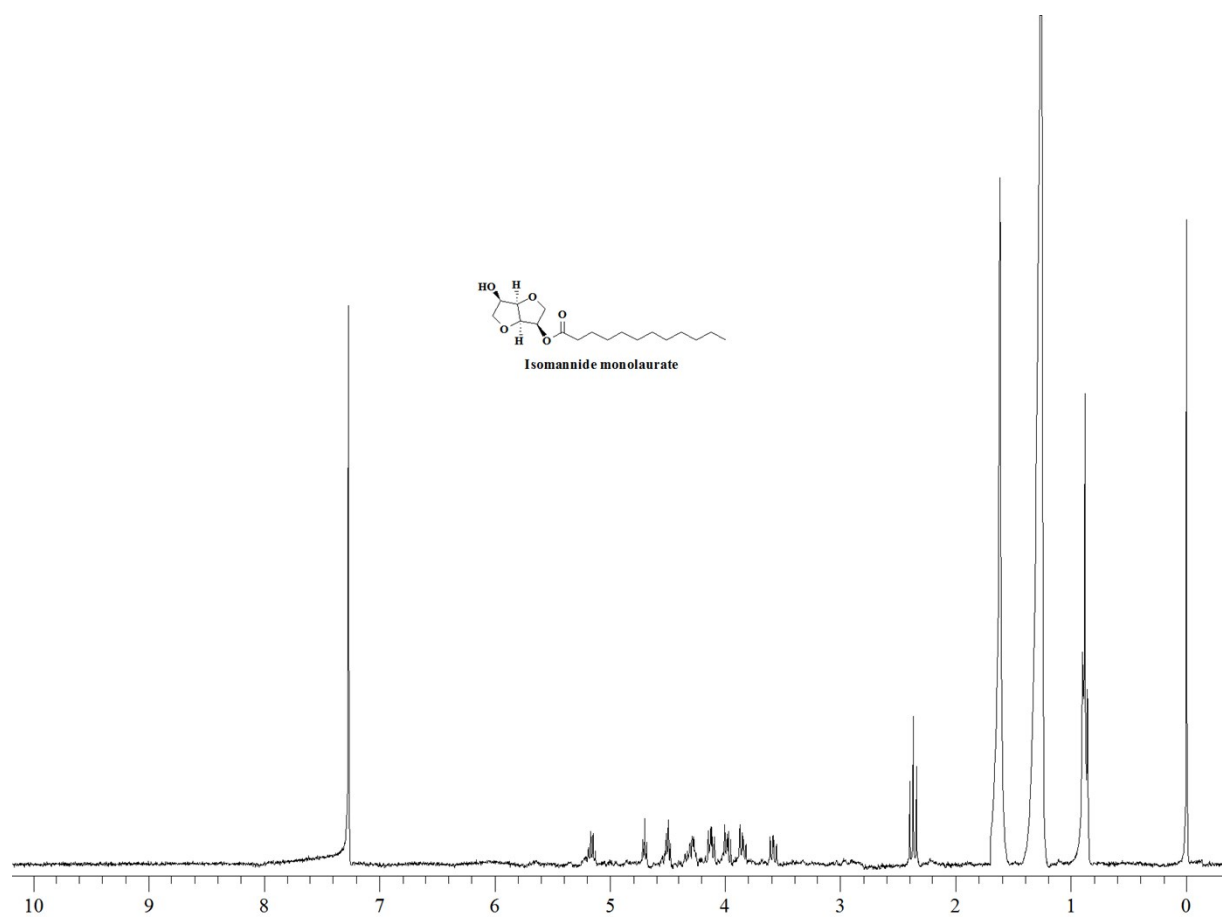
¹H NMR of isomannide monodecanoate (3a)



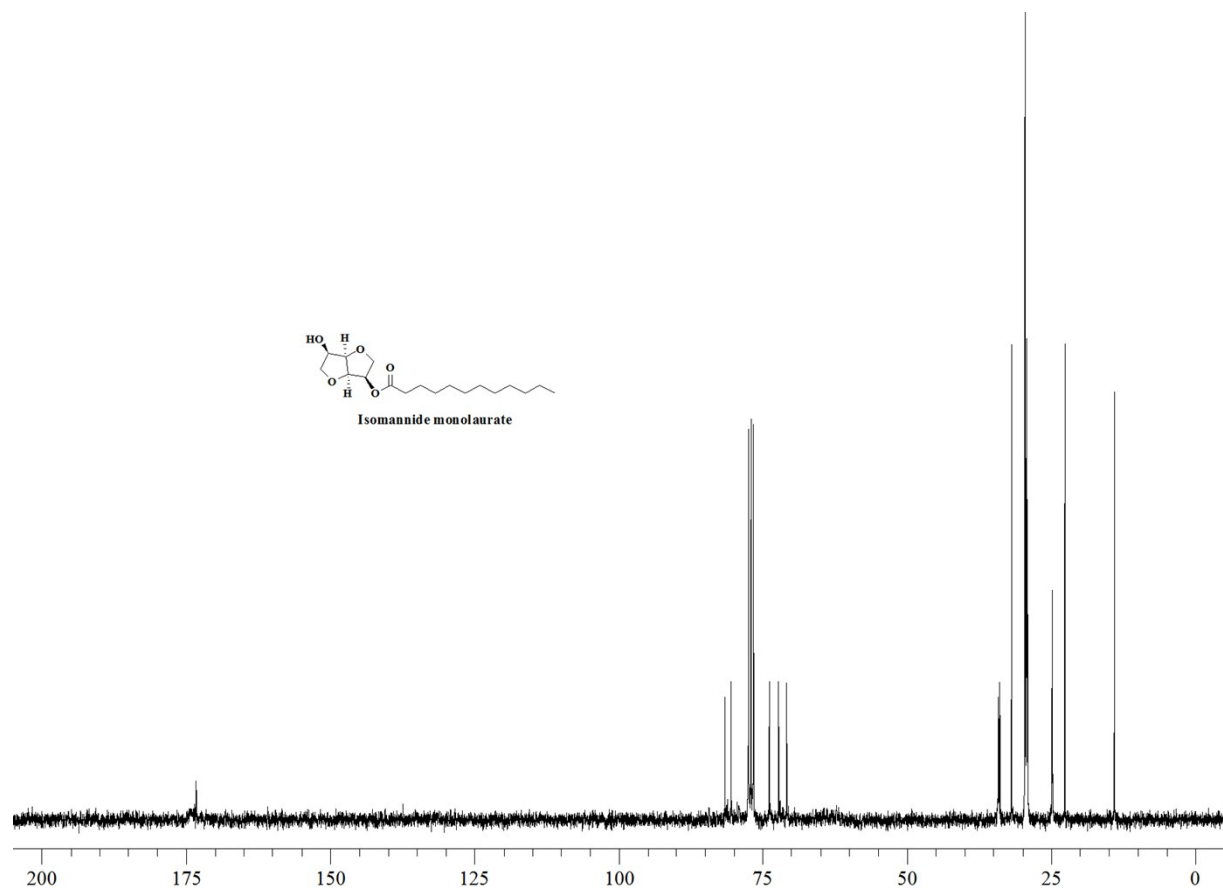
