

Supporting Information

A Naphthalimide Based Novel “Turn-On” Fluorescence Approach for Uric Acid Determination and Monitoring of Xanthine Oxidase Activity

Jagpreet Singh Sidhu[†], Shilpa Sharma[†], Ashutosh Singh^{††}, Neha Garg^{††}, Navneet Kaur^{§*},
Narinder Singh^{†*}

[†] Department of Chemistry, Indian Institute of Technology Ropar, Rupnagar, Punjab 140001,
India

^{††} School of Basic Sciences, Indian Institute of Technology Mandi, Kamand, Mandi, Himachal
Pradesh, 175005, India

[§]Department of Chemistry, Panjab University Chandigarh, 160014

Corresponding Author: nsingh@iitrpr.ac.in

navneetkaur@pu.ac.in

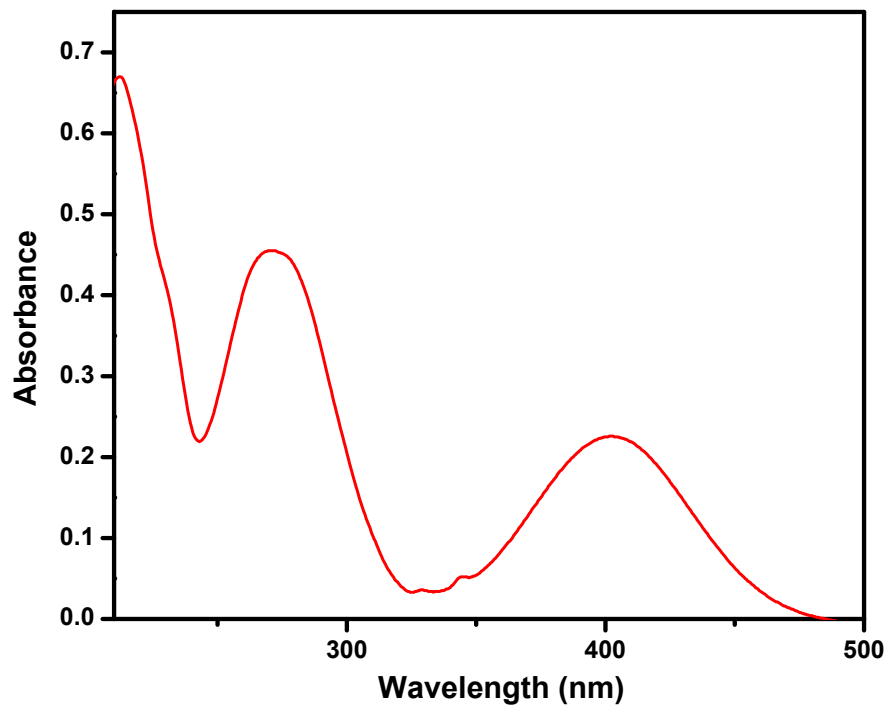


Fig. S1: Uv-Vis absorption spectra of S3.

