

Electronic Supporting Information

**Aromatic Identity, Electronic Substitution, and Sequence in
Amphiphilic Tripeptide Self-Assembly**

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Contents

1. Chemical Characterisation of Tripeptides (^1H NMR, Mass Spec, and HPLC)
2. Additional Supporting Data
3. References

1. Chemical Characterisation of Tripeptides

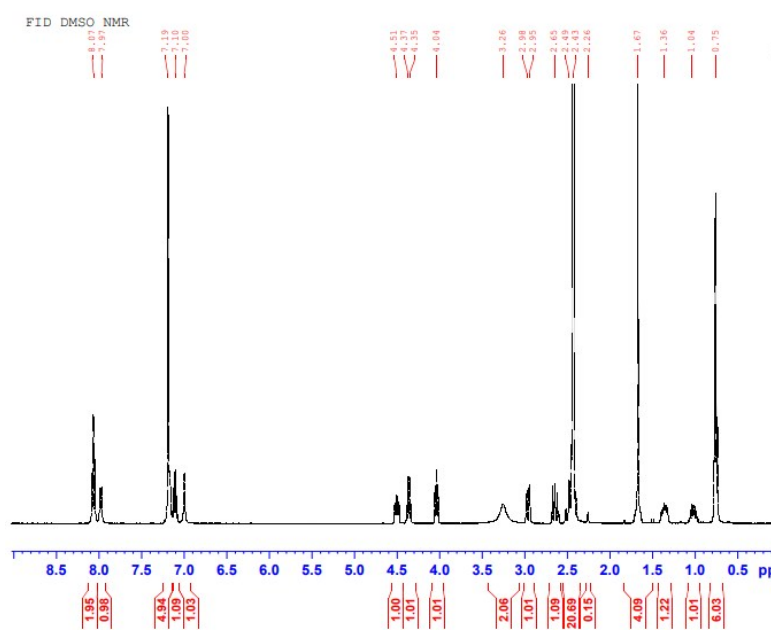


Figure S1: ¹H NMR spectrum of Ac-FID-NH₂

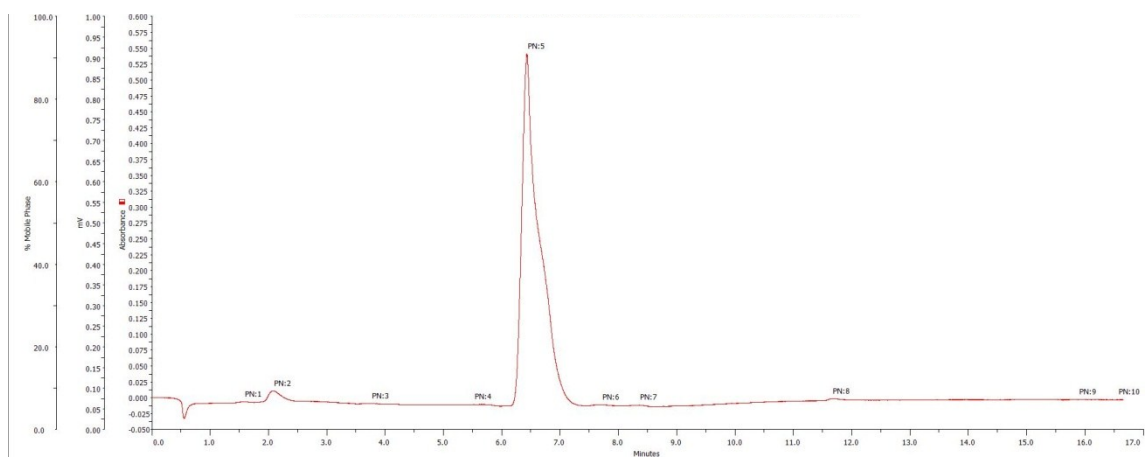


Figure S2: Analytical HPLC chromatogram of Ac-FID-NH₂