^{13}C NMR of isomannide monodecanoate (3a)



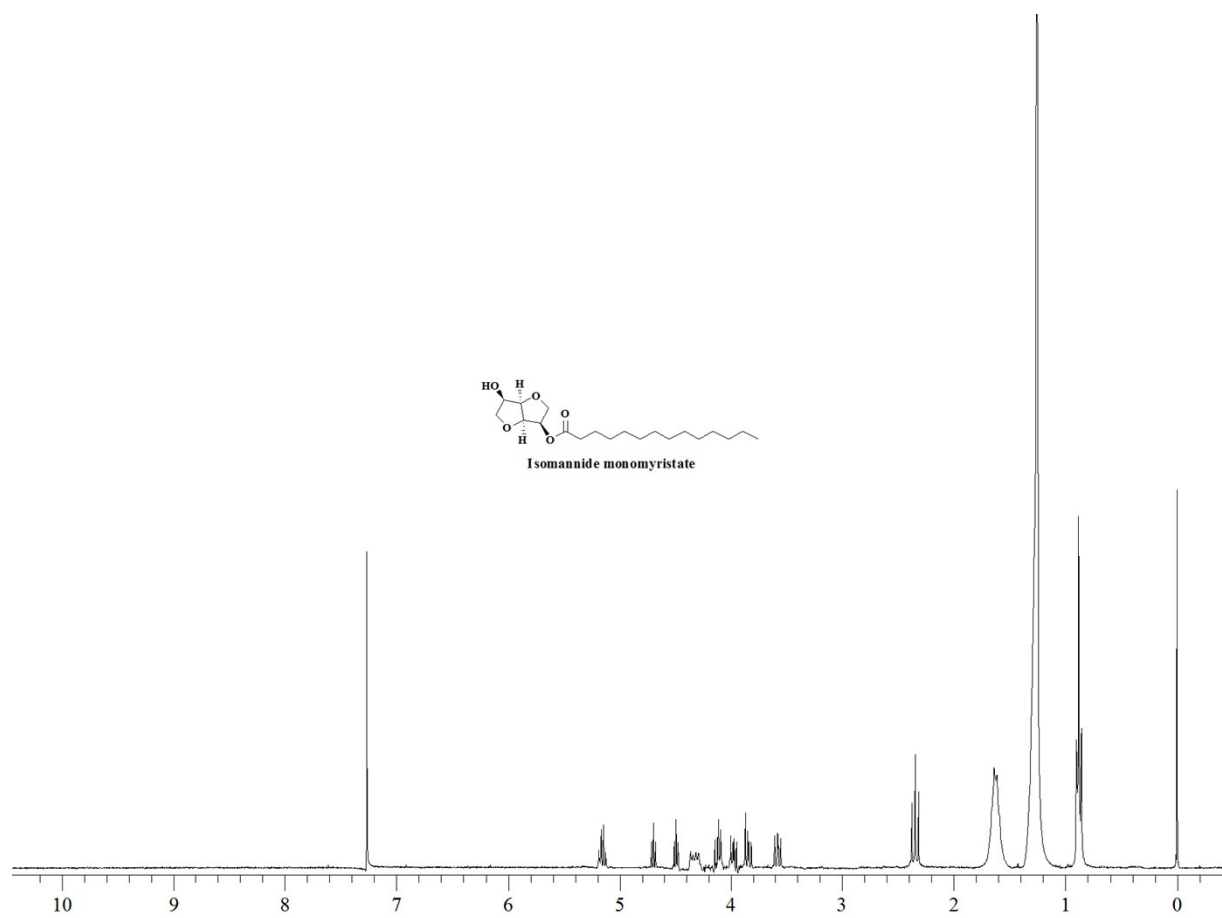
¹H NMR of isomannide monolaurate (3b)