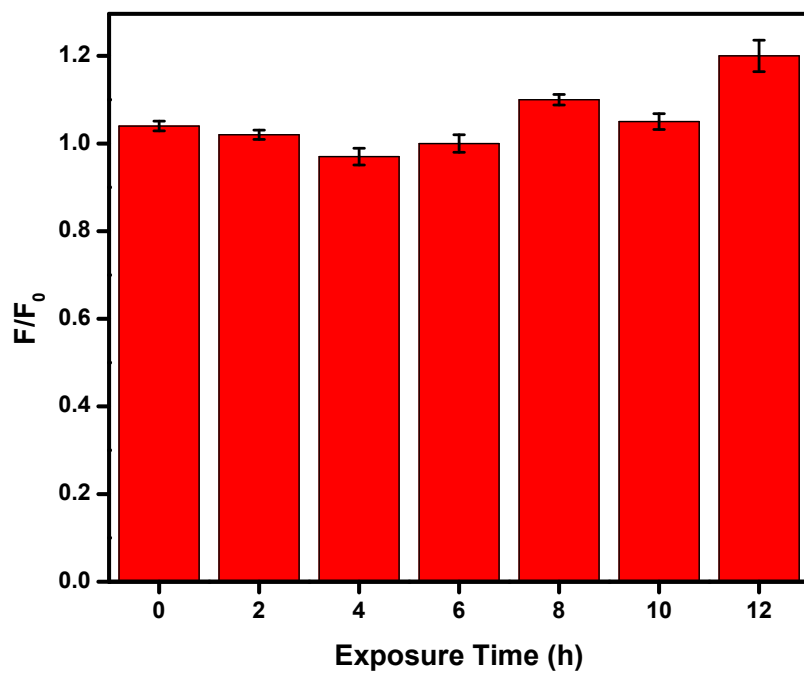


Fig. S2: Fluorescence stability study of S3 after exposing to UV light at different time interval.

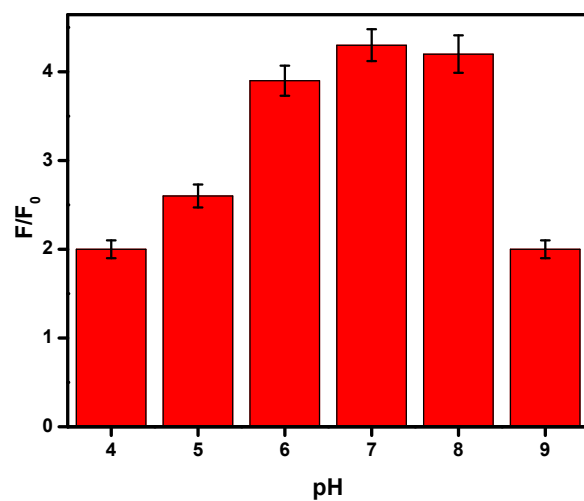


Fig. S3: Effect of pH over fluorescence emission of S3 in the presence of uric acid

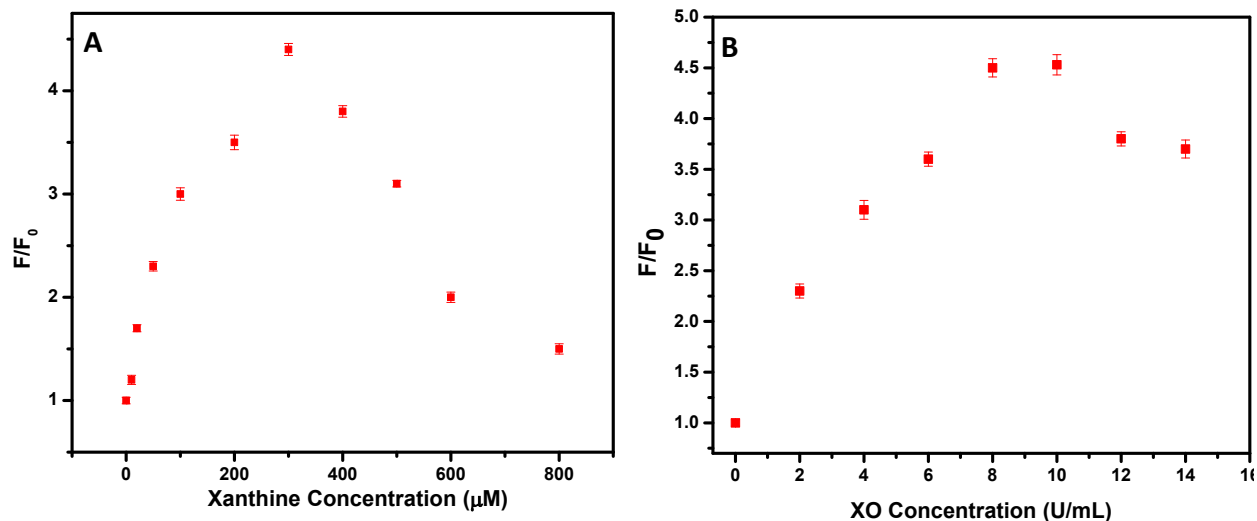


Fig. S4: (A) Change in the fluorescence emission of probe **S3** when different concentration of xanthine was added to probe solution. The concentration of enzyme remained fixed 15 U/mL with incubation time is 25 min. (B) Change in fluorescence emission of probe at different concentration of XO while the concentration of xanthine remained 300 μM constant.