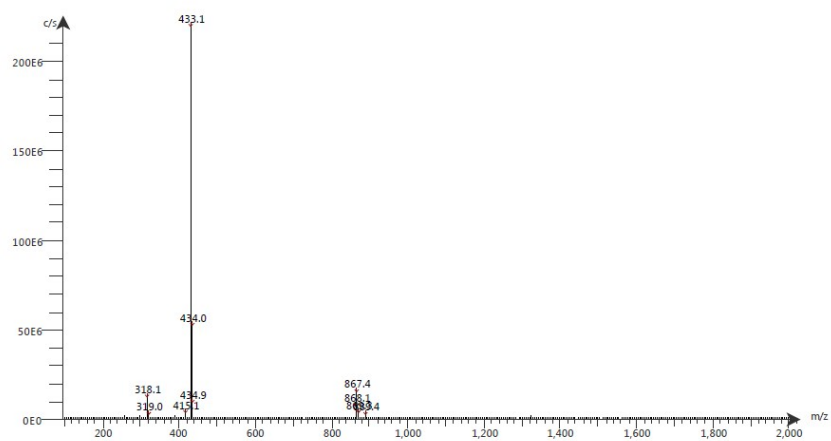


Figure S3: Mass spectroscopy of Ac-FID-NH₂

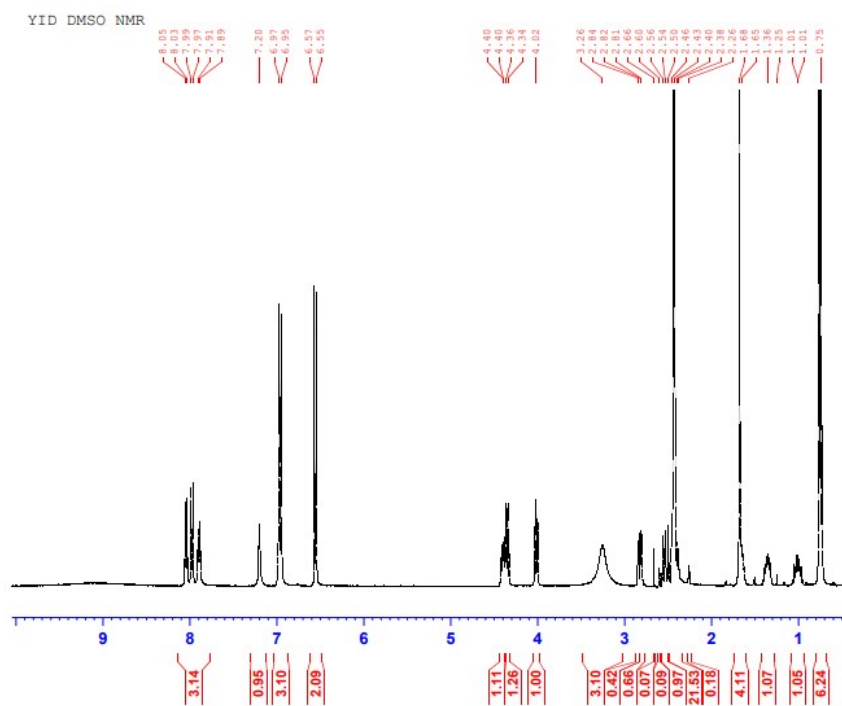


Figure S4: ¹H NMR spectrum of Ac-YID-NH₂

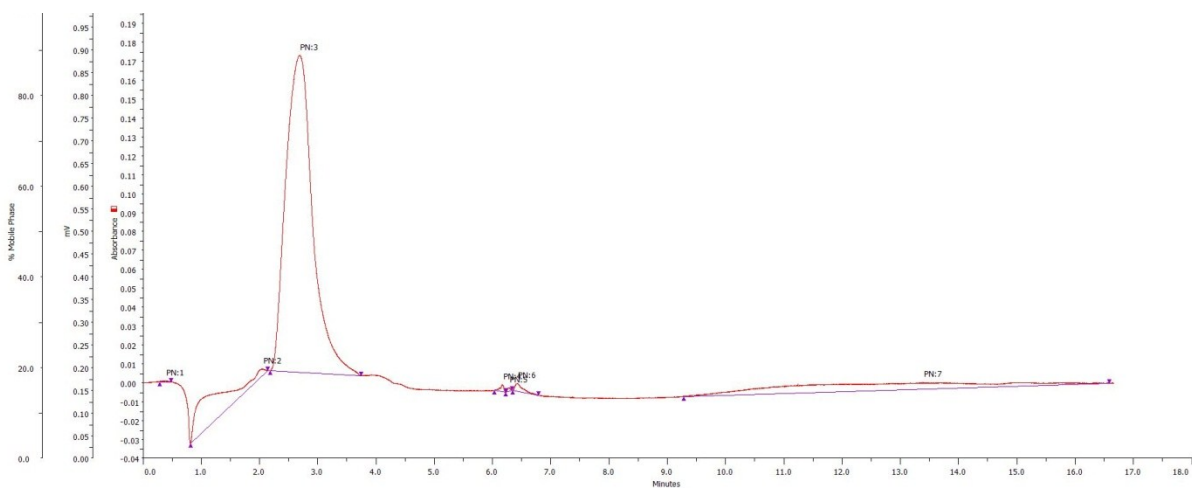


Figure S5: Analytical HPLC chromatogram of Ac-YID-NH₂

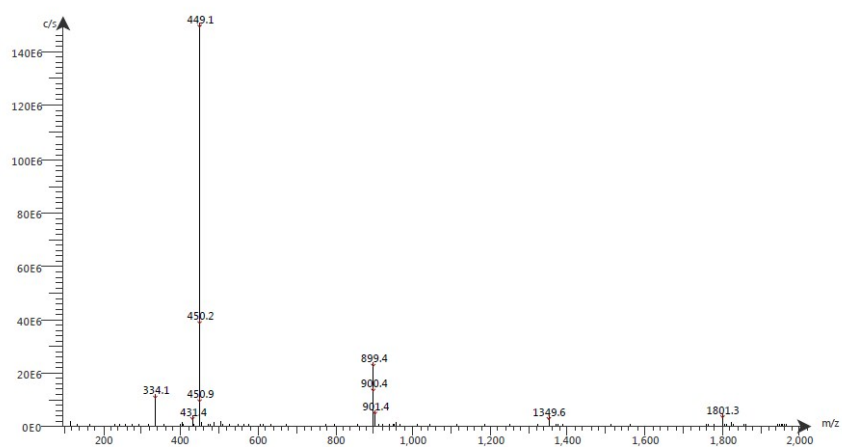


Figure S6: Mass spectroscopy of Ac-YID-NH₂

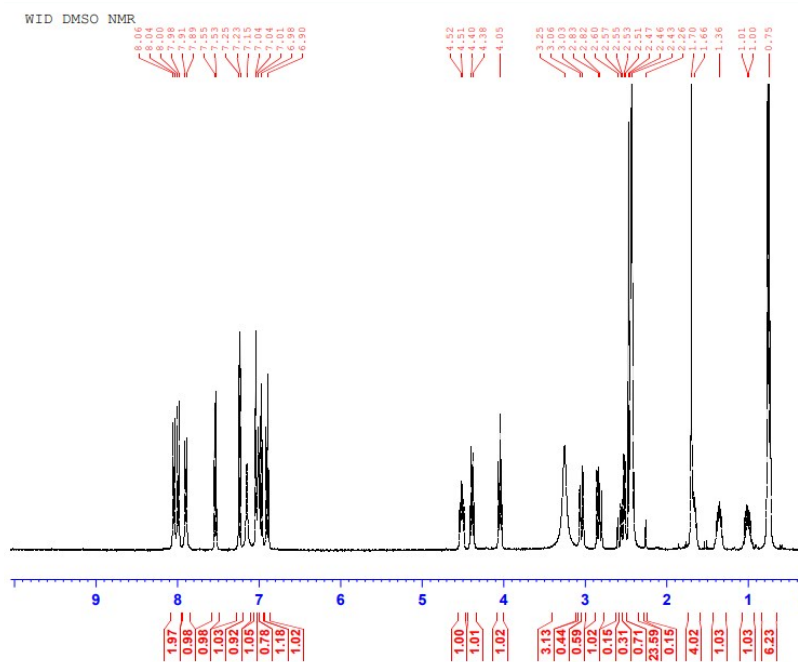


Figure S7: ^1H NMR spectrum of Ac-WID-NH₂

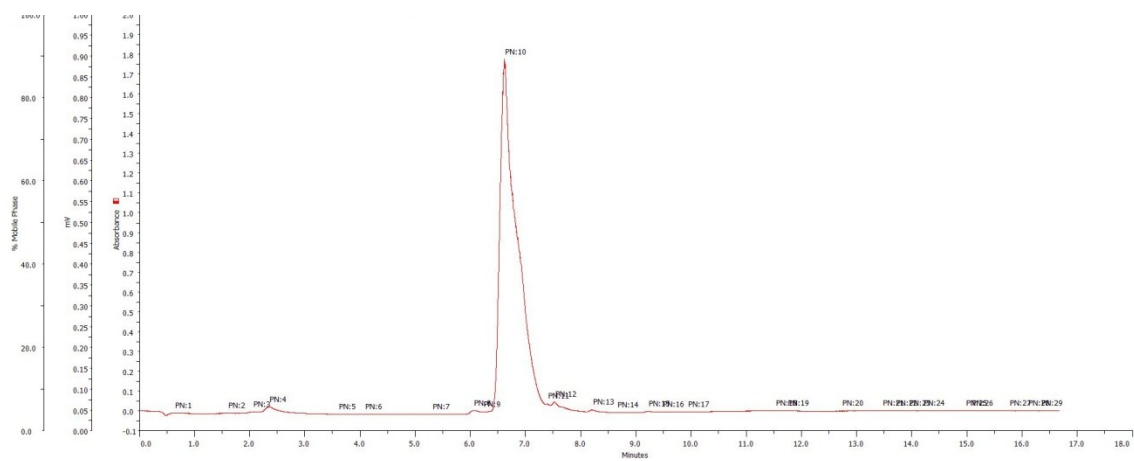


Figure S8: Analytical HPLC chromatogram of Ac-WID-NH₂

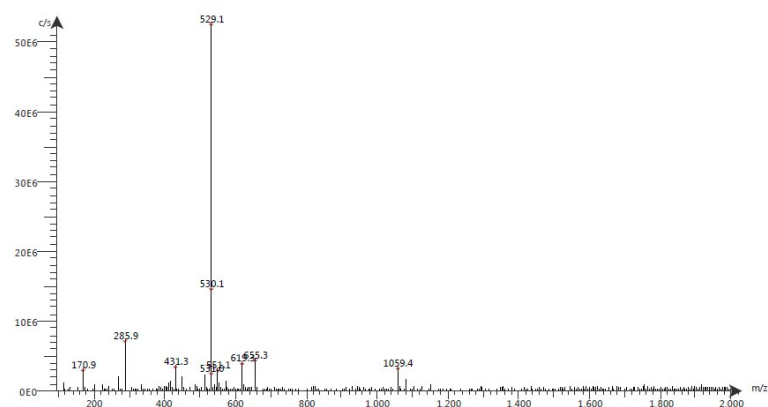