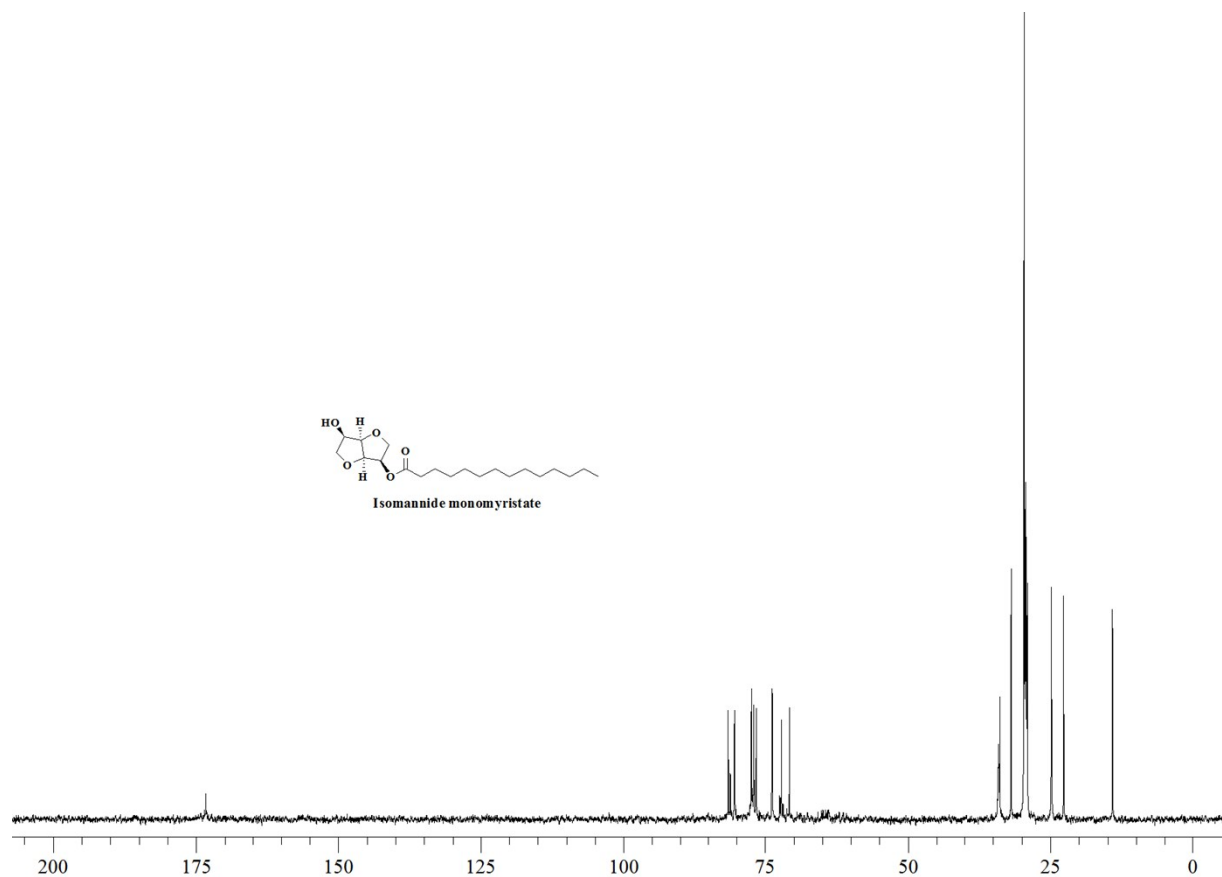
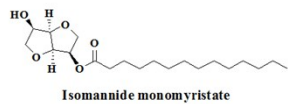
¹³C NMR of isomannide monolaurate (3b)