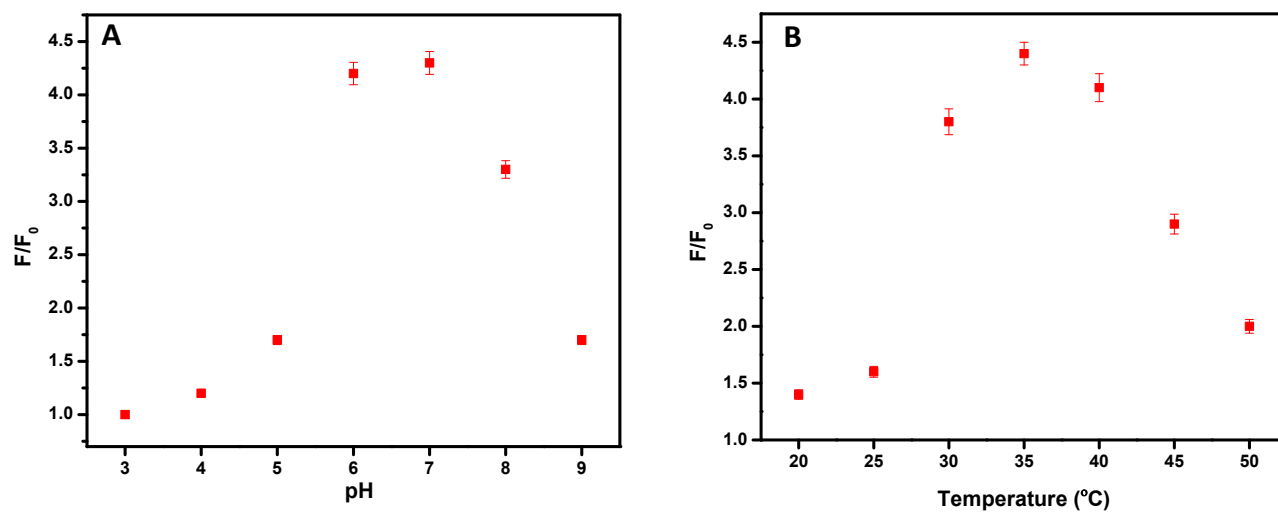


Fig. S5: (A) pH dependent fluorescence emission response of probe **S3** in the presence of xanthine and XO. (B) Temperature dependent fluorescence emission response of probe **S3** in the presence of Xanthine and XO (15 U/mL).

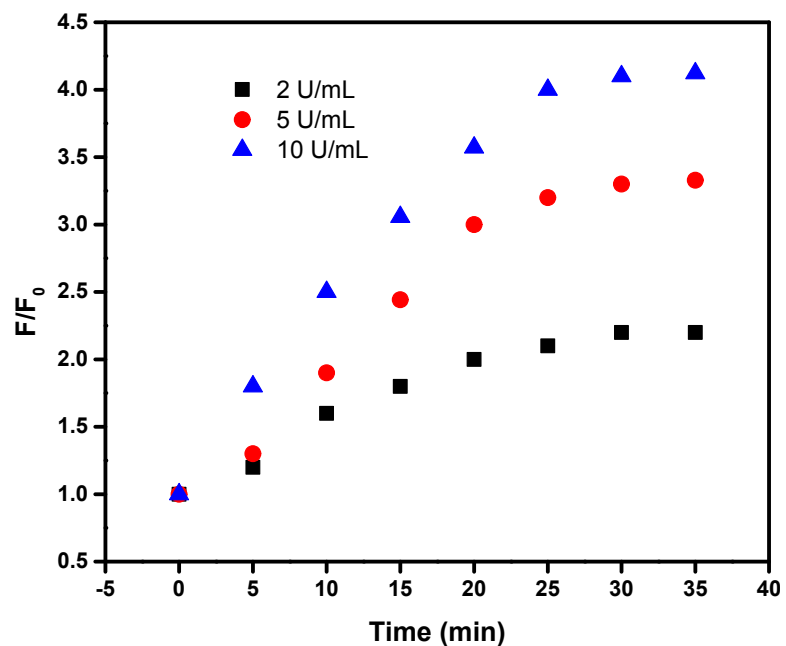


Fig. S6: Time dependent change in fluorescence emission of probe **S3** in response to enzymatic action. Where black, red and blue colour represents the addition of 2, 5 and 10 U/mL of XO.