Figure S9: Mass spectroscopy of Ac-WID-NH₂

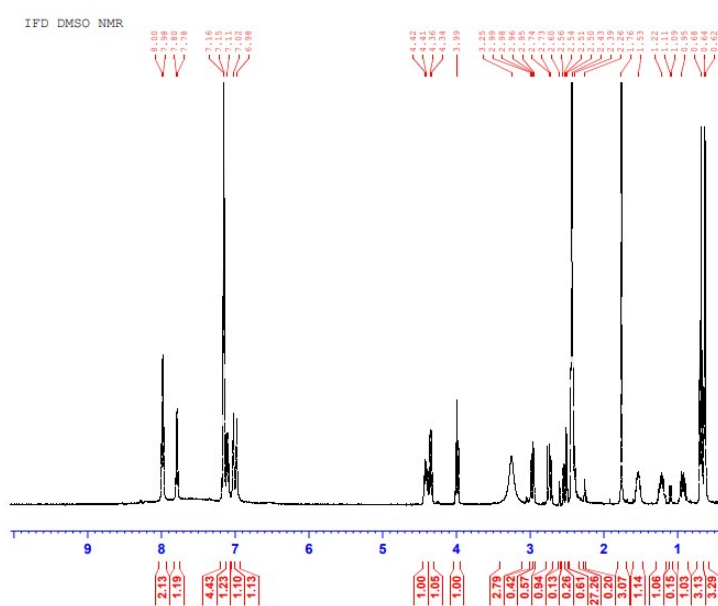


Figure S10: ¹H NMR spectrum of Ac-IFD-NH₂

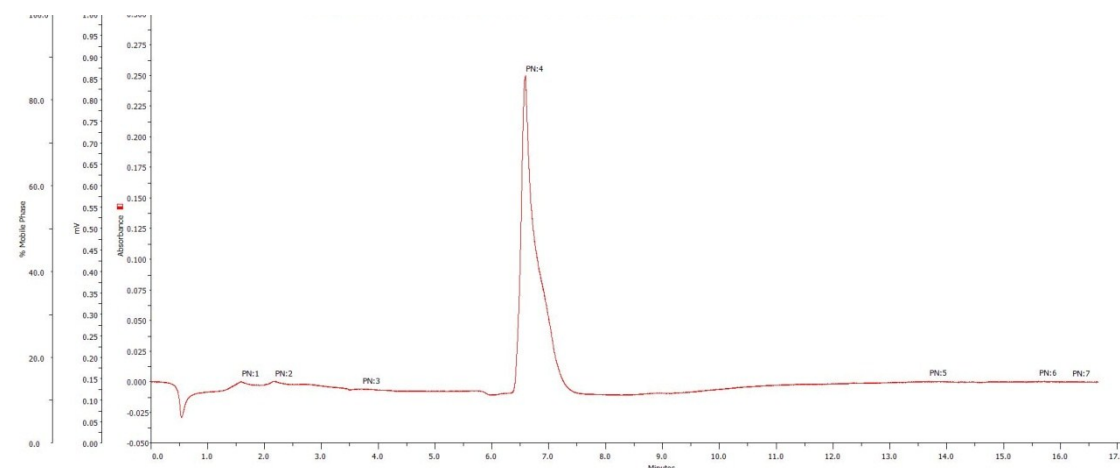


Figure S11: Analytical HPLC chromatogram of Ac-IFD-NH₂

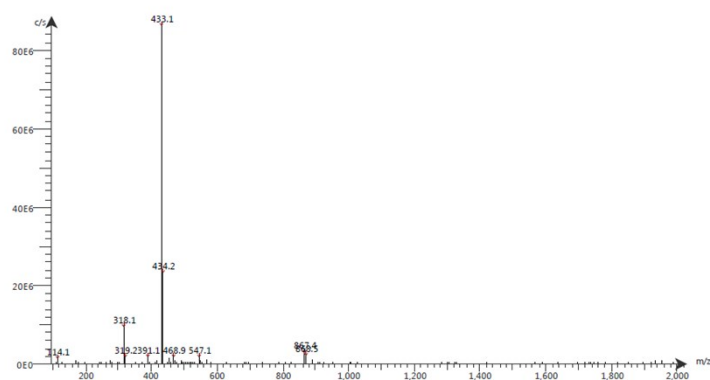


Figure S12: Mass spectroscopy of Ac-IFD-NH₂

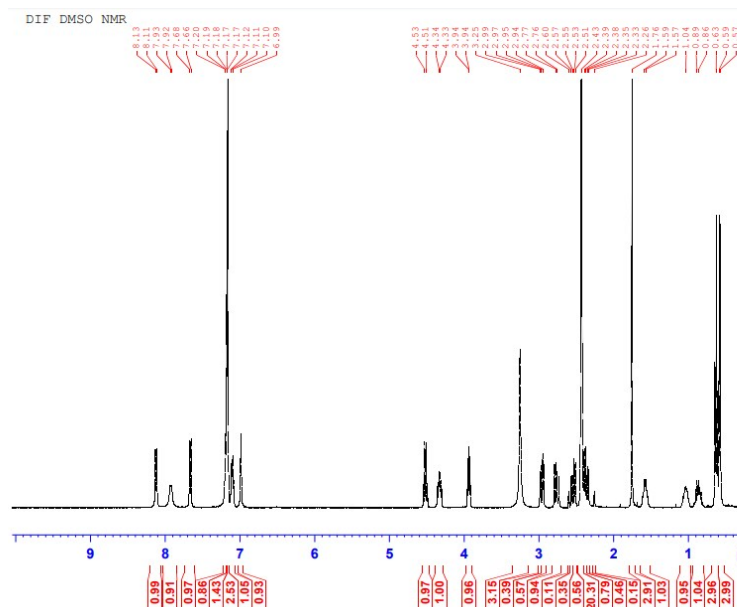


Figure S13: ^1H NMR spectrum of Ac-DIF-NH₂

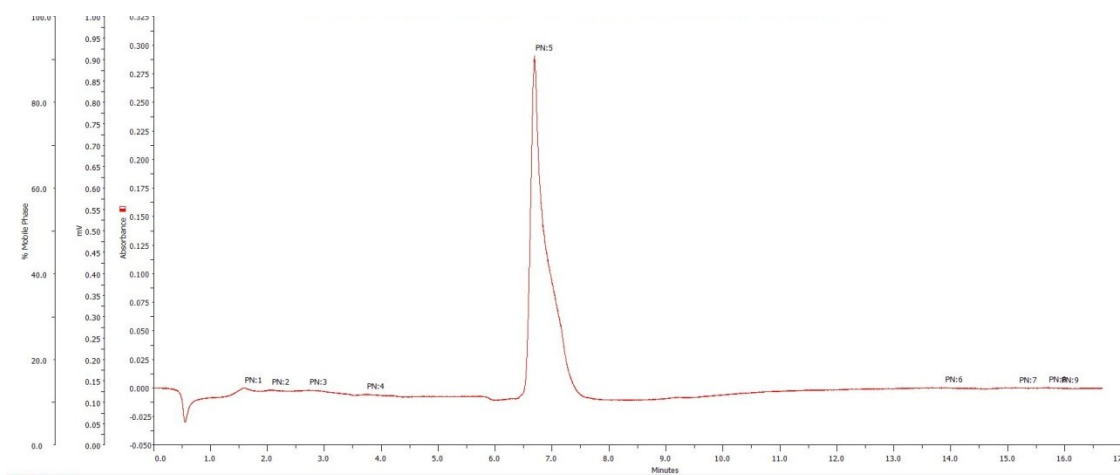


Figure S14: Analytical HPLC of Ac-DIF-NH₂

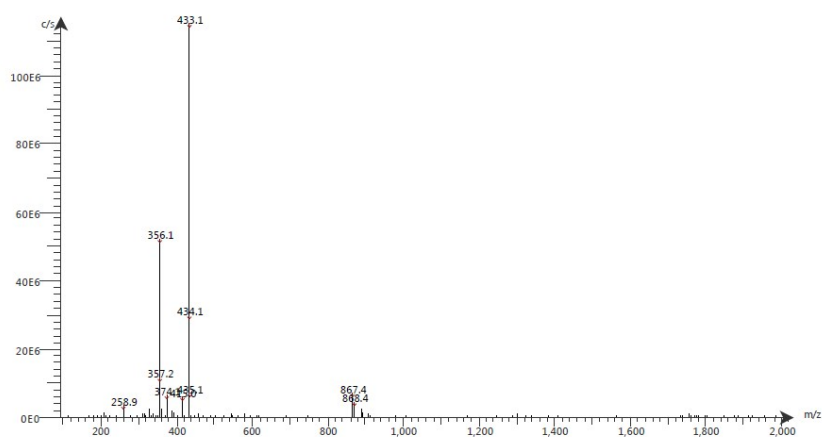


