Electronic Supporting Information

Antibacterial Hydrogels of Aromatic Tripeptides

Vivek Prakash,[a] Yvonne Christian,[a] Amay Sanjay Redkar,[a] Abhishek Roy,[b] R. Anandalakshmi,[b] Vibin Ramakrishnan*[a]

[a] Molecular Informatics and Design Laboratory, Department of Biosciences and Bioengineering, Indian Institute of Technology Guwahati, Assam 781039, India.
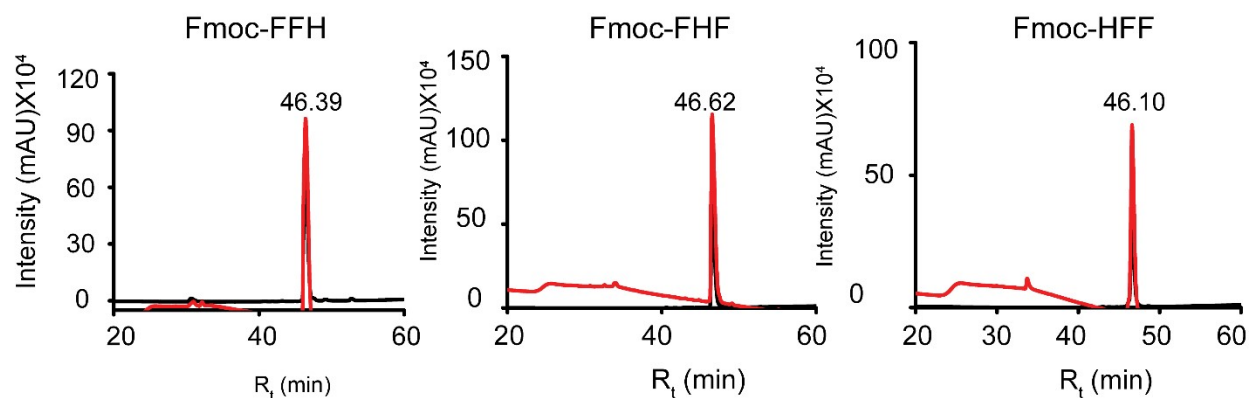
E-mail: vibin@iitg.ac.in

[b] Advanced Energy & Materials Systems Laboratory, Department of Chemical Engineering, Indian Institute of Technology Guwahati, Assam 781039, India
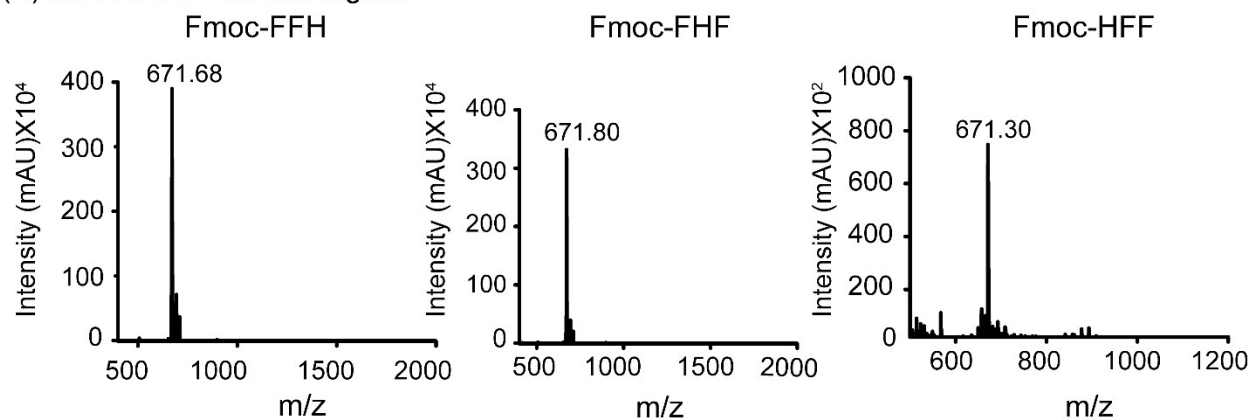
Index

1. Design, Synthesis and Characterization of peptides

(A) HPLC chromatogram



(B) MALDI/TOF chromatogram

Fig.S1 Characterization of synthesized peptides; (A) HPLC chromatogram of the synthesized peptide, and (B) Mass spectrum for primary characterization by verifying the mass of the synthesized peptide.

