

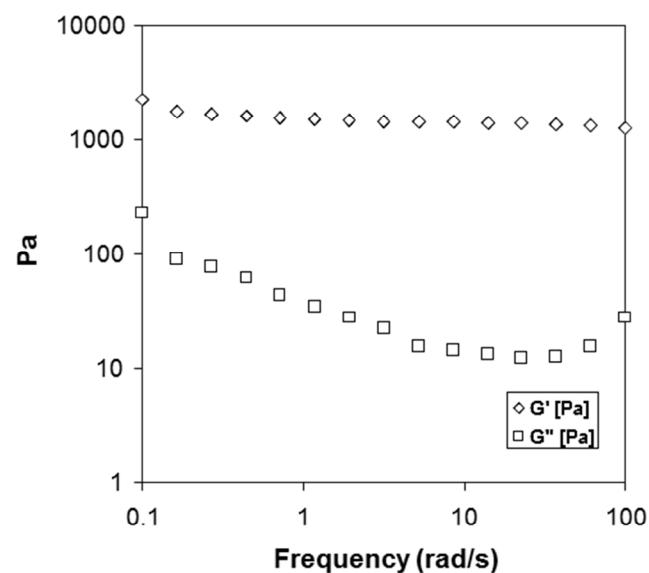
# **Supporting Information:**

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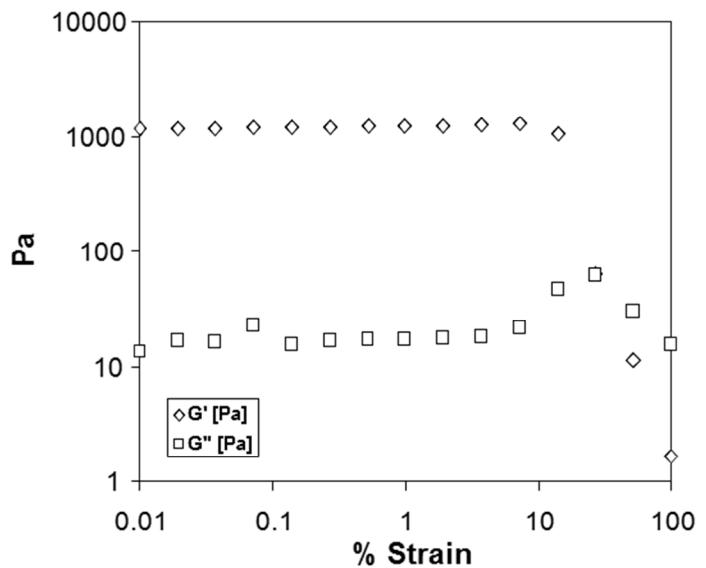
### **Influence of hydrophobic face amino acids on the hydrogelation of $\beta$ -hairpin peptide amphiphiles**

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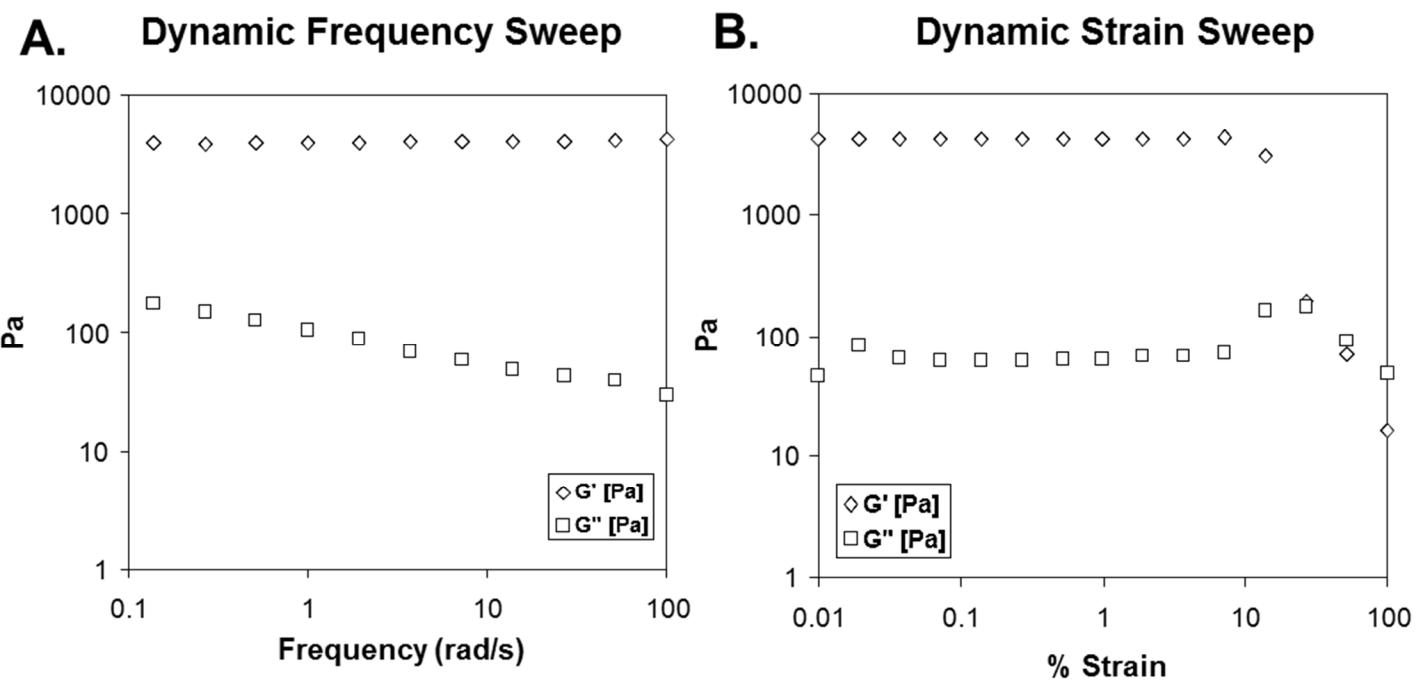
### A. Dynamic Frequency Sweep



### B. Dynamic Strain Sweep

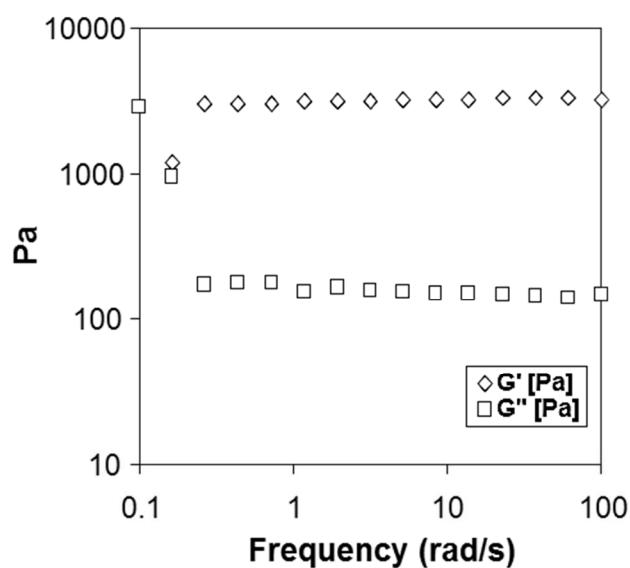


**Figure S1:** (A) Dynamic frequency and (B) strain sweep of 1wt% M(Abu) gels at 80°C in 125 mM borate, 10 mM NaCl, pH 9 buffer.