Figure S15: Mass spectroscopy of Ac-DIF-NH₂

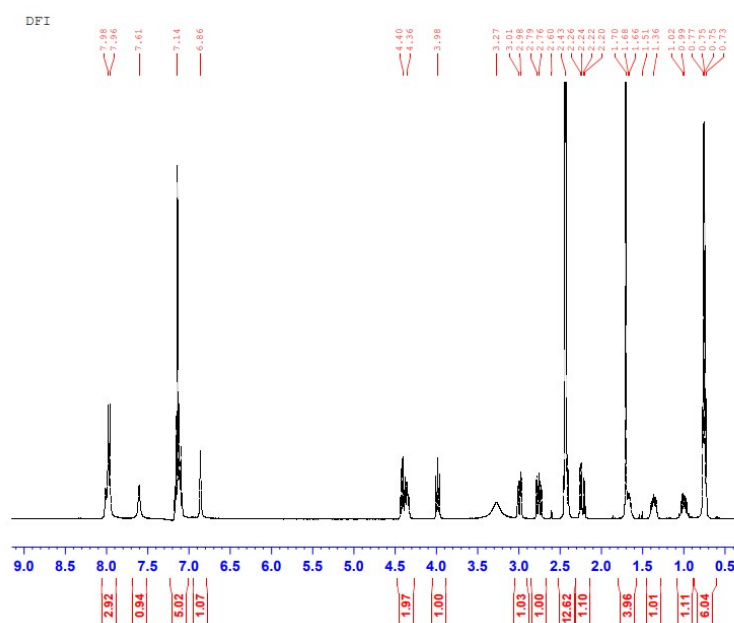


Figure S16: ¹H NMR spectroscopy of Ac-DFI-NH₂

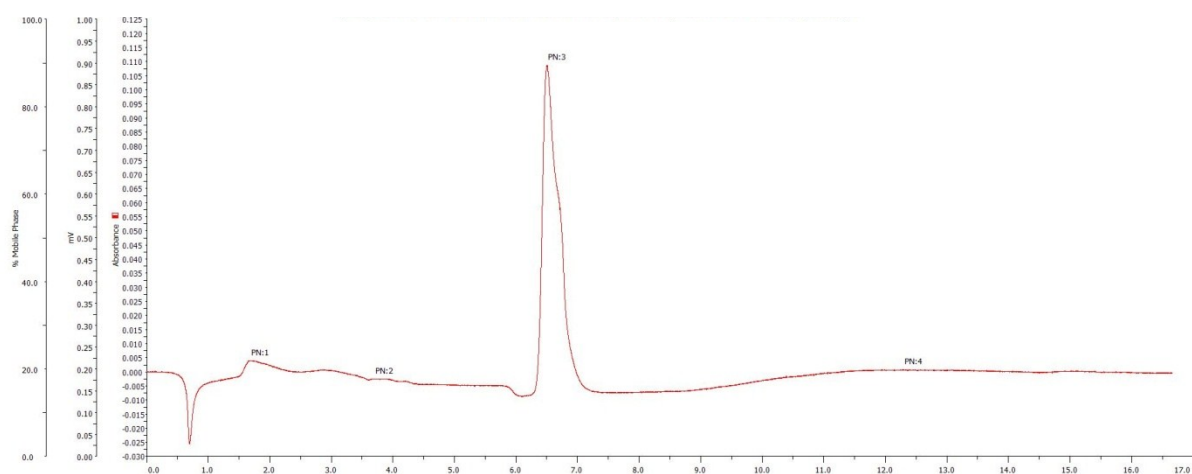


Figure S17: Analytical HPLC of Ac-DFI-NH₂

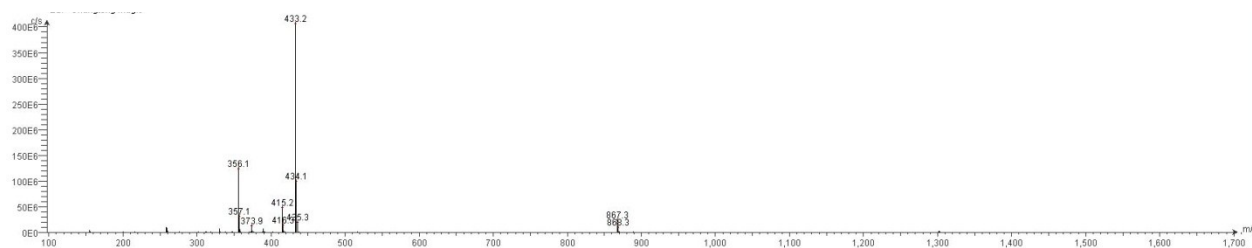


Figure S18: Mass spectroscopy of Ac-DFI-NH₂

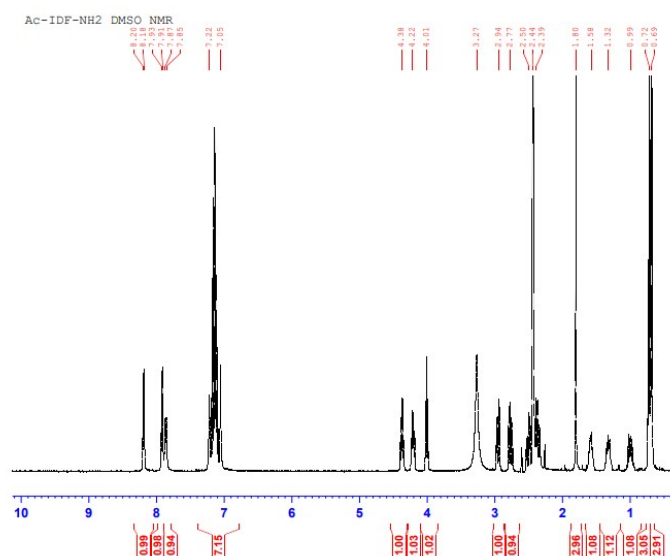


Figure S19: ¹H NMR spectrum of Ac-IDF-NH₂

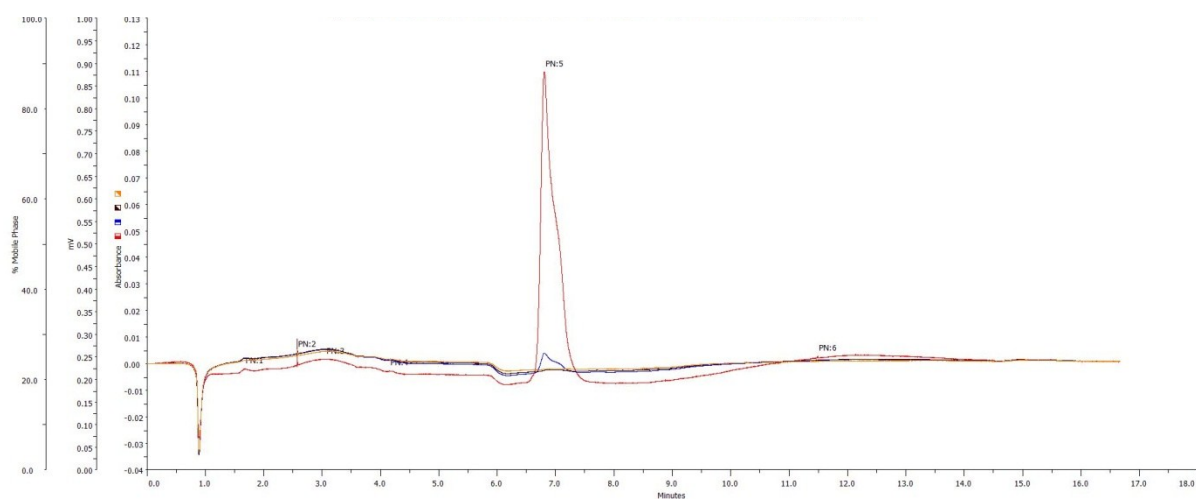


Figure S20: Analytical HPLC of Ac-IDF-NH₂

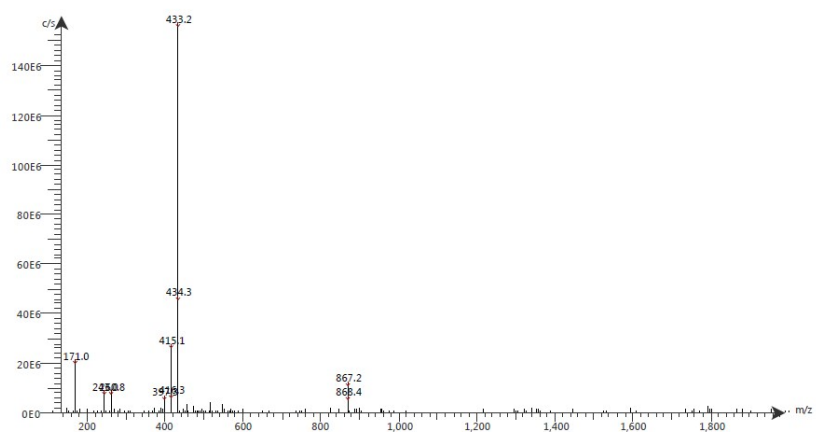


Figure S21: Mass spectroscopy of Ac-IDF-NH₂