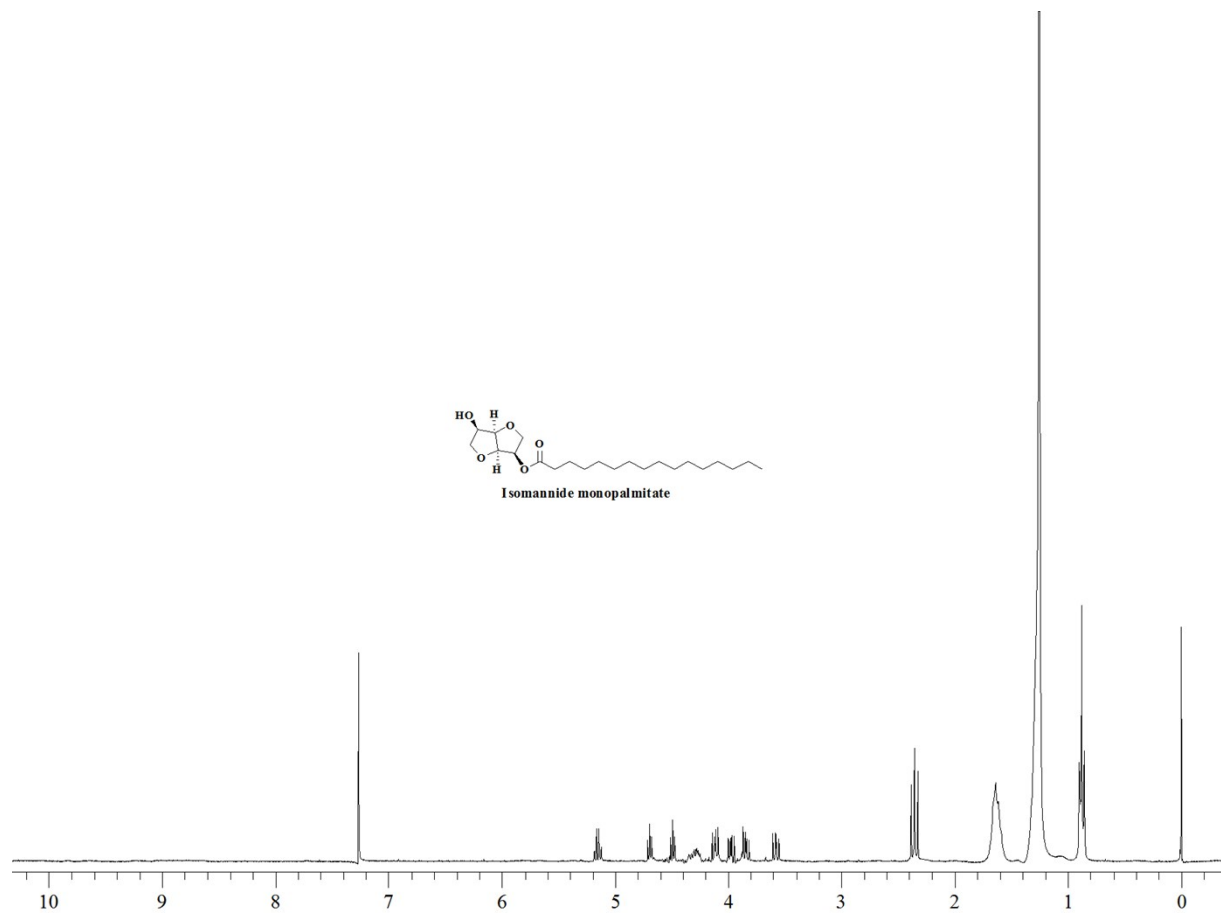
¹H NMR of isomannide monomyristate (3c)



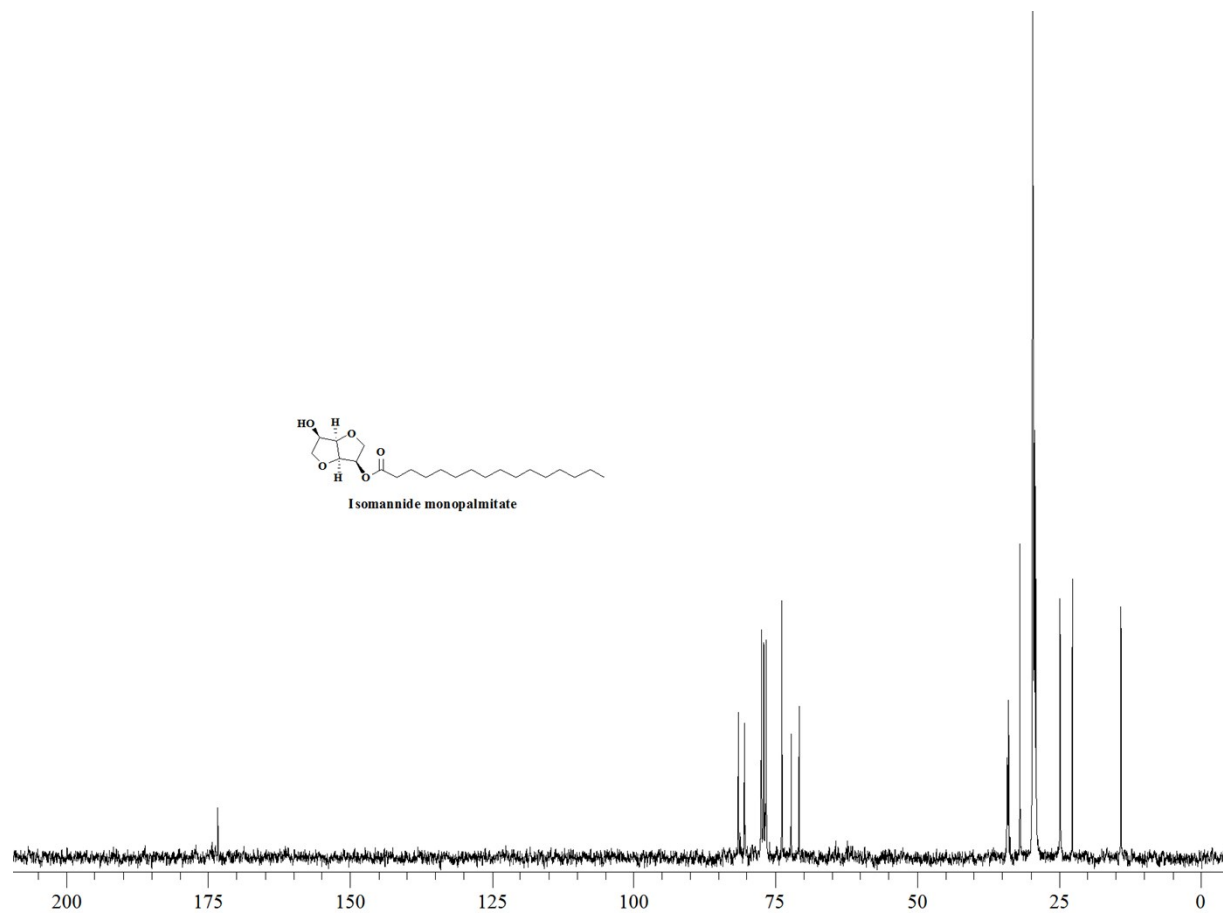
^{13}C NMR of isomannide monomyristate (3c)