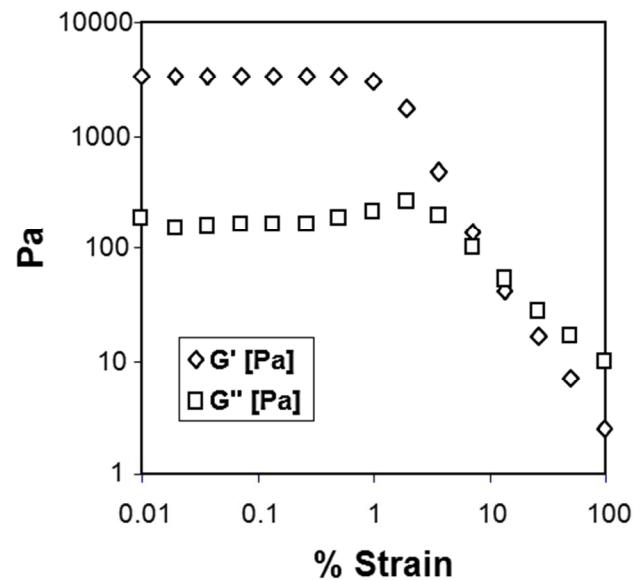


**Figure S2:** (A) Dynamic frequency and (B) strain sweep of 1wt% MAX1 gels at 50°C in 125 mM borate, 10 mM NaCl, pH 9 buffer.

### A. Dynamic Frequency Sweep

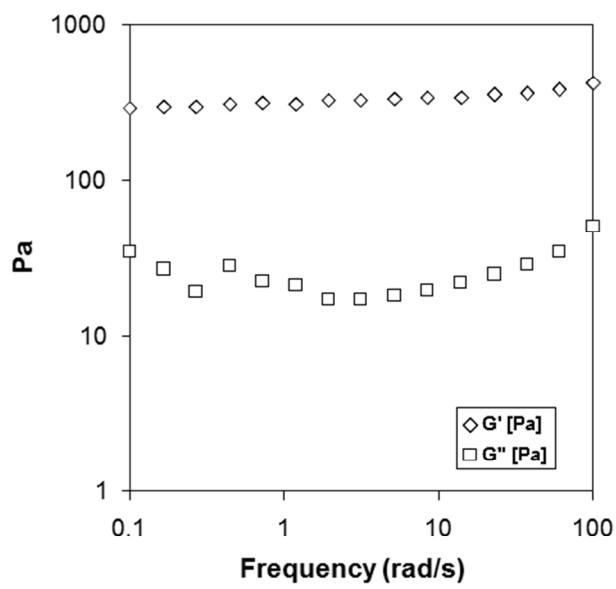


### B. Dynamic Strain Sweep

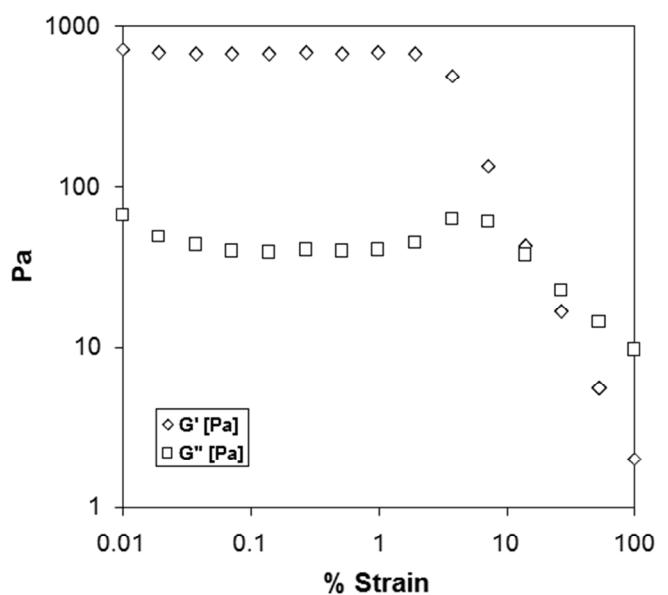


**Figure S3:** (A) Dynamic frequency and (B) strain sweep of 1wt% M(Nva) gels at 50°C in 125 mM borate, 10 mM NaCl, pH 9 buffer.

### A. Dynamic Frequency Sweep

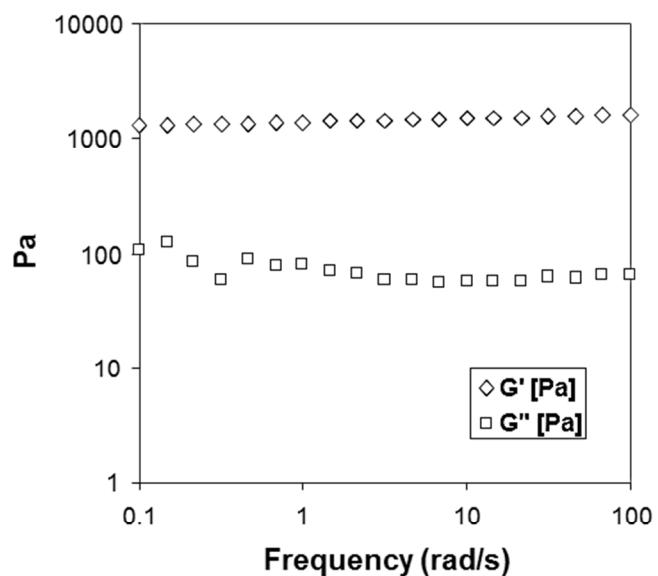


### B. Dynamic Strain Sweep

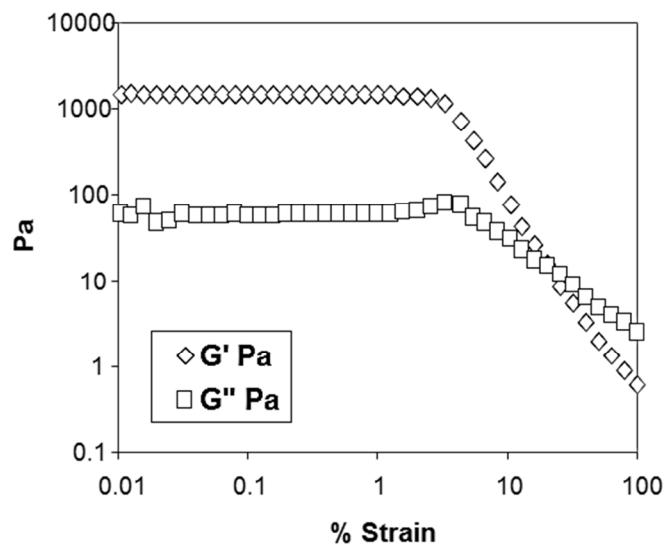


**Figure S4:** (A) Dynamic frequency and (B) strain sweep of 1wt% M(Nle) gels at 50°C in 125 mM borate, 10 mM NaCl, pH 9 buffer