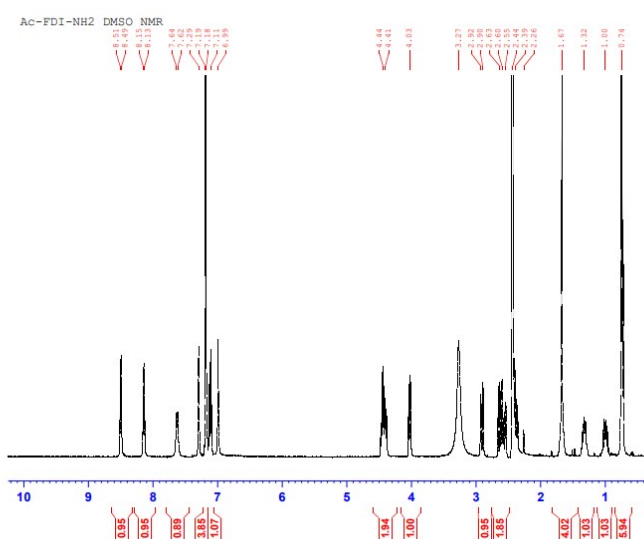


Figure S22: ¹H NMR spectrum of Ac-FDI-NH₂

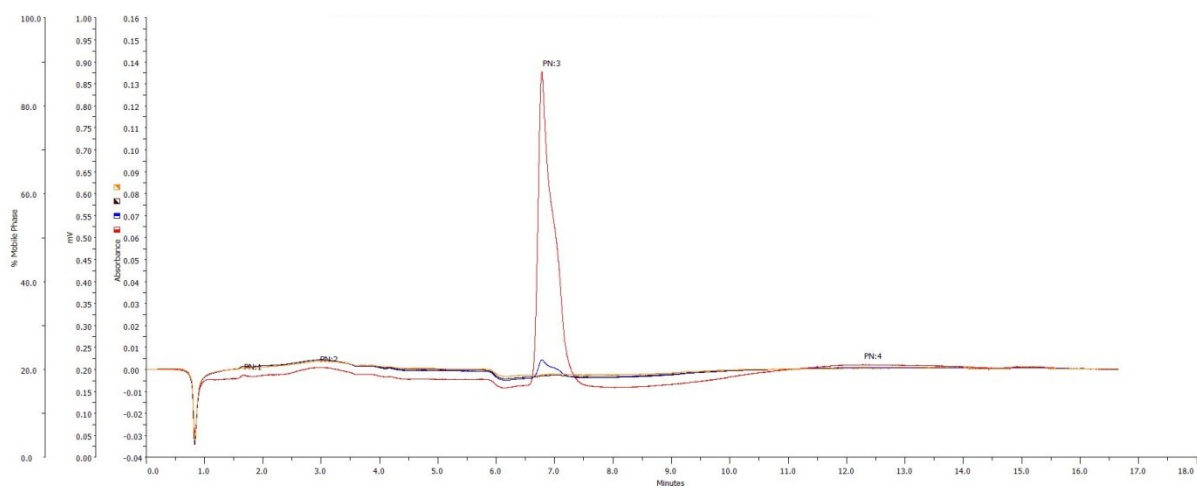


Figure S23: Analytical HPLC of Ac-FDI-NH₂

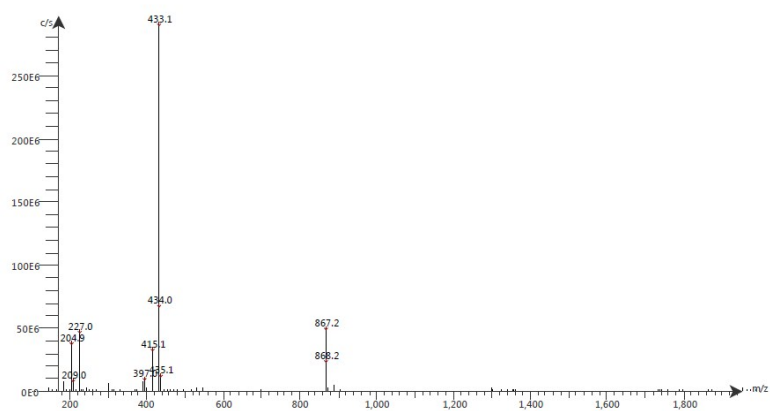


Figure S24: Mass spectroscopy of Ac-FDI-NH₂

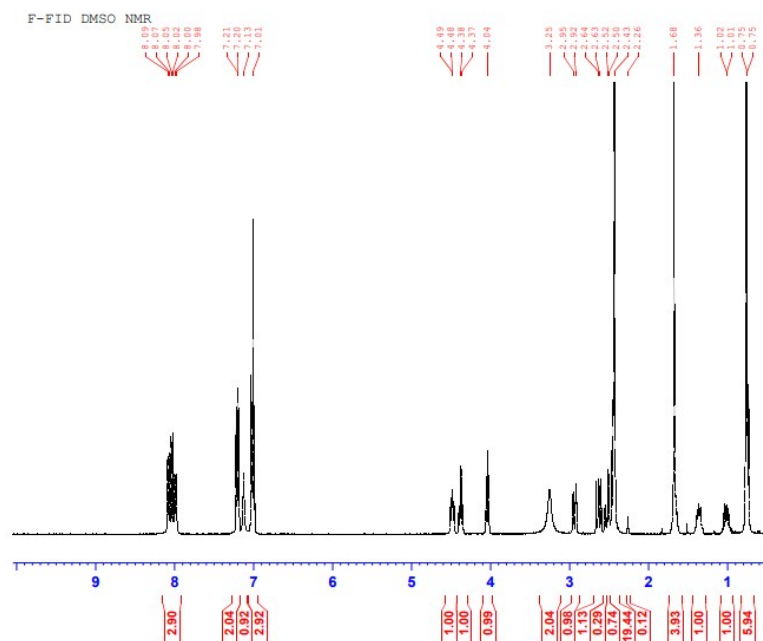


Figure S25: ^1H NMR spectrum of $\text{Ac-F}_\text{FID}\text{-NH}_2$

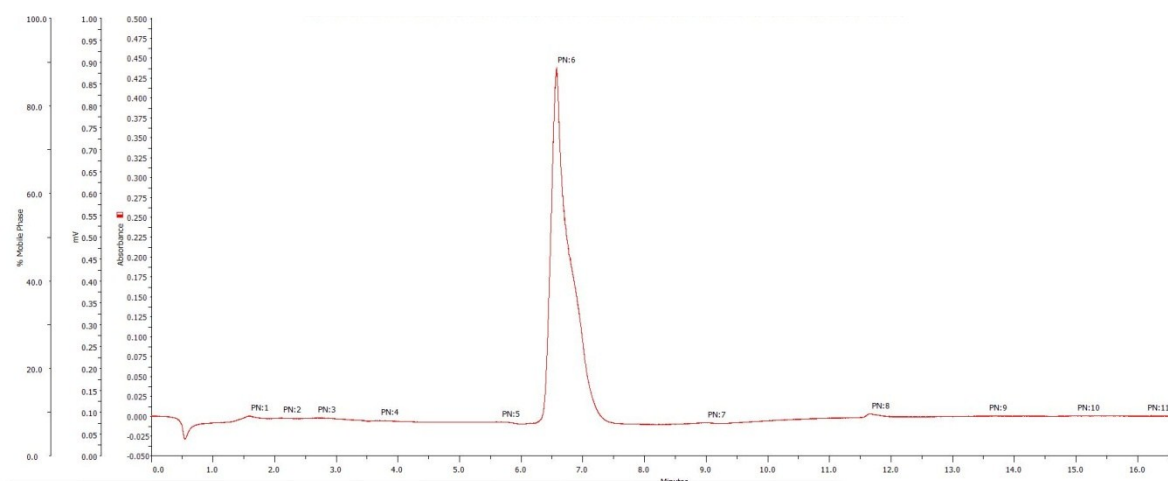


Figure S26: Analytical HPLC of $\text{Ac-F}_\text{FID}\text{-NH}_2$

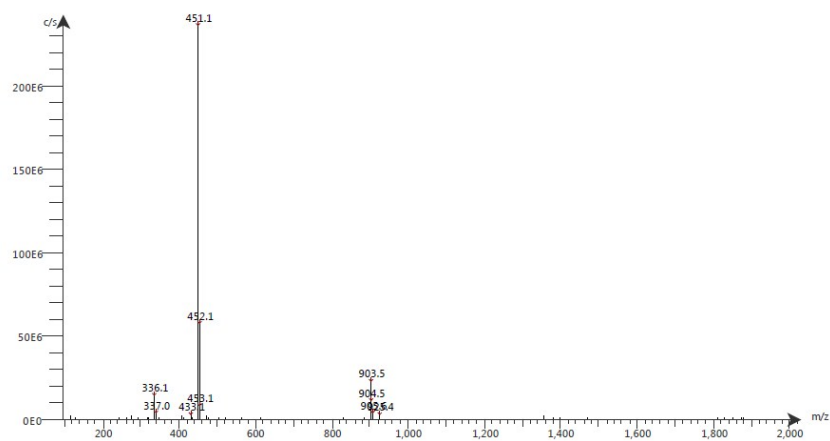


Figure S27: Mass spectroscopy of Ac-F₁ID-NH₂