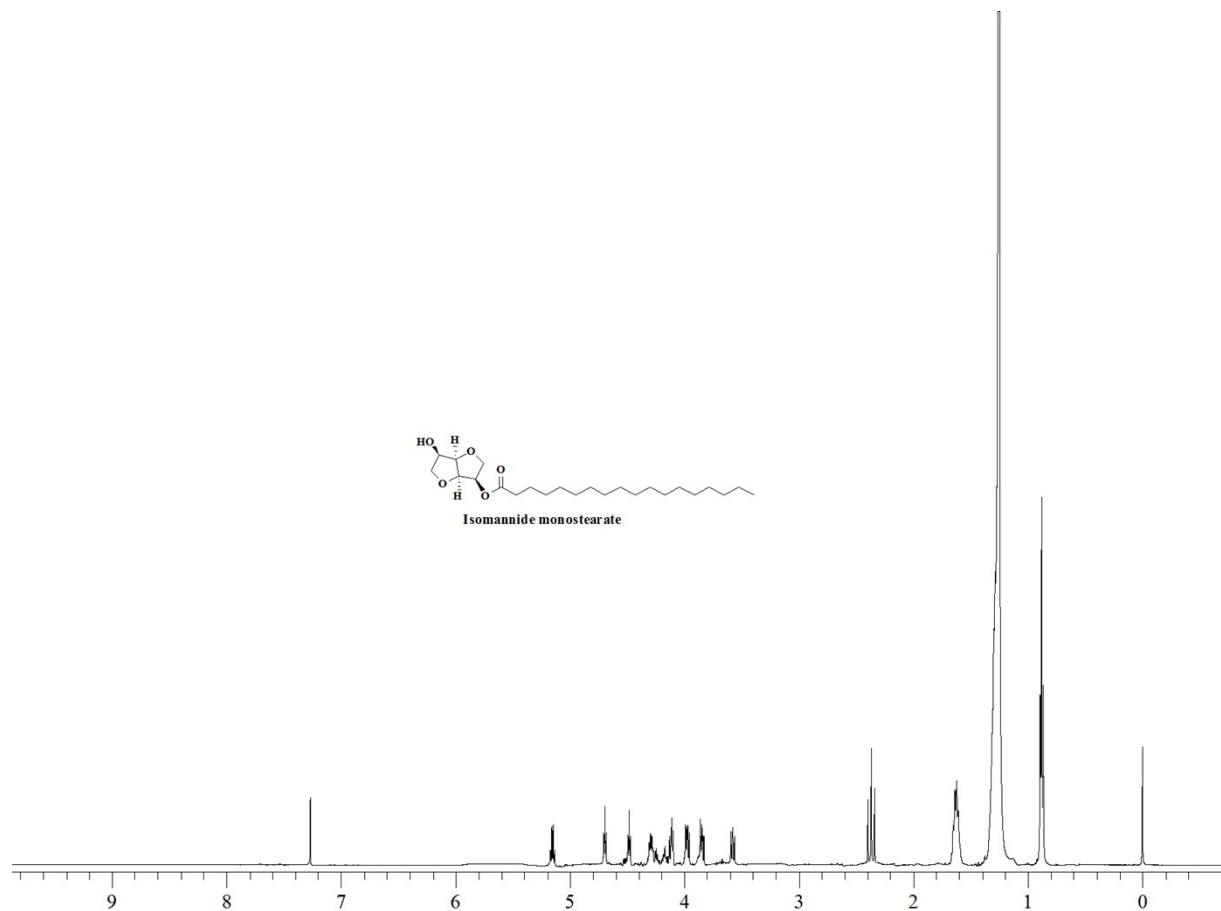
¹H NMR of isomannide monopalmitate (3d)



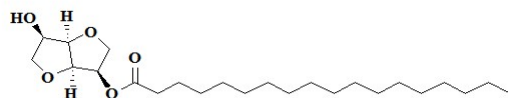