### A. Dynamic Frequency Sweep

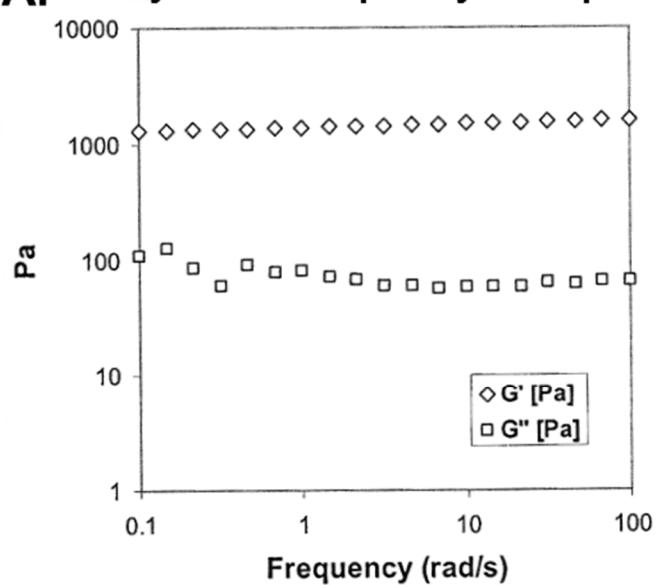


### B. Dynamic Strain Sweep

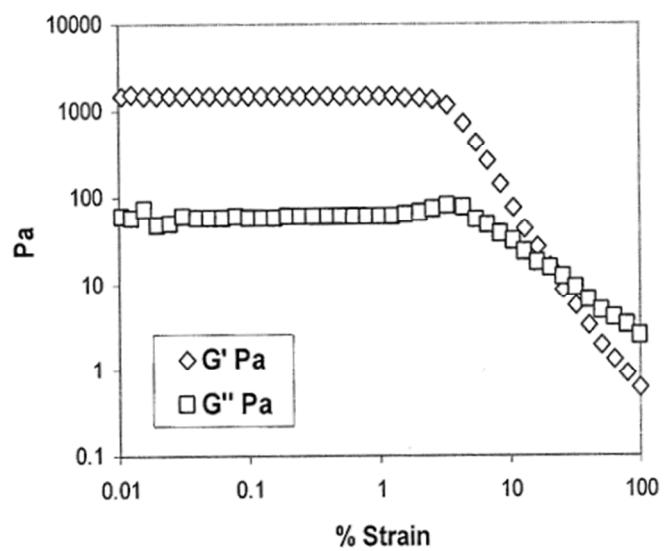


**Figure S5:** (A) Dynamic frequency and (B) strain sweep of 1wt% M(Phe) gels at 50°C in 125 mM borate, 10 mM NaCl, pH 9 buffer

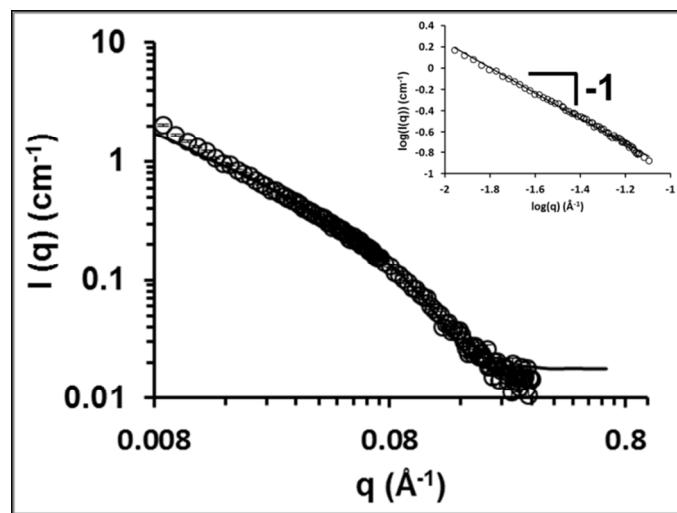
### A. Dynamic Frequency Sweep



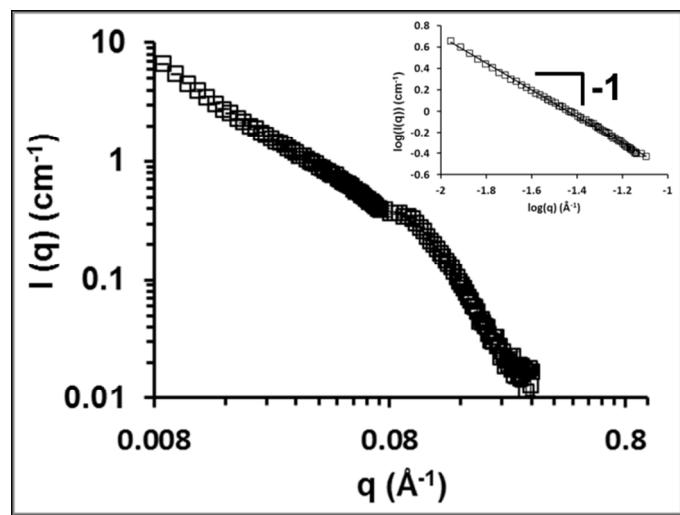
### B. Dynamic Strain Sweep



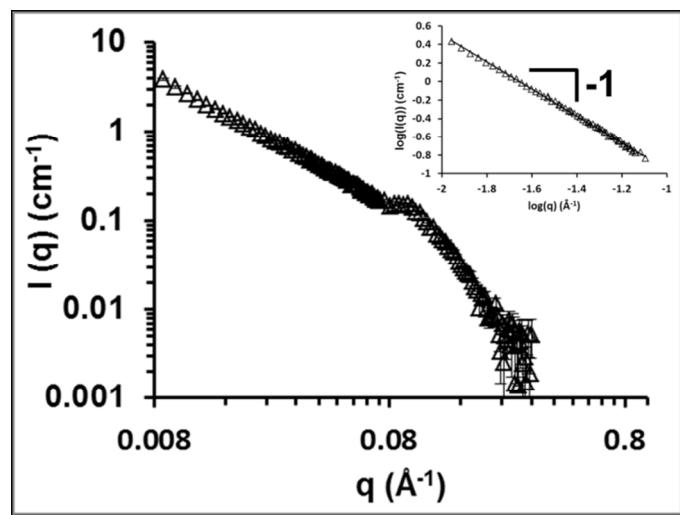
**Figure S6:** (A) Dynamic frequency and (B) strain sweep of 1wt% M(lle) gels at 50°C in 125 mM borate, 10 mM NaCl, pH 9 buffer