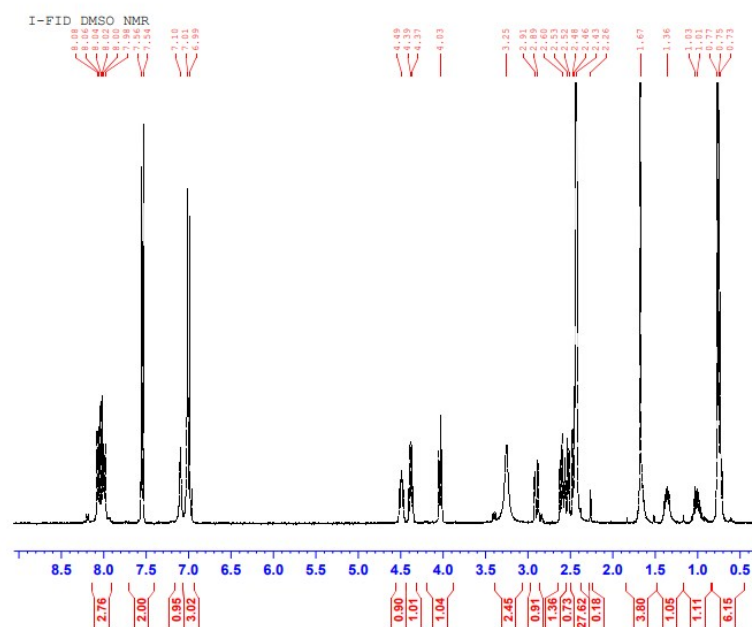


Figure S28: ¹H NMR spectrum of Ac-F₁ID-NH₂

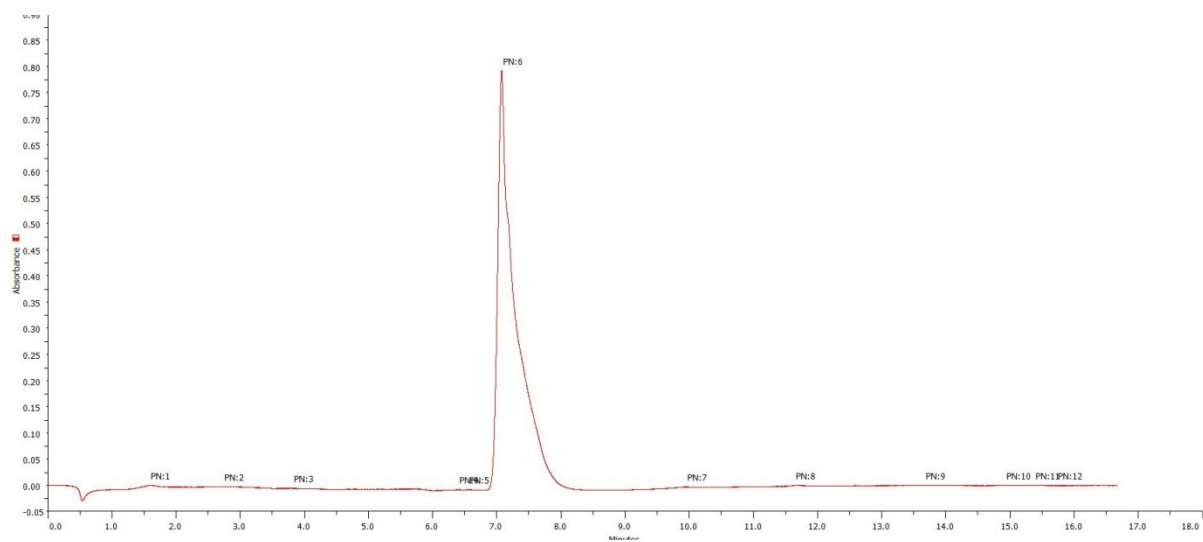


Figure S29: Analytical HPLC of Ac-F₁ID-NH₂

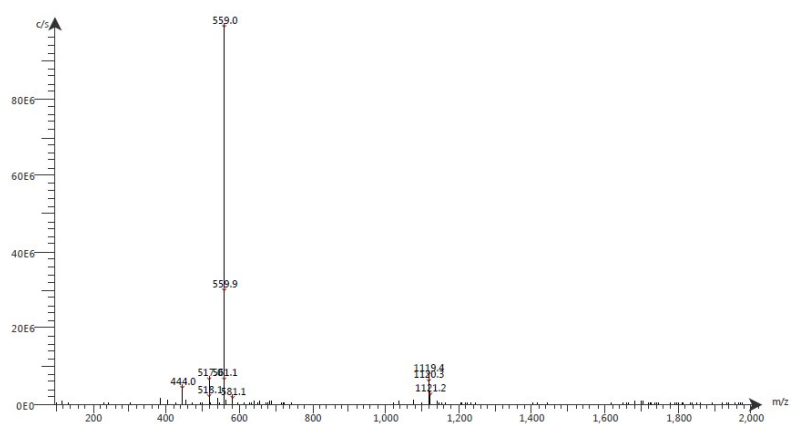


Figure S30: Mass spectroscopy of Ac-F₁ID-NH₂

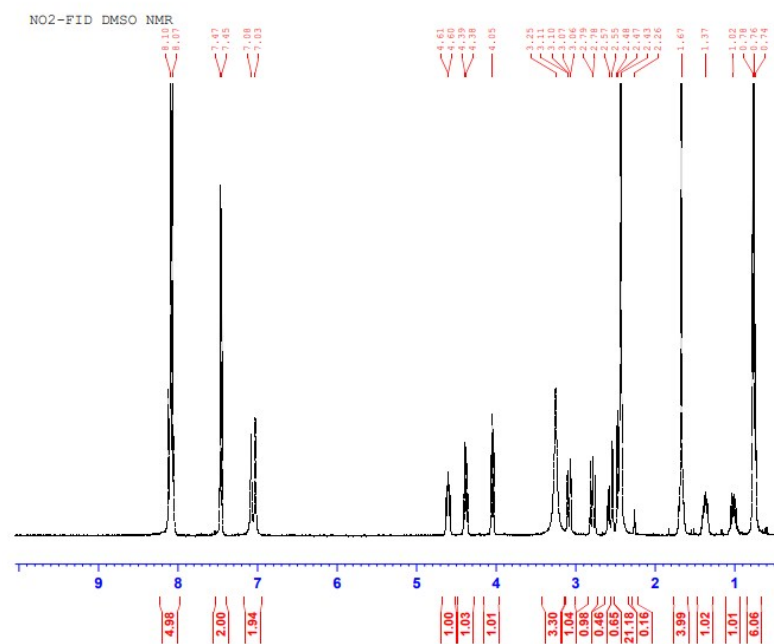


Figure S31: ¹H NMR spectrum of Ac-F_{NO₂}ID-NH₂

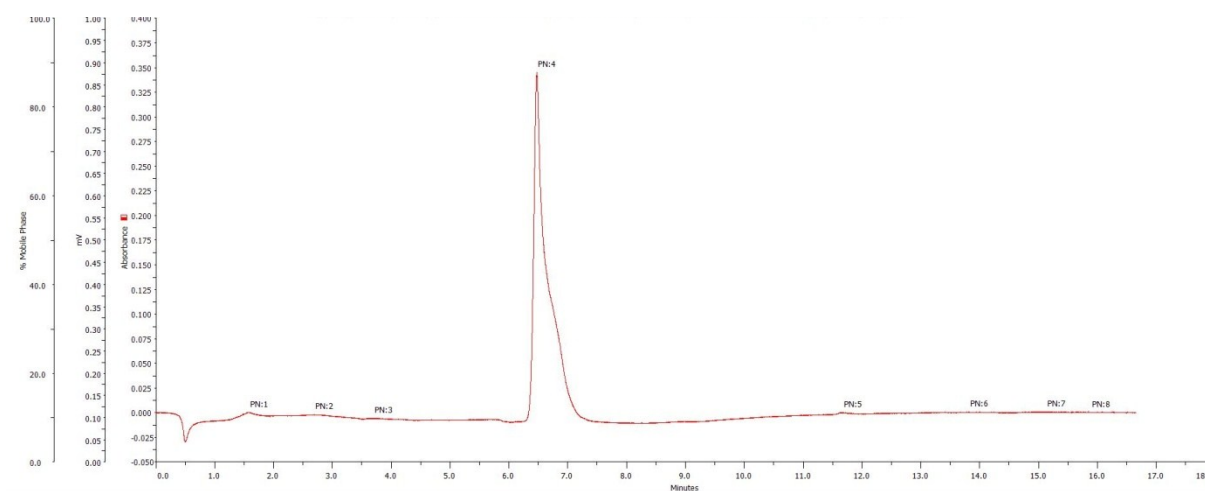


Figure S32: Analytical HPLC of Ac-F_{NO₂}ID-NH₂

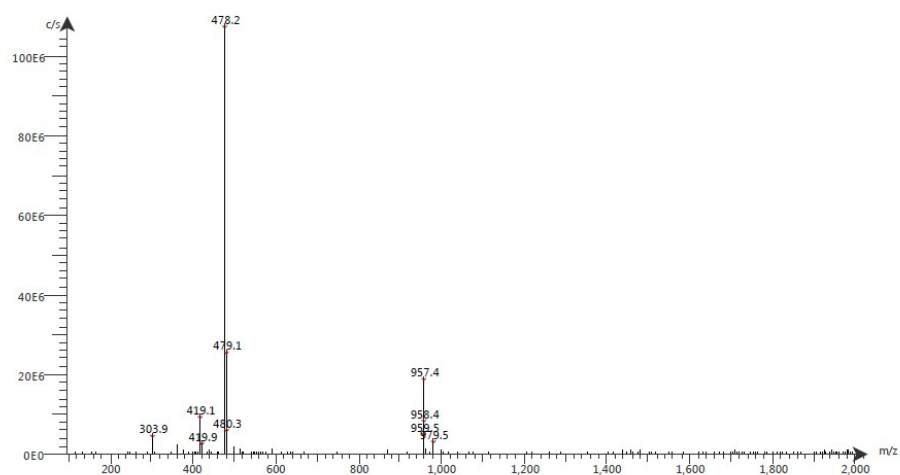


Figure S33: Mass spectroscopy of Ac-F_{NO2}ID-NH₂