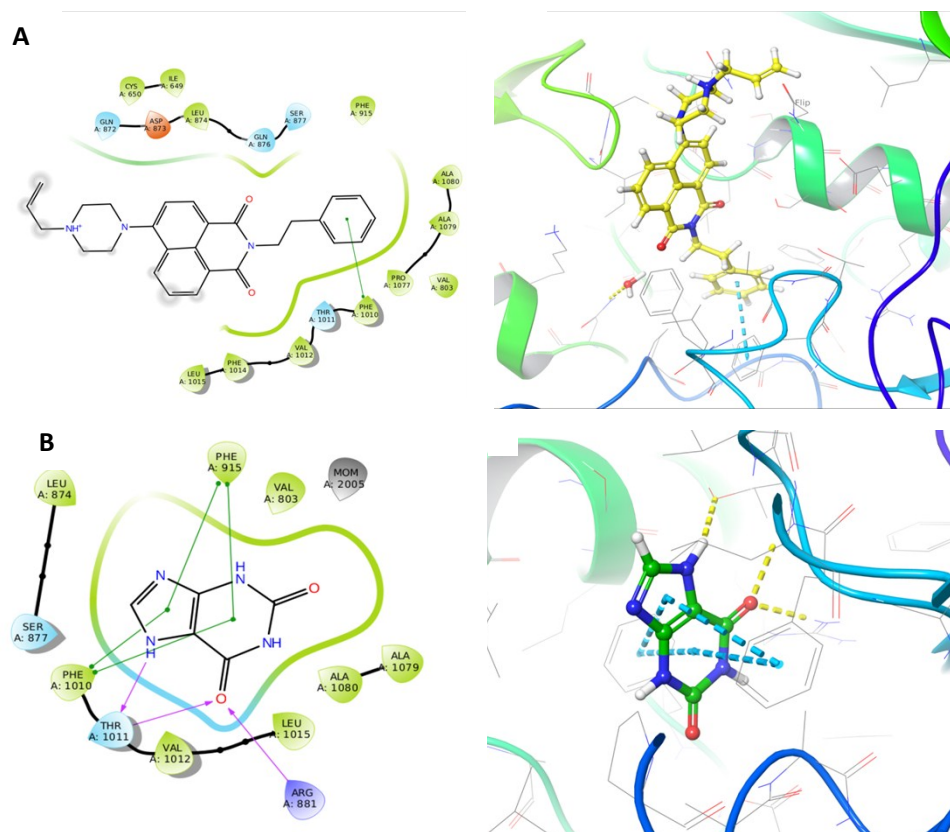


Fig. S7: Molecular docking study of xanthine and probe **S3** (A) Docking pose probe **S3** with XO (B) Docking pose of xanthine with XO.