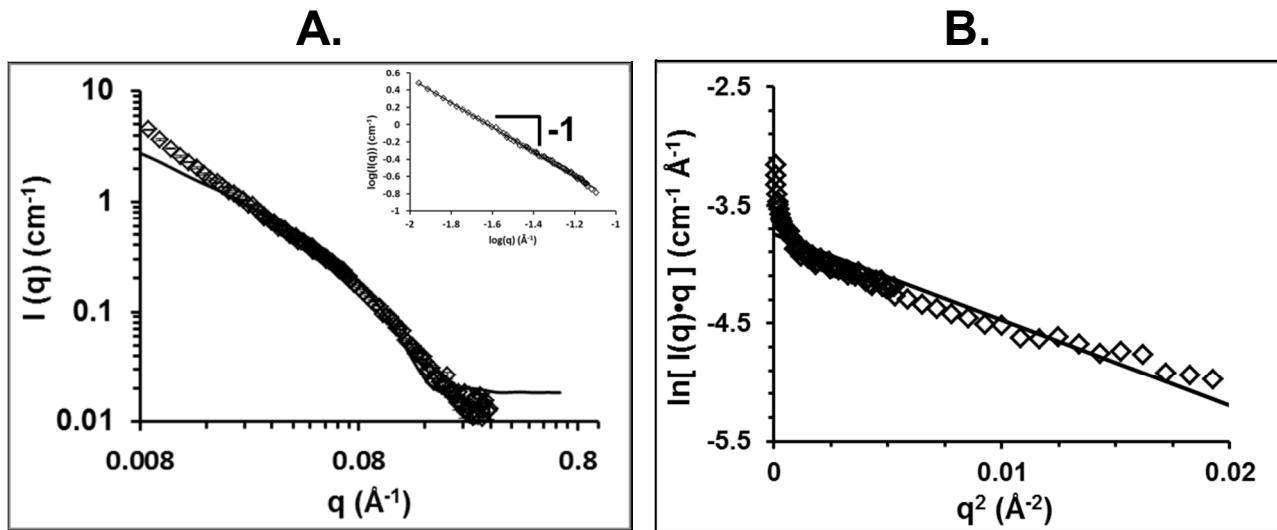
**Figure S7:** SANS analysis of M(Nva), with data fit using a cylindrical form factor. Inset shows a slope of approximately -1 for  $\log I(q)$  versus  $\log q$ .



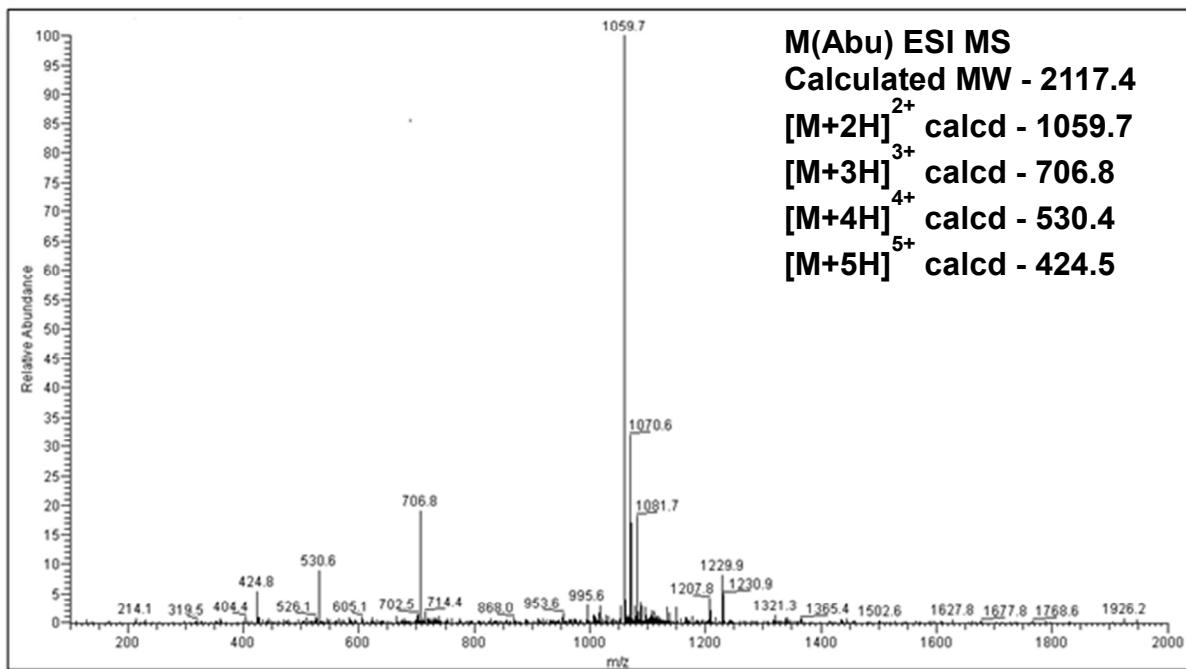
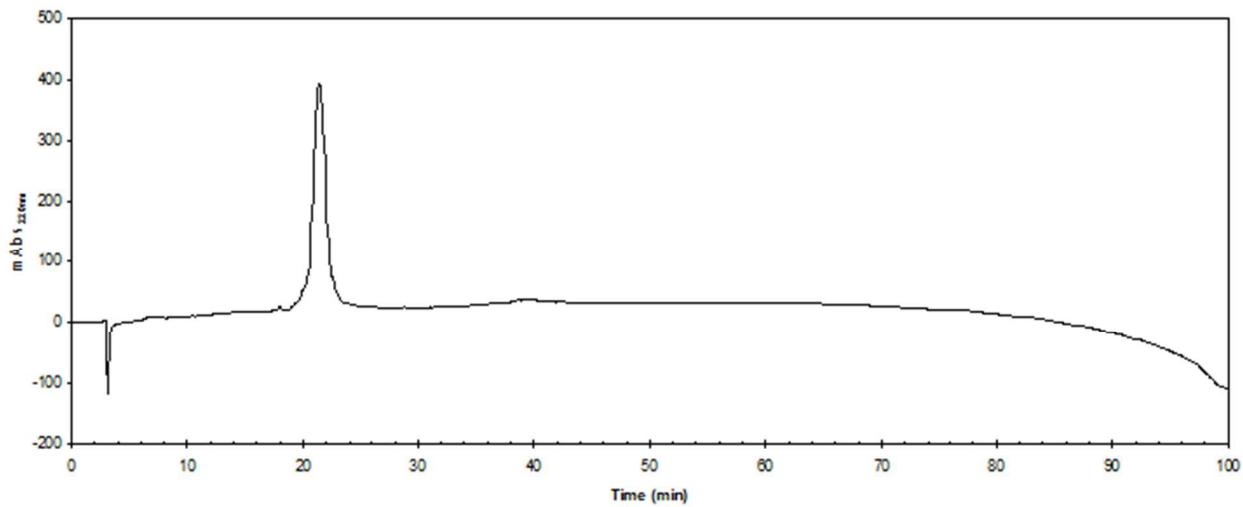
**Figure S8:** SANS analysis of M(Nle). Inset shows a slope of approximately -1 for  $\log I(q)$  versus  $\log q$ .