¹³C NMR of isomannide monopalmitate (3d)



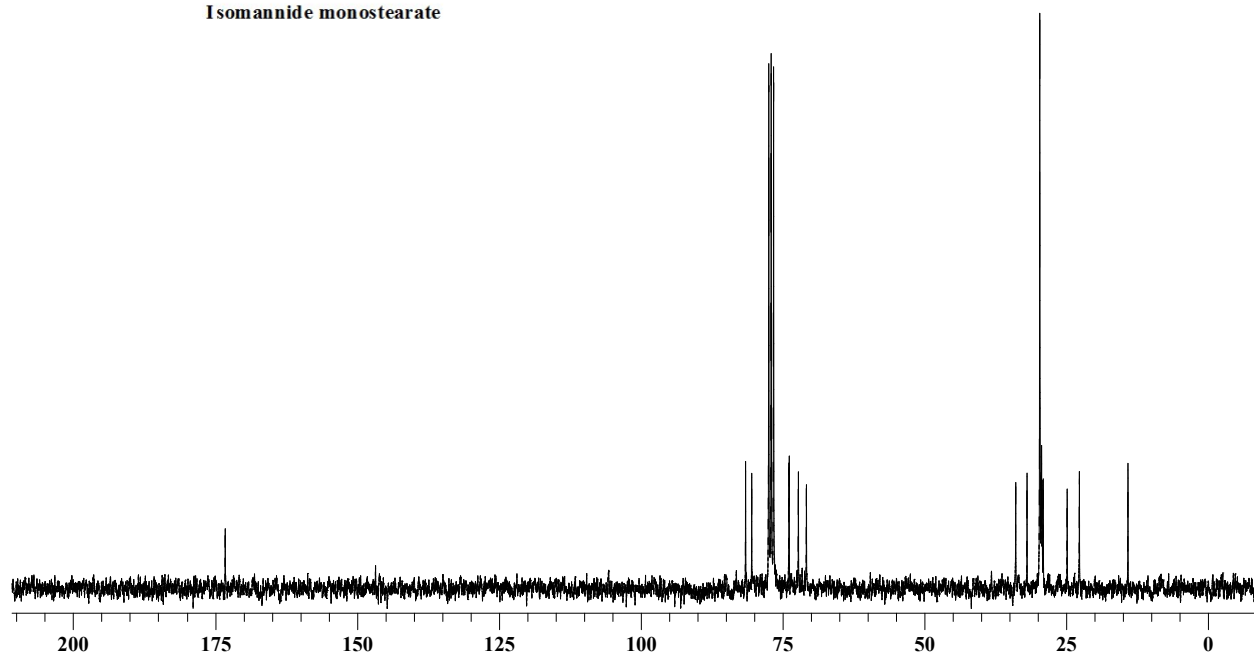
¹H NMR of isomannide monostearate (3e)