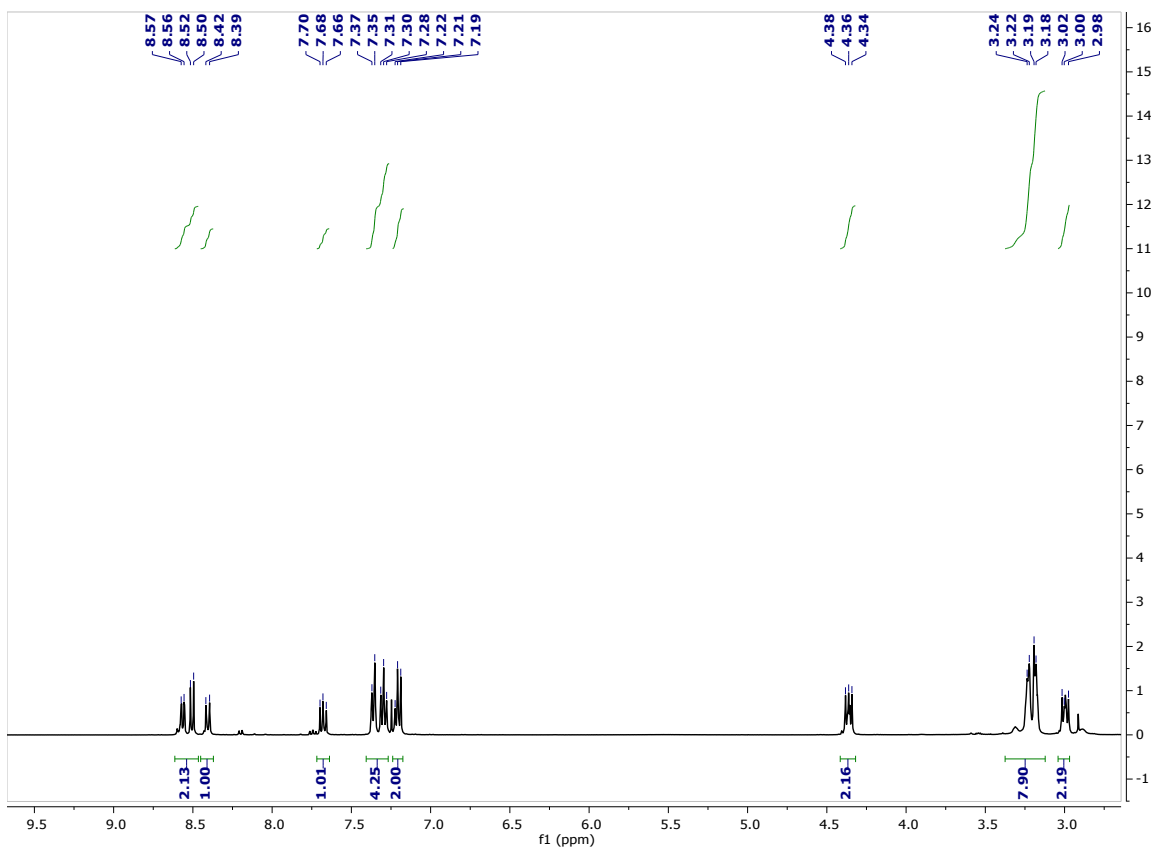


Fig. S8: ¹H NMR of S2

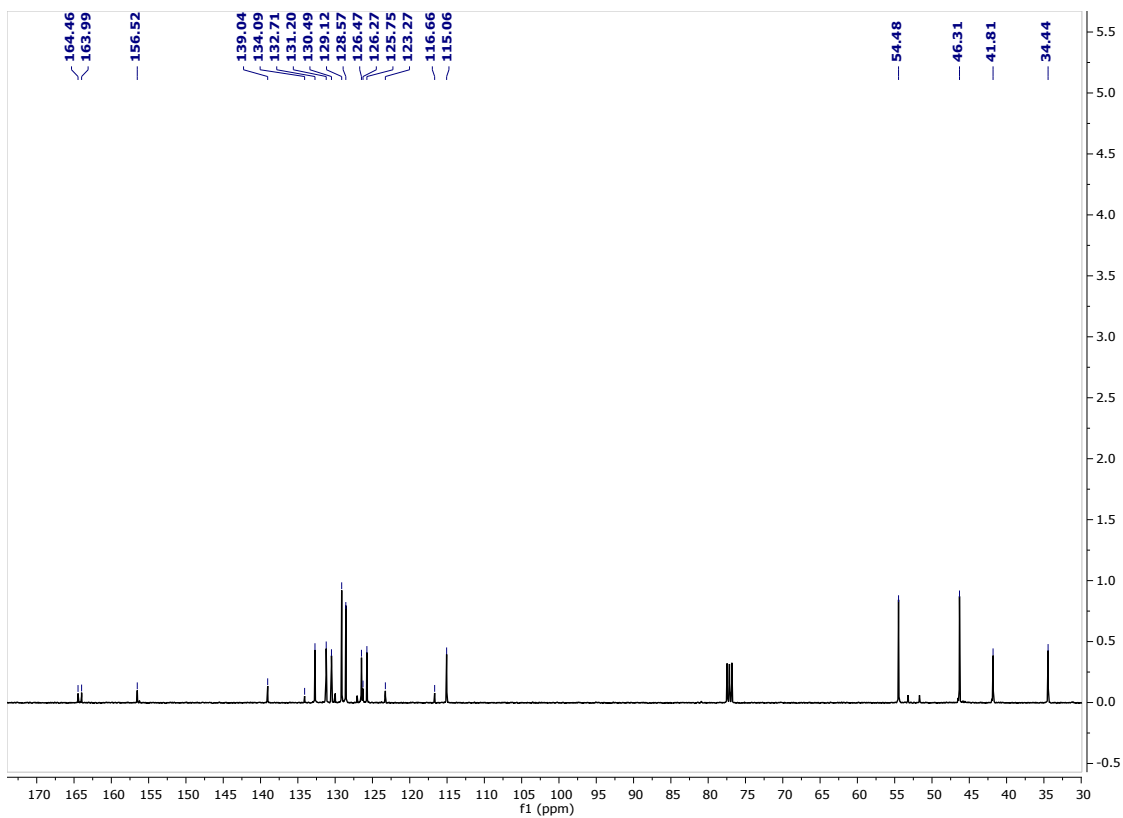


Fig. S9: ^{13}C NMR of S2