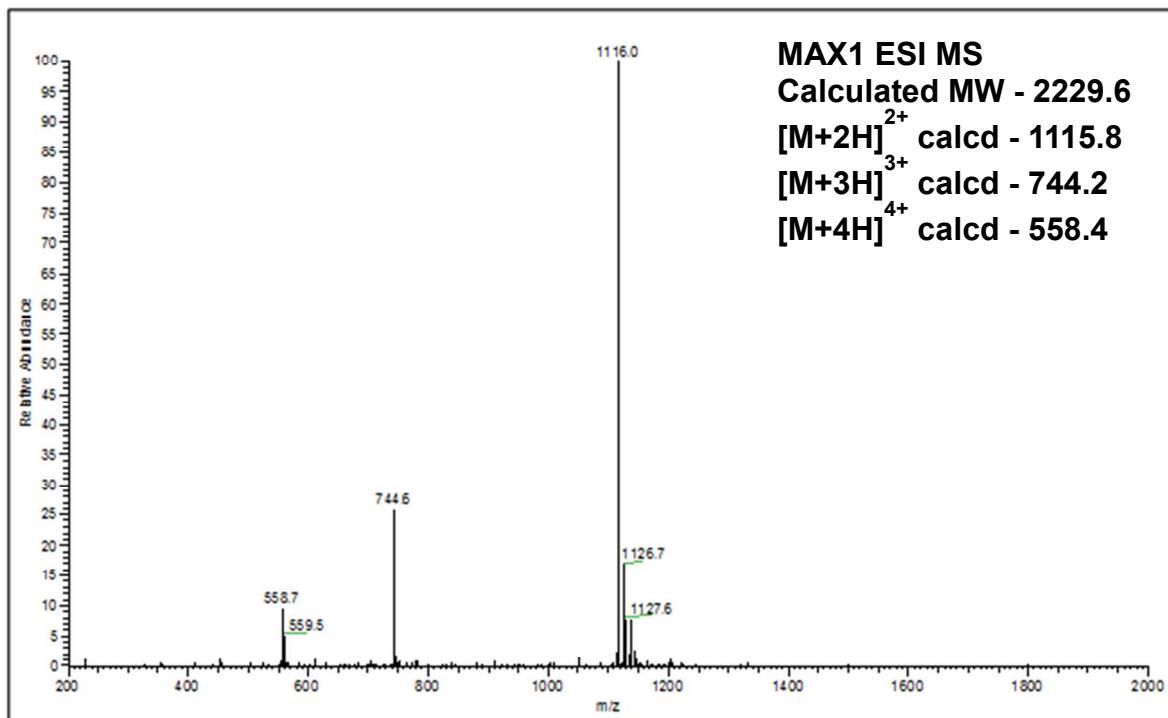
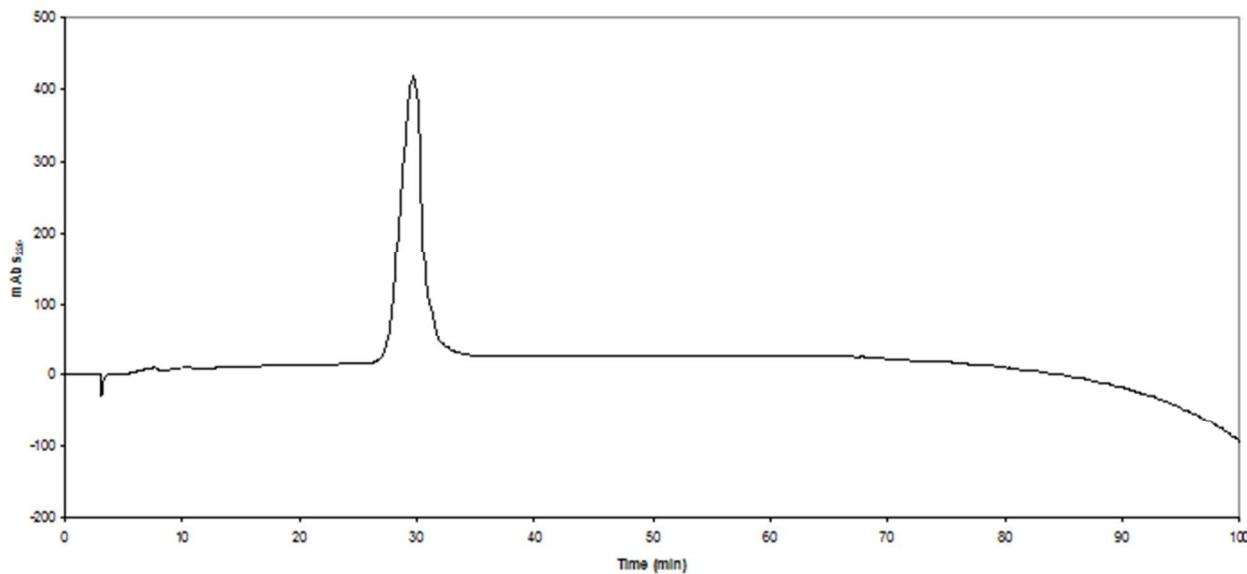
**Figure S9:** SANS analysis of M(Phe). Inset shows a slope of approximately -1 for  $\log I(q)$  versus  $\log q$ .