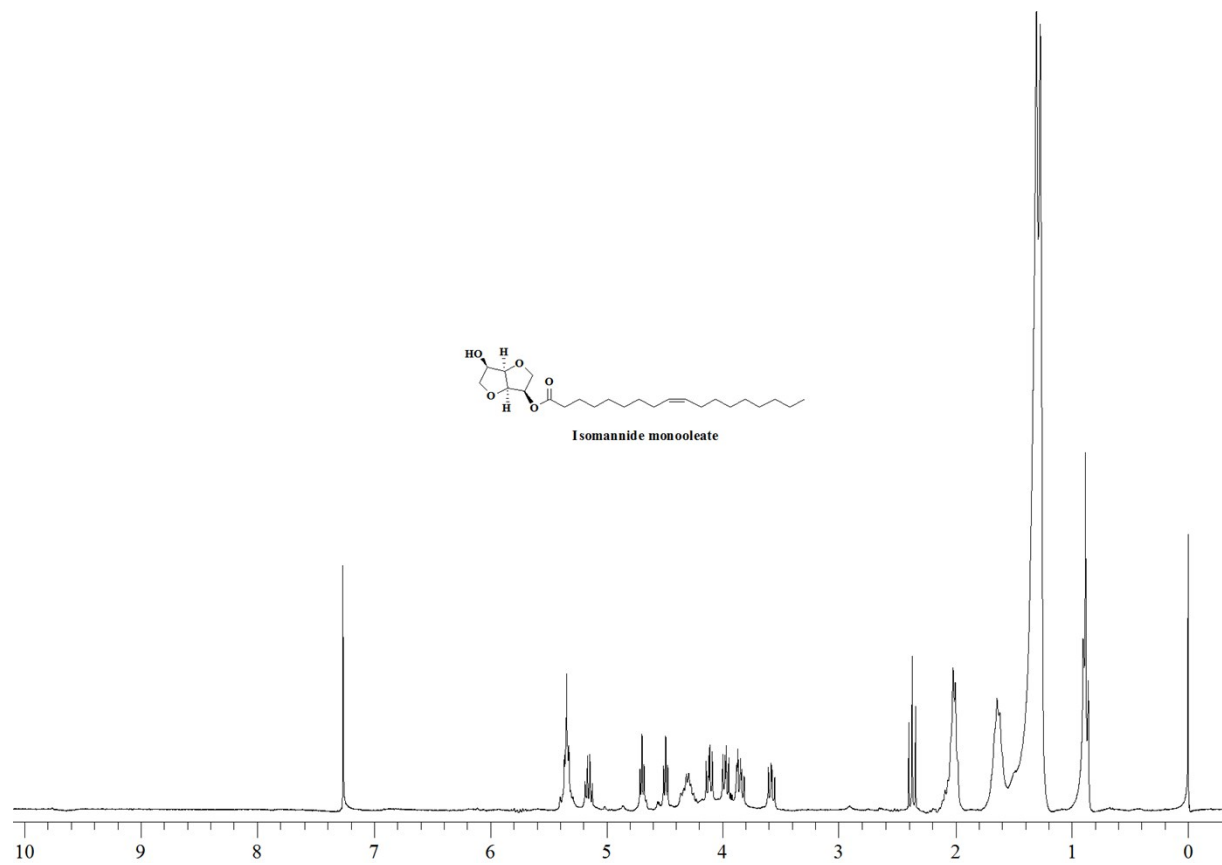
^{13}C NMR of isomannide monostearate (3e)



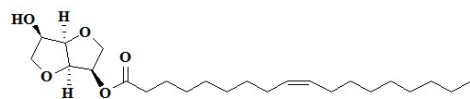
Isomannide monostearate



¹H NMR of isomannide monooleate (3f)



¹³C NMR of isomannide monooleate (3f)



Isomannide monooleate