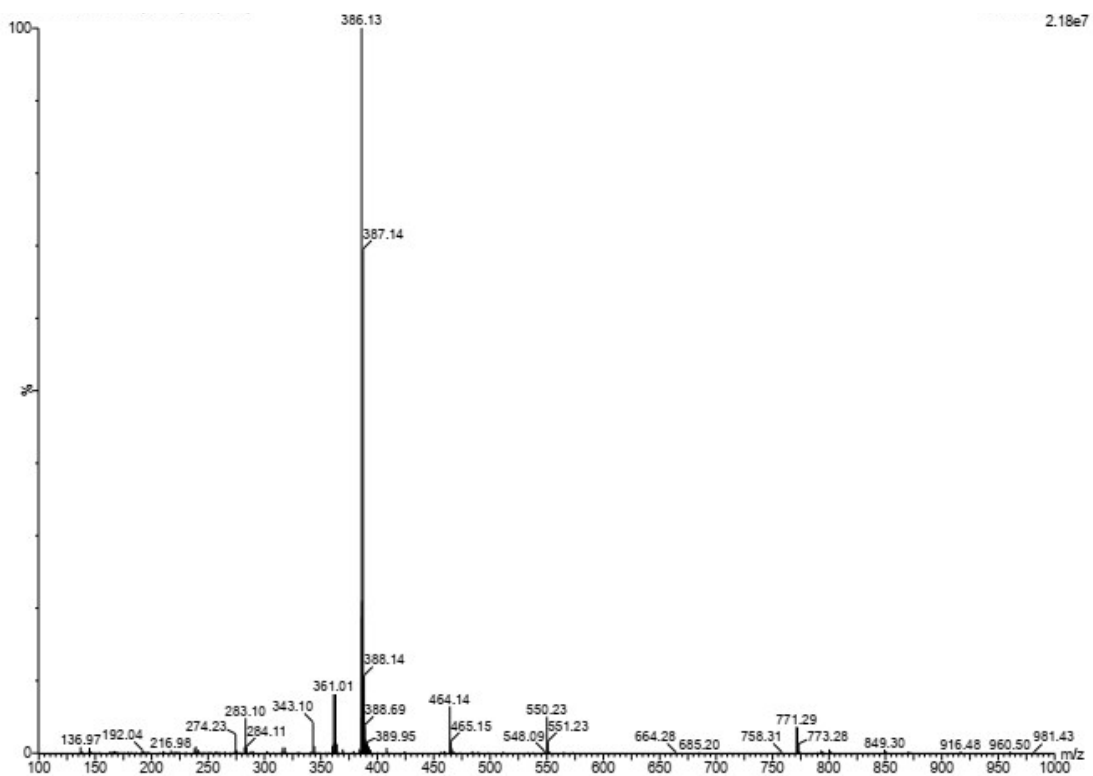


Fig. S10: MS data of S2

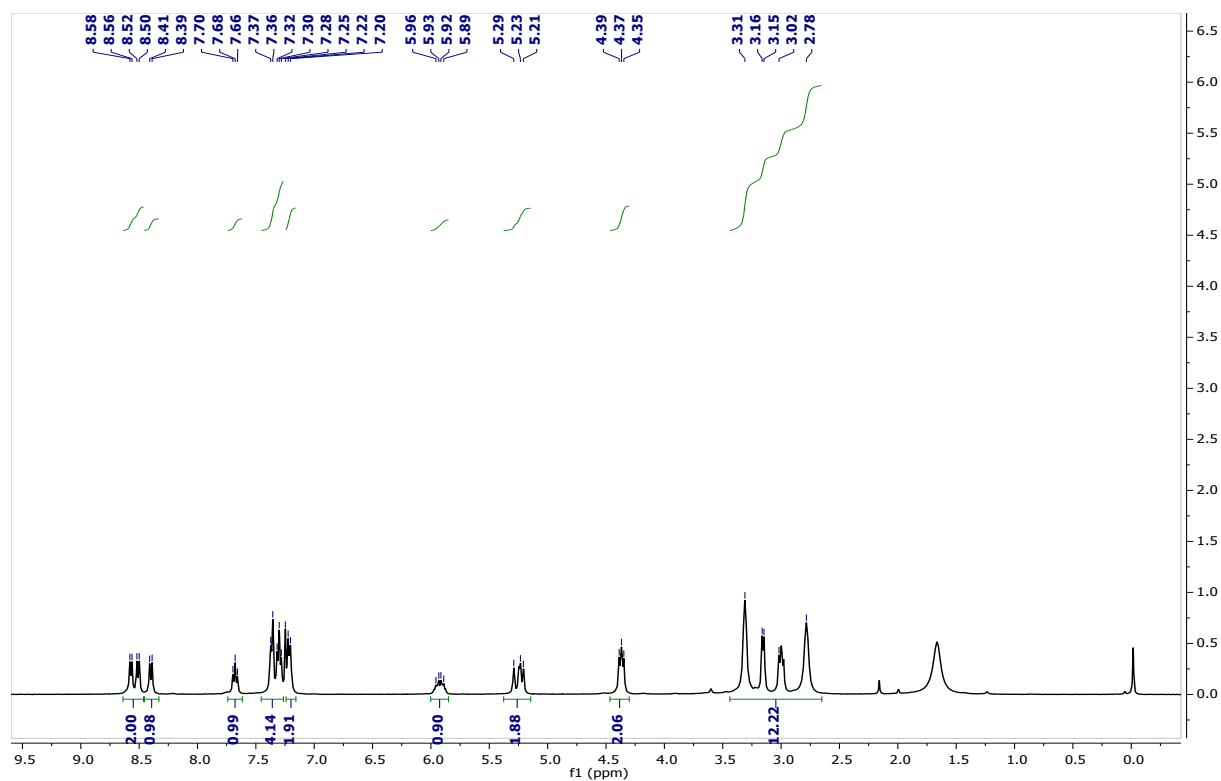


Fig. S11: ^1H NMR of S3

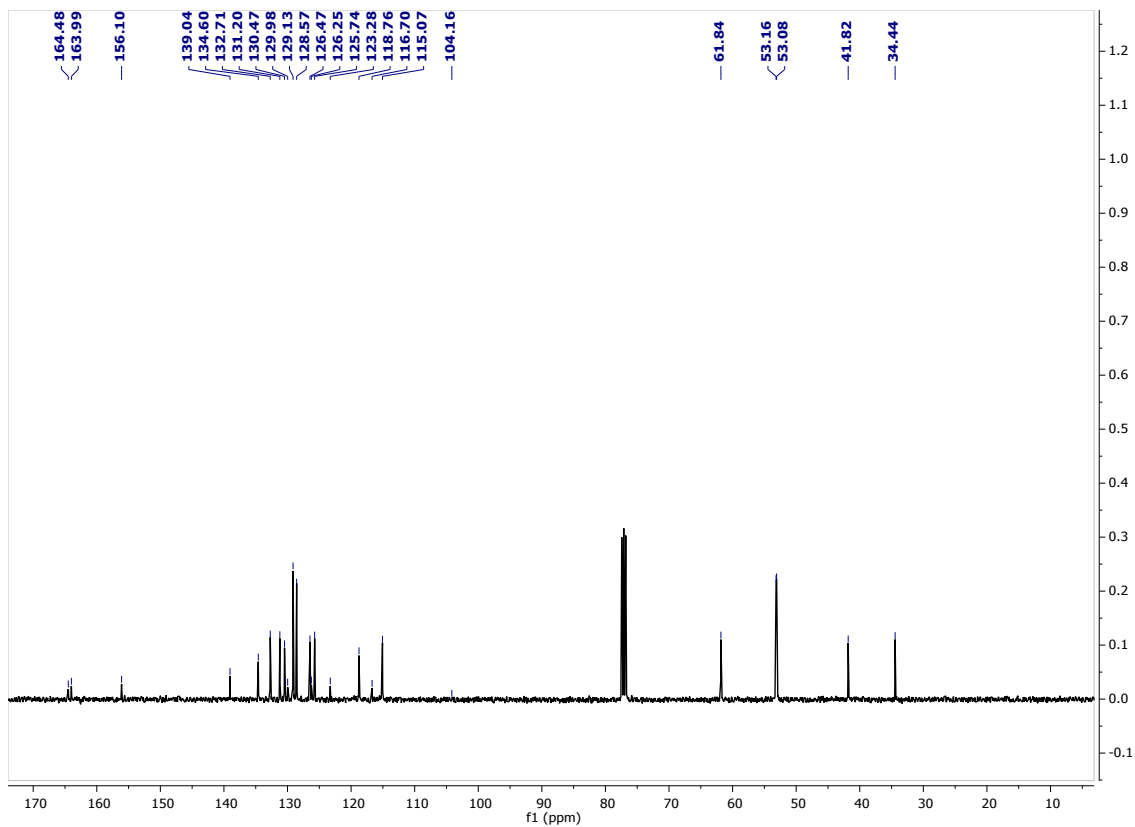