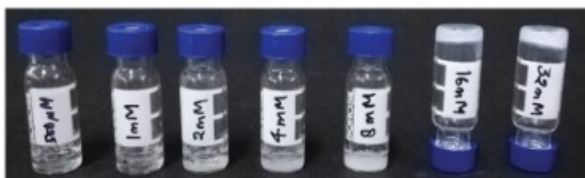## 2. Characterization of hydrogel formation

Peptides were dissolved in phosphate buffer (pH 7.4) at different concentrations, and gelation was observed by tube inversion test (Fig. S2)
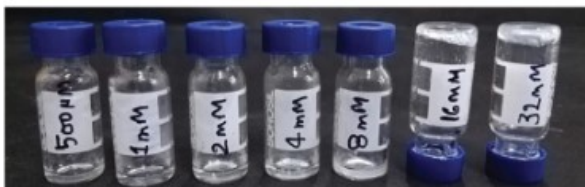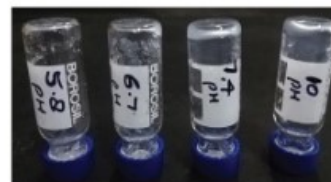
(A) Concentration dependence of gelation
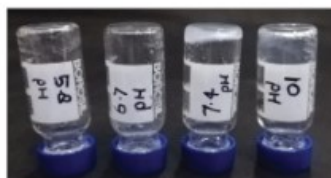
Fmco-FFH
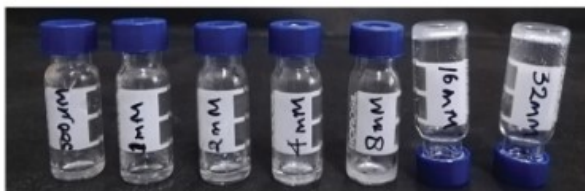
Fmco-FHF

Fmco-HFF

(B) pH optimization for gelation

Fmco-FFH

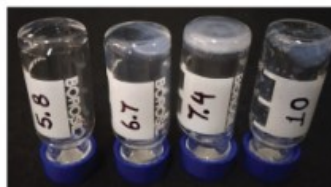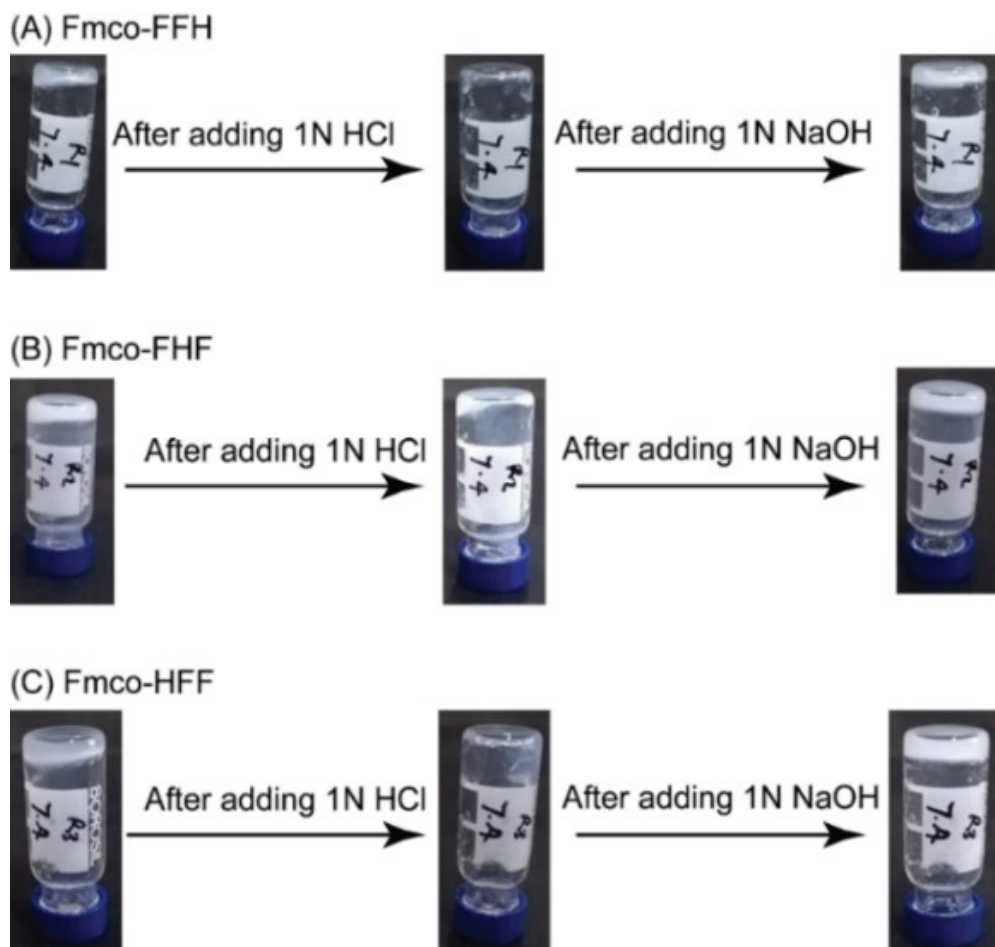### Fmco-FHF