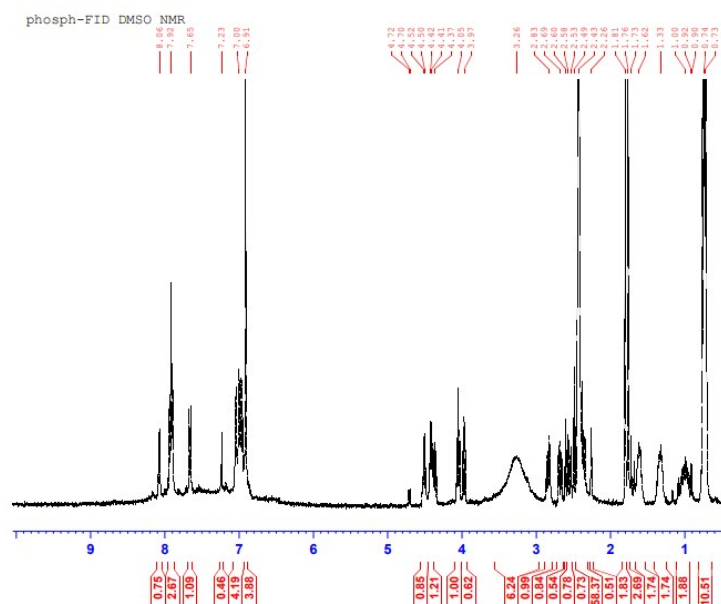


Figure S34: ¹H NMR spectrum of Ac-F_{PO4}ID-NH₂

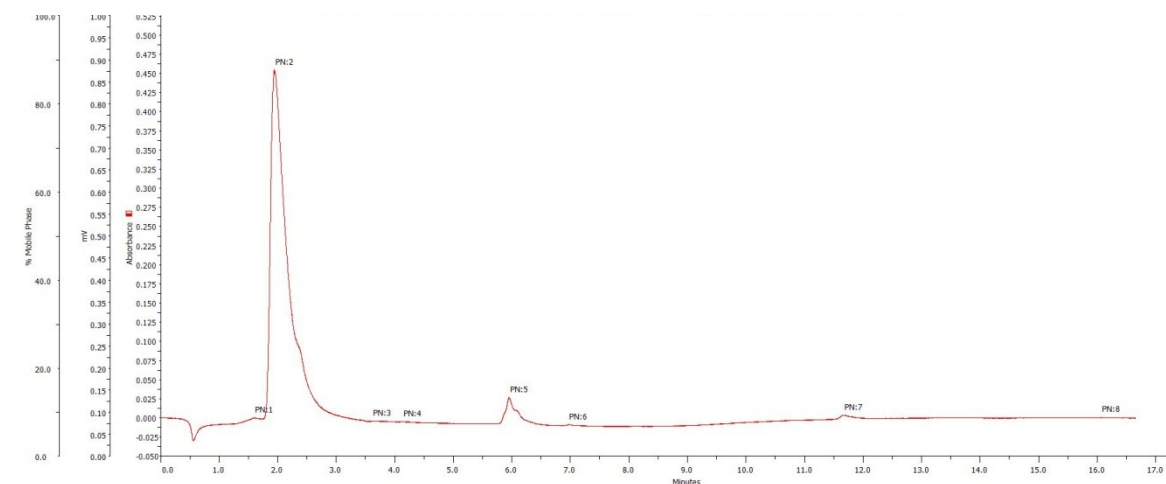


Figure S35: Analytical HPLC of Ac-F_{PO4}ID-NH₂

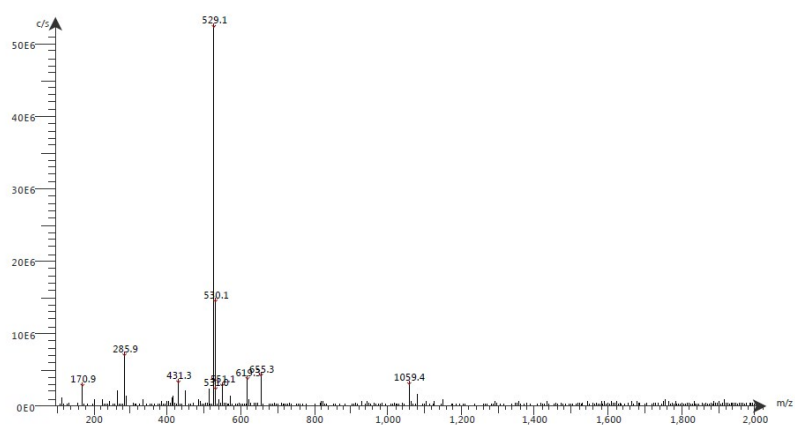


Figure S36: Mass spectroscopy of Ac-F_{PO4}ID-NH₂

2. Additional Supporting Data

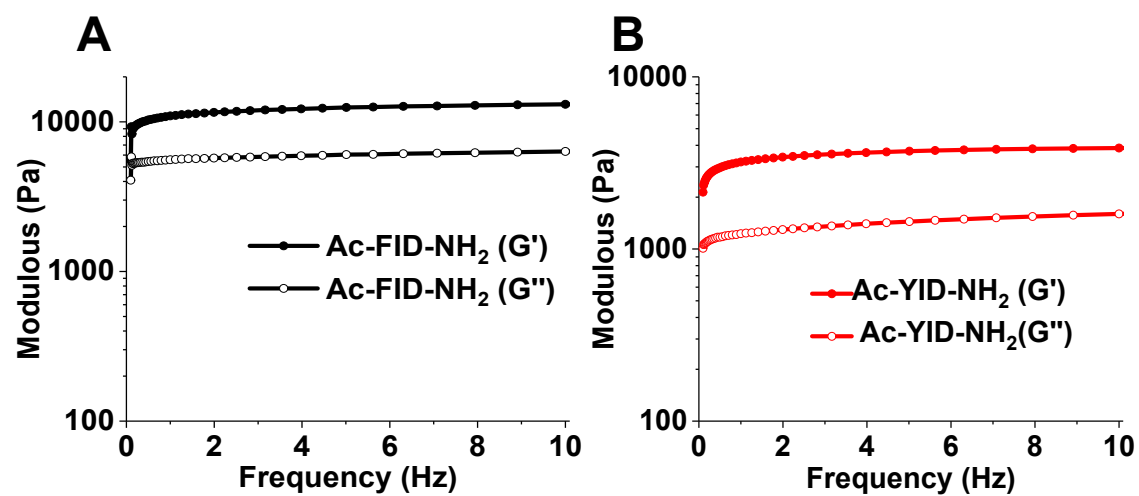


Figure S37: A, B) Oscillating rheology frequency sweep of FID and YID respectively.

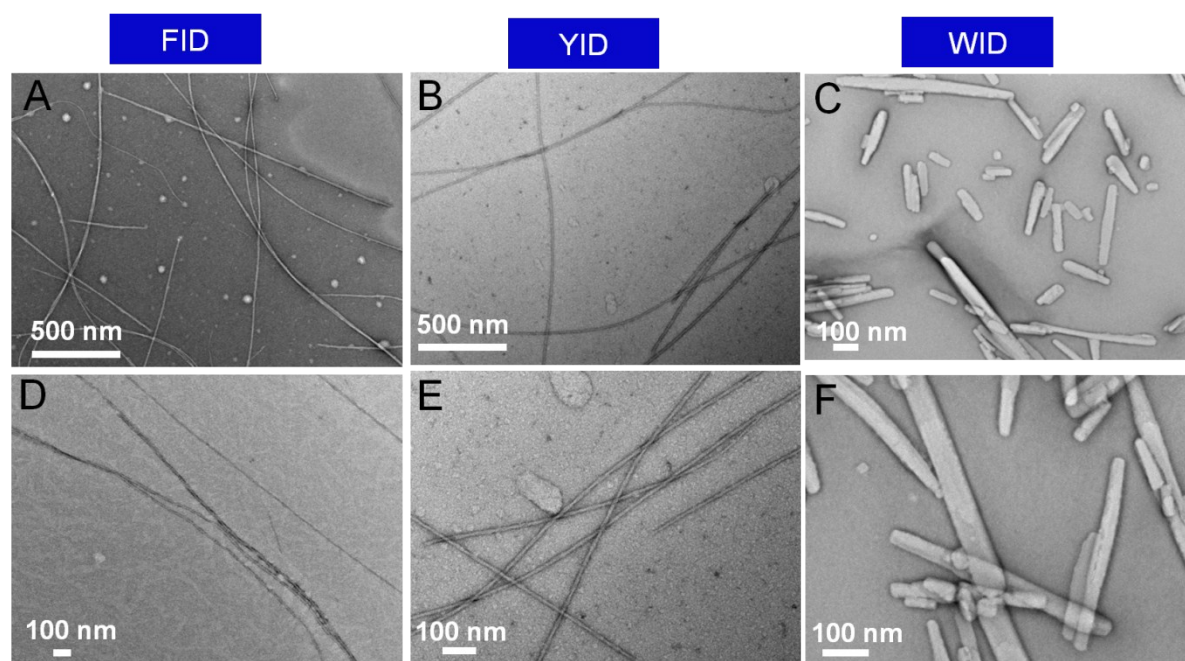


Figure S38: Additional TEM images of the tripeptides: A and D) FID; B and E) YID; C and F) WID.