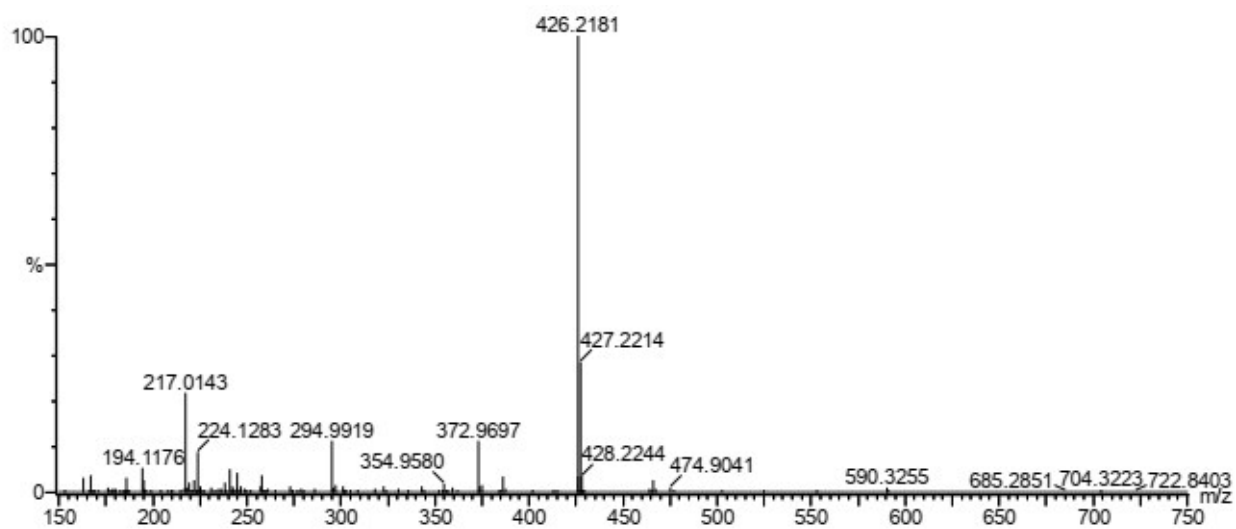


Fig. S12: ^{13}C NMR of S3



Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Norm	Conf(%)	Formula
426.2181	426.2182	-0.1	-0.2	15.5	541.1	n/a	n/a	C ₂₇ H ₂₈ N ₃ O ₂

Minimum: -1.5
Maximum: 5.0 10.0 50.0

Fig. S13: HRMS data of S3