Fmco-HFF

Fig. S2. (A) Concentration dependence of hydrogelation and (B) Optimization of pH for hydrogel formation.

Fig S3. Dependence of hydrogelation property with pH switch. Hydrogels lose their gelation property in acidic pH but regained again when switched to basic conditions.

**Table S1.** Determination of gelation concentration for peptide hydrogels

Concentration	Concentration % (w/v)	Gelation Property
500 μM	0.03125%	No gel formation
1 mM	0.0625%	No gel formation
2 mM	0.125%	No gel formation
4 mM	0.25%	No gel formation
8 mM	0.5%	No gel formation
16 mM	1%	Gel formation
32 mM	2%	Immediate Gel formation

Table S2. Effect of pH on gelation

pH	Gelation Property	Gelation time
5.8	No gel formation	-
6.7	No gel Formation	-
7.4	Gel formation	Immediate
10	Viscous solutions	-

Spread plate method

Spread plate method was used to validate the antibacterial effect of peptides.
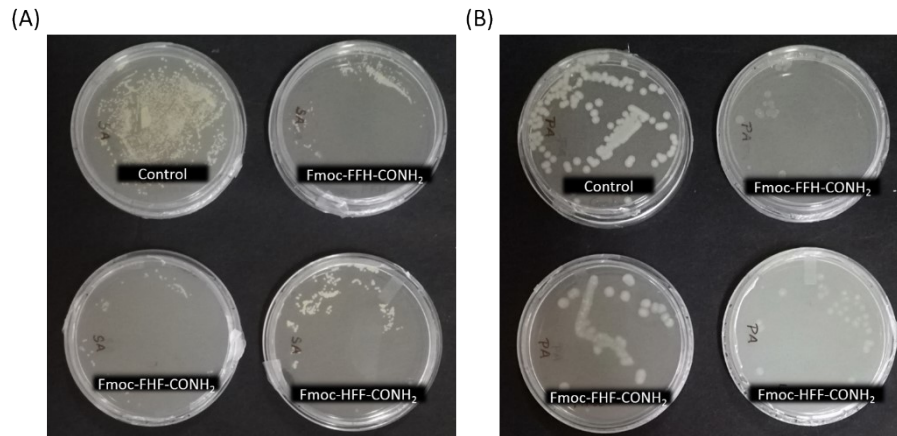
Fig. S4. Spread plate method to validate the antibacterial effect of peptides on (A) *Staphylococcus aureus*, (B) *Pseudomonas aeruginosa*