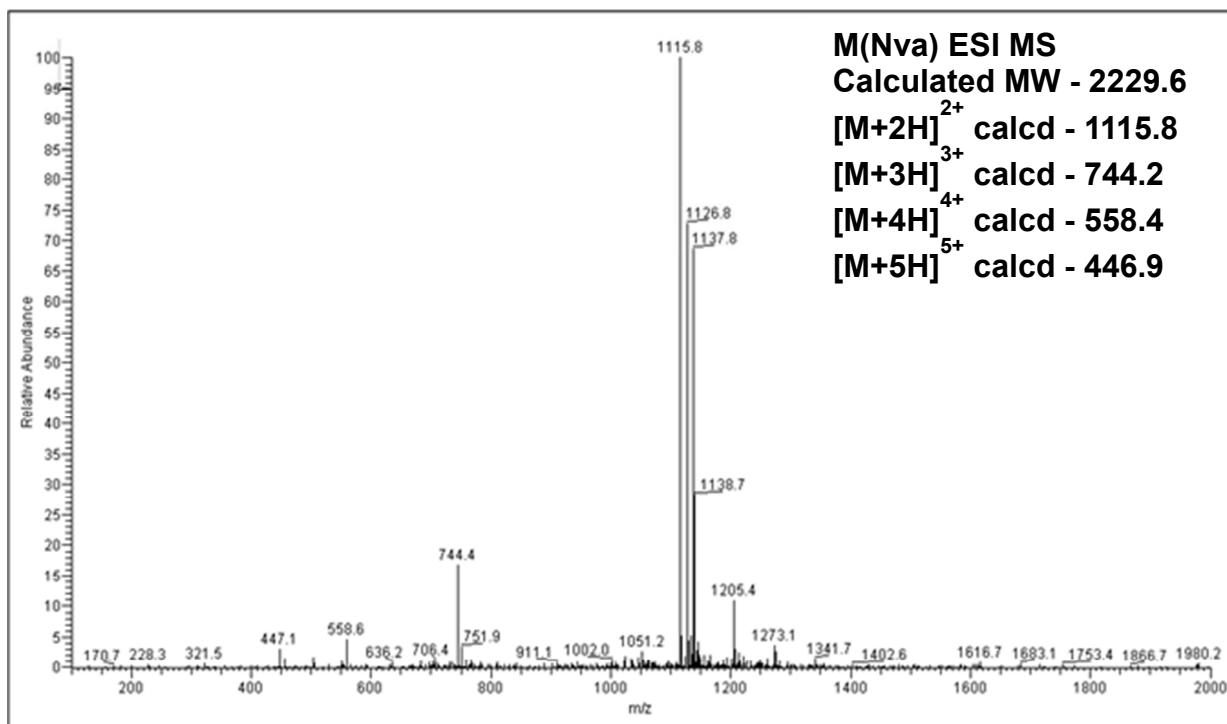
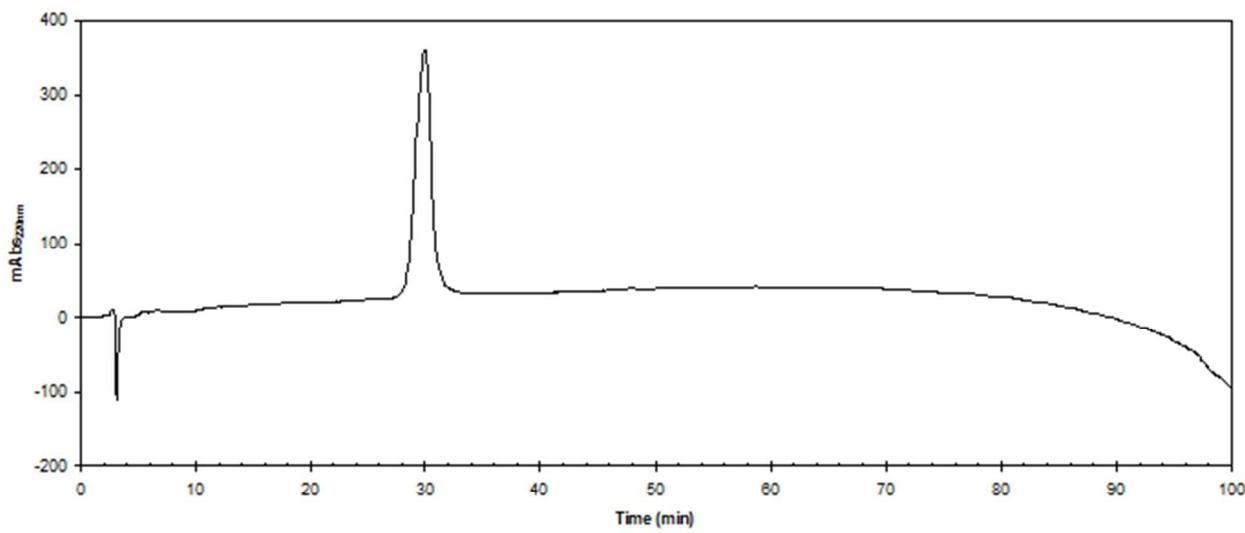
**Figure S10:** (A) SANS analysis of M(Ile), with data fit using a cylindrical form factor. Inset shows a slope of approximately -1 for  $\log I(q)$  versus  $\log q$ . (B) SANS data for M(Ile) plotted as  $\ln[I(q) \cdot q]$  versus  $q^2$ . A linear fit was applied to the data in the low  $q$  regime to calculate fibril cross-sectional diameter using a modified Guinier analysis.



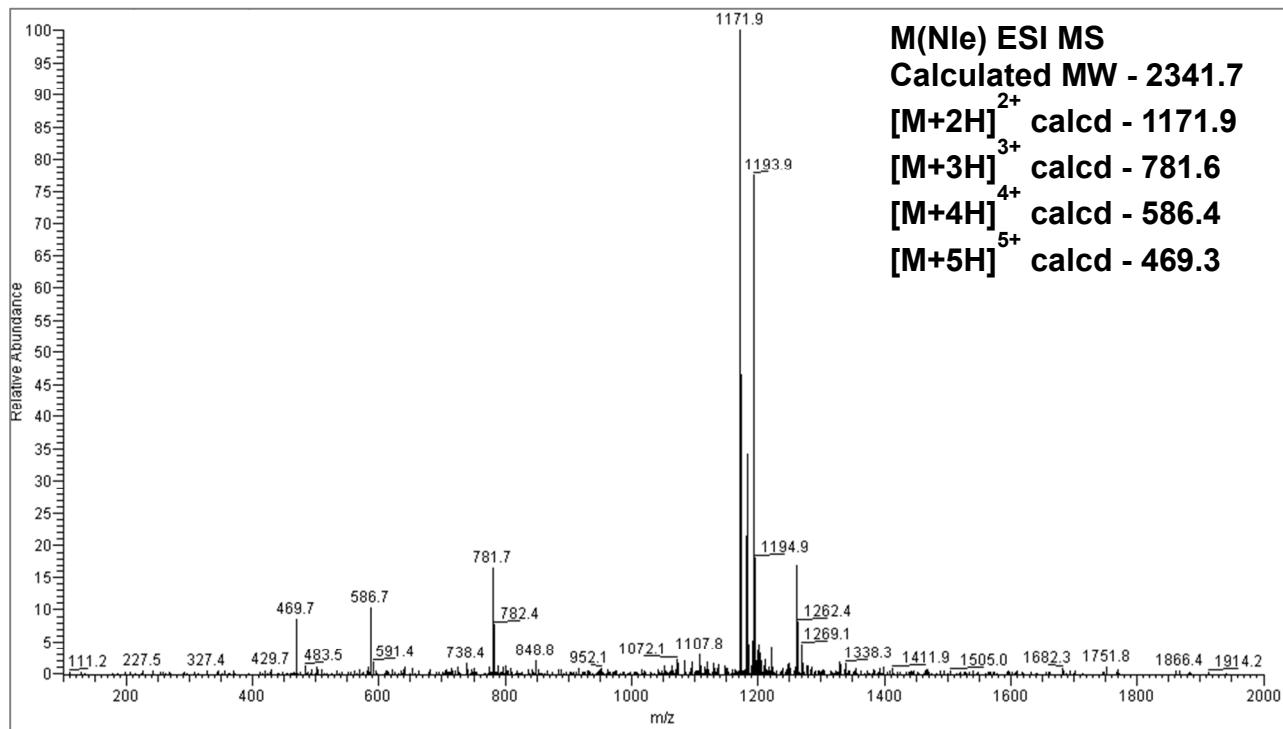
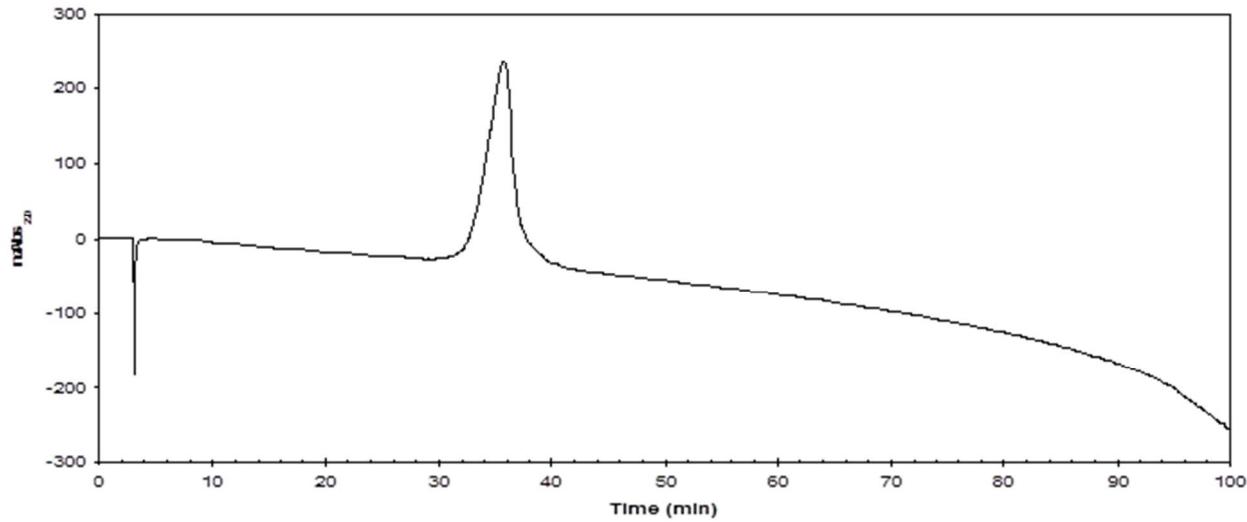
**Figure S11:** M(Abu) – Analytical HPLC (Vydac C18) 0-100% B; 100 min; 20°C.