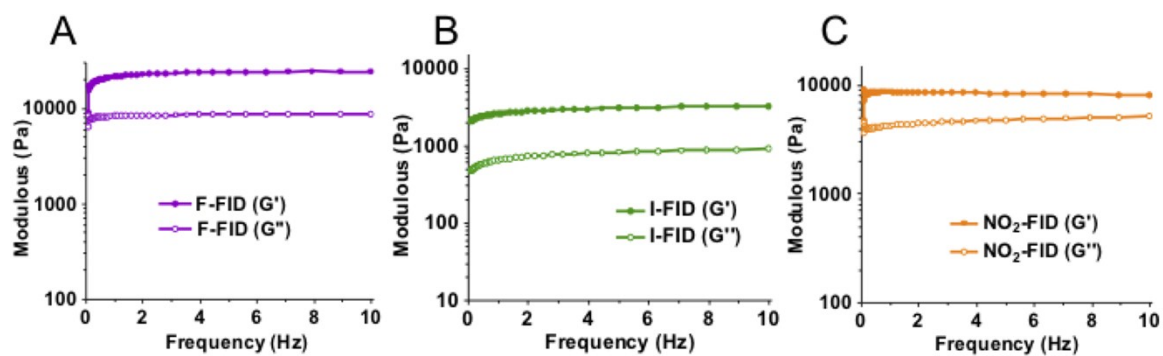


Figure S39: A, B, C) Oscillating rheology frequency sweep of F_{FID} , F_{IID} and $F_{\text{NO}_2\text{ID}}$ respectively.

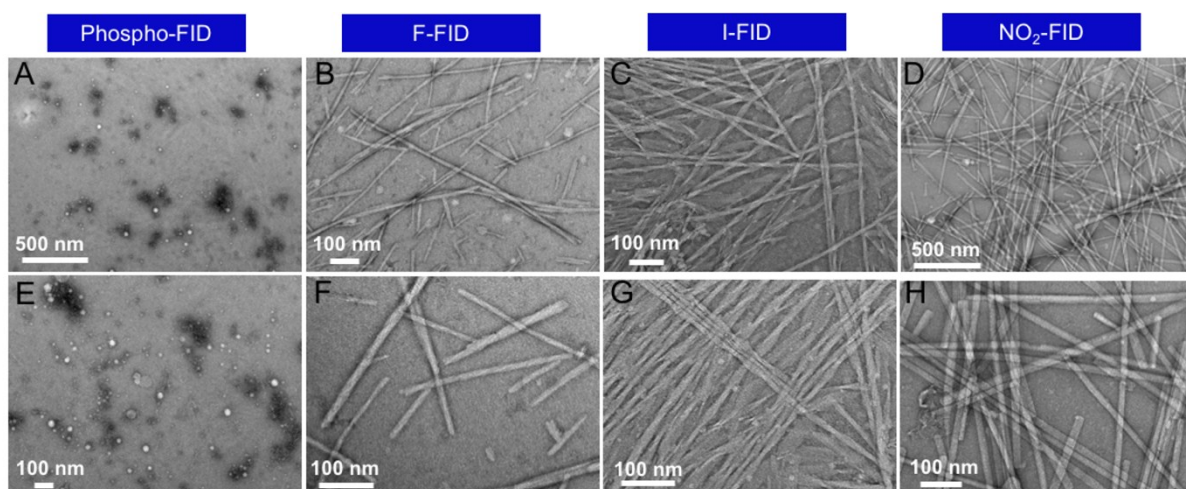
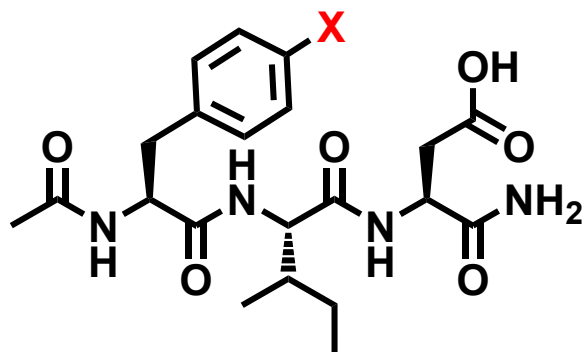


Figure S40: Additional TEM images of the tripeptides at different magnifications: A and E) $F_{\text{PO}_4\text{ID}}$; B and F) F_{FID} ; C and G) F_{IID} ; D and H) $F_{\text{NO}_2\text{ID}}$.



Substitution (X)	Hammett Values
-OH	-0.37
-OPO ₃ H ₂	0.00
-H	0.00
-F	0.06
-I	0.18
-NO ₂	0.78

Table S1: Substitution groups and their corresponding Hammett σ_p Values (From Ref S1)

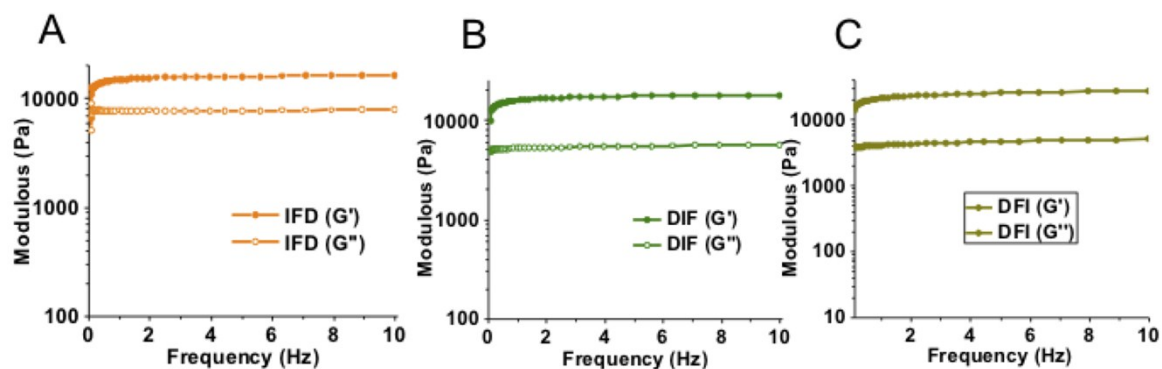


Figure S41: A, B, C) oscillating rheology frequency sweep of IFD, DIF and DFI respectively.

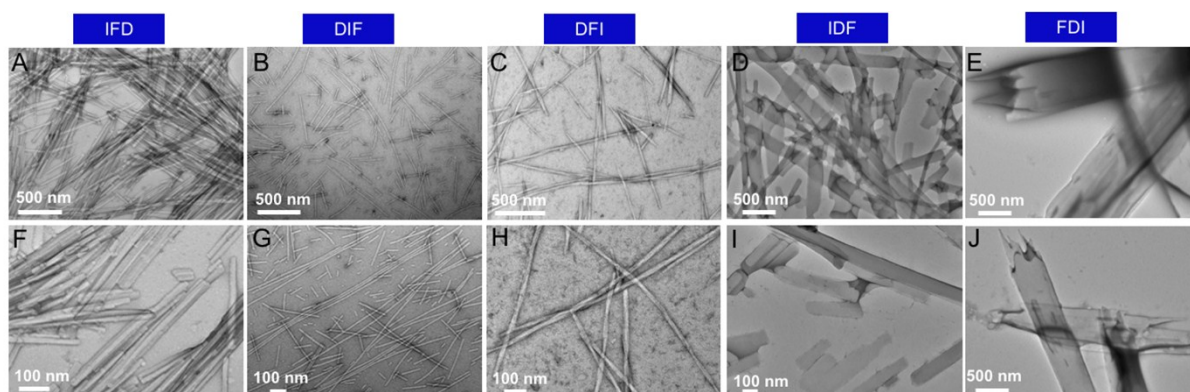


Figure S42: Additional TEM images of the tripeptides at different magnifications: A and F) IFD; B and G) DIF; C and H) FDI; D and I) IDF; E and J) FDI.

4. References:

- S1. C. Hansch, A. Leo and R. W. Taft, *Chem. Rev.*, 1991, **91**, 165–195.