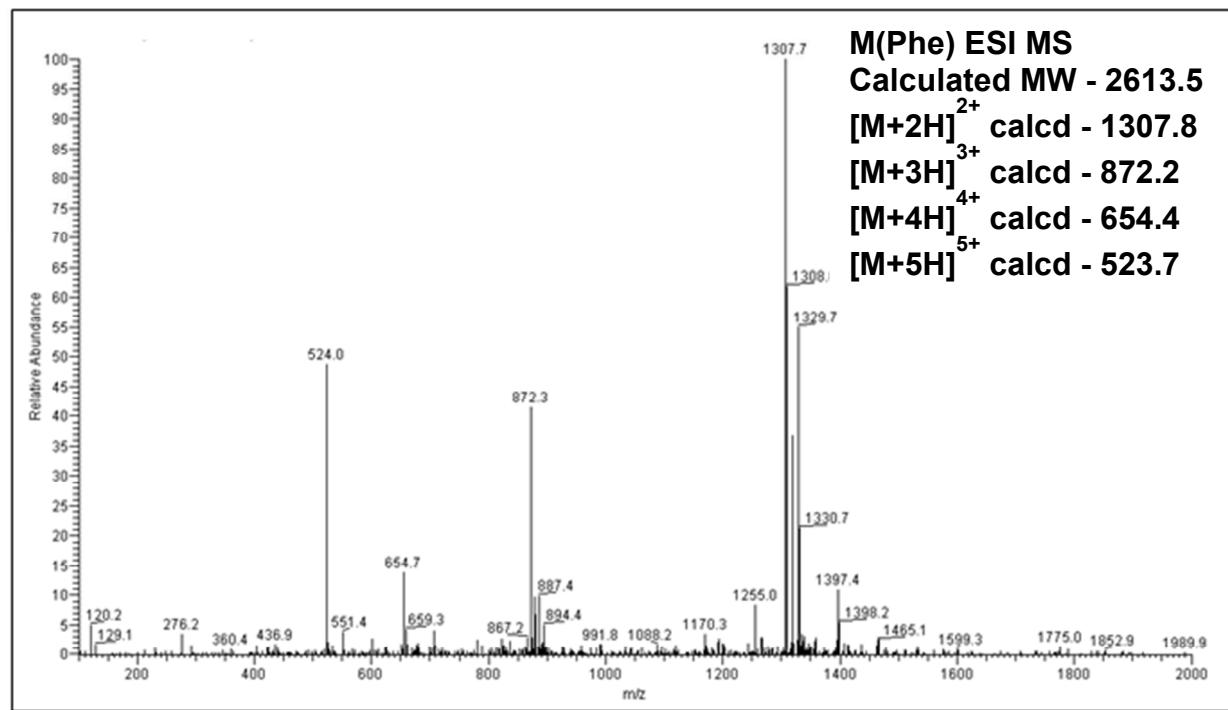
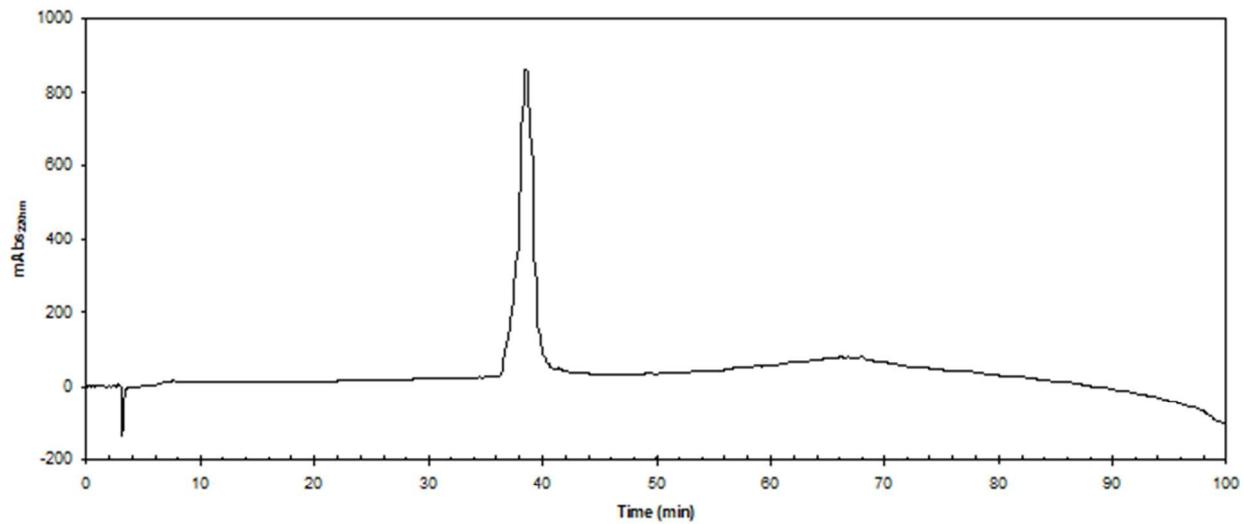
**Figure S12:** MAX1 – Analytical HPLC (Vydac C18) 0-100% B; 100 min; 20°C.



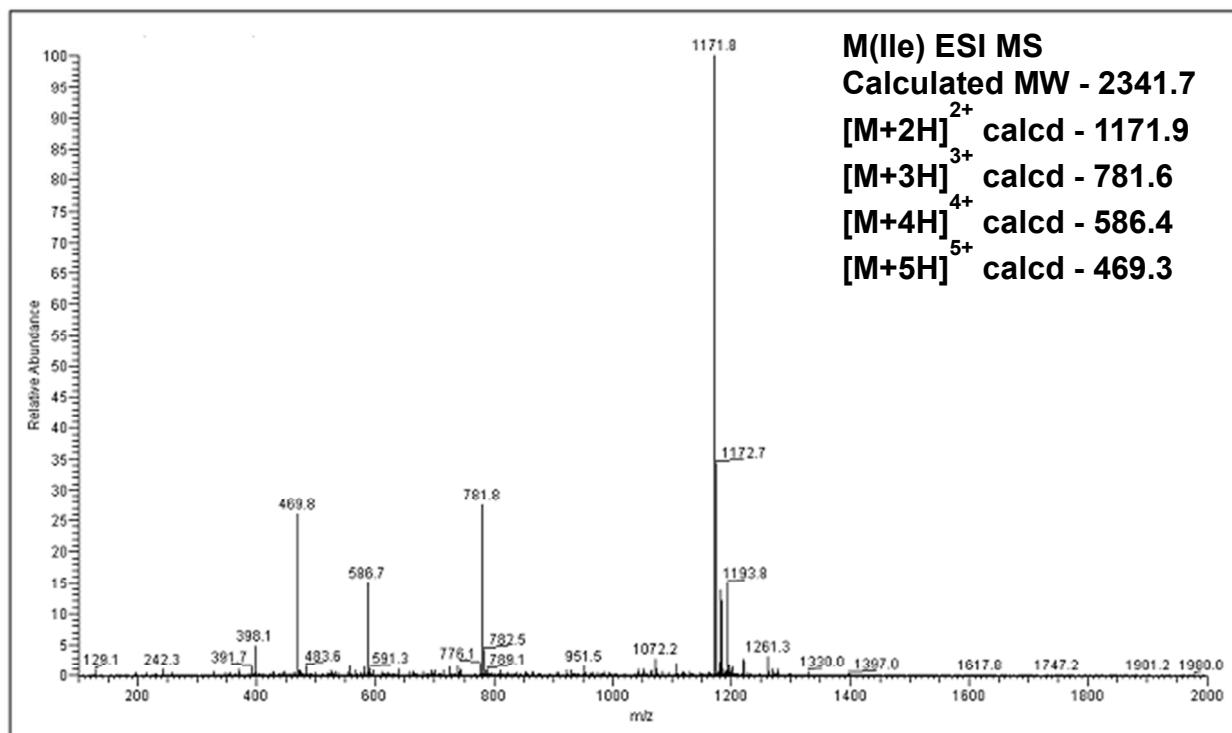
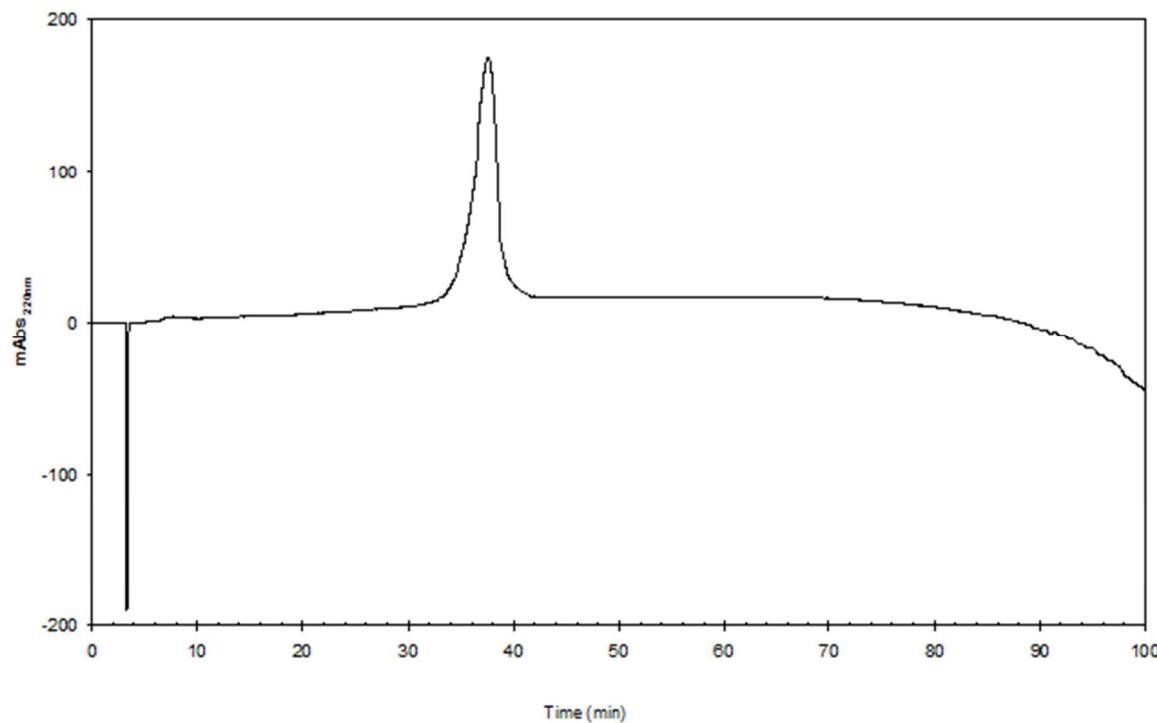
**Figure S13:** M(Nva) – Analytical HPLC (Vydac C18) 0-100% B; 100 min; 20°C.



**Figure S14:** M(Nle) – Analytical HPLC (Vydac C18) 0-100% B; 100 min; 20°C.



**Figure S15:** M(Phe) – Analytical HPLC (Vydac C18) 0-100% B; 100 min; 20°C.



**Figure S16:** M(Ile) – Analytical HPLC (Vydac C18) 0-100% B; 100 min; 20°C.