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*Supplementary Material*

# Antimicrobial Peptide Immobilization on Catechol-Functionalized PCL/Alginate Wetspun Fibers to Combat Surgical Site Infection

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Keywords: Antibacterial resistance; Antimicrobial peptide; Surgical Site Infection; Resistant bacteria.

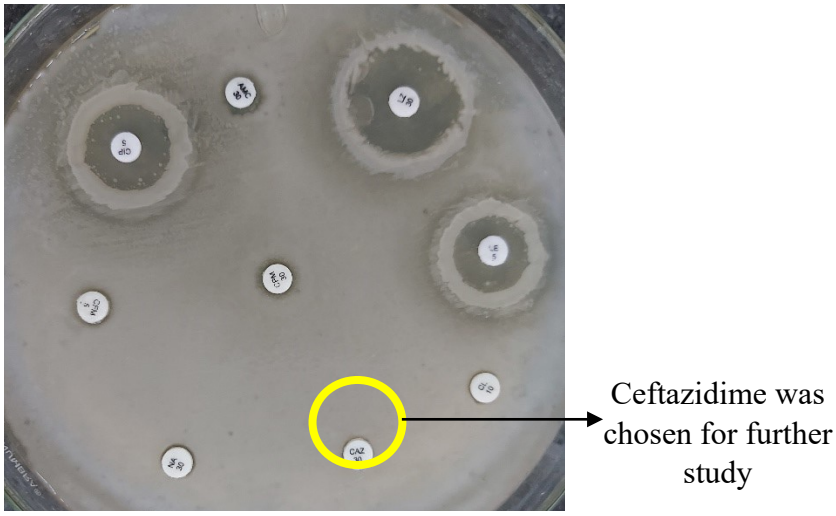



**Figure S1.** *Proteus spp.* demonstrated resistance to common antibiotics like ceftazidime, cefixime, cefepime, colistin etc. Among them ceftazidime was used to compare its activities against extracted AMP.

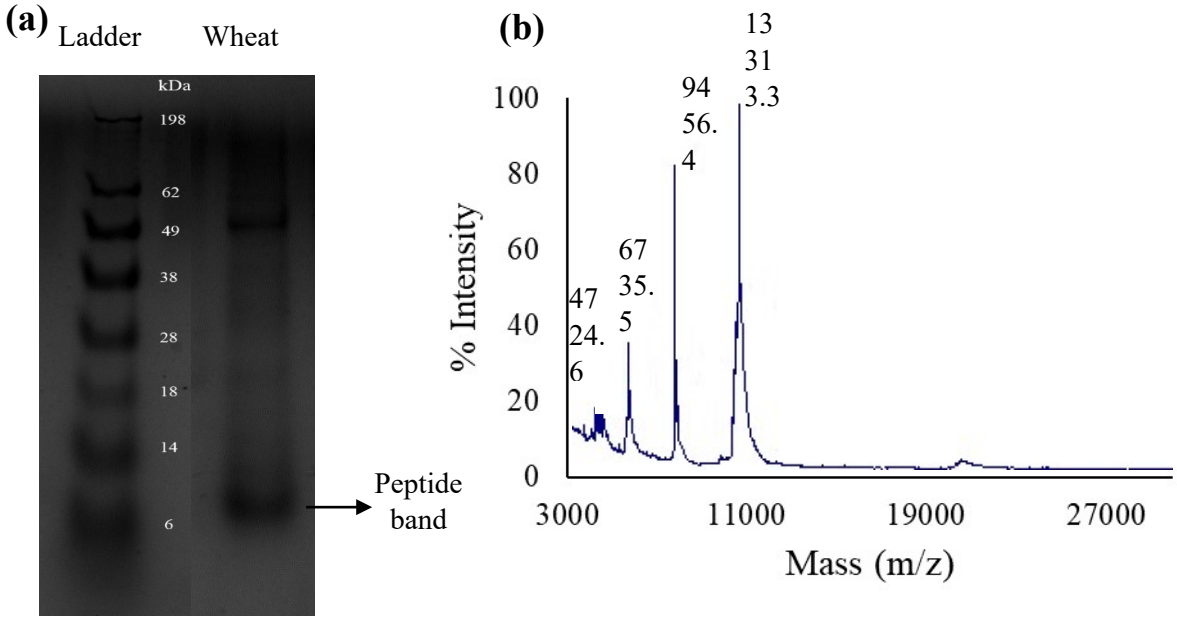
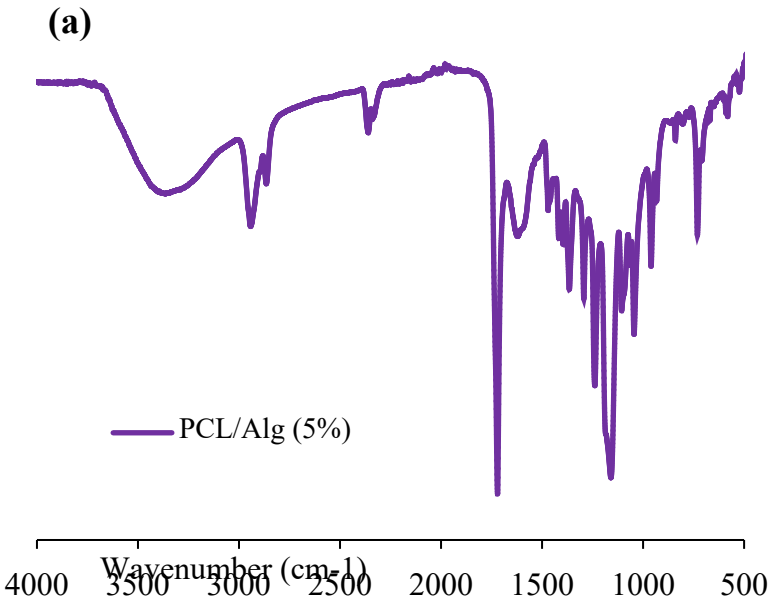



**Figure S2.** After anion exchange the purified peptides had masses between 6 and 14 kDa. Further purification by size exclusion chromatography and mass spectrometry revealed that the masses of

the purified proteins were around 6.7 and 9.4 kDa. The peak at 13.3 kDa ay indicate a dimeric form of the peptide with mass 6.7 kDa.

**Table S1.** Concentrations of peptides after size exclusion chromatography.

| Concentration before freeze drying (mg/mL) | Concentration after freeze drying (mg/mL) |
|---|---|
| 0.35 | 1.2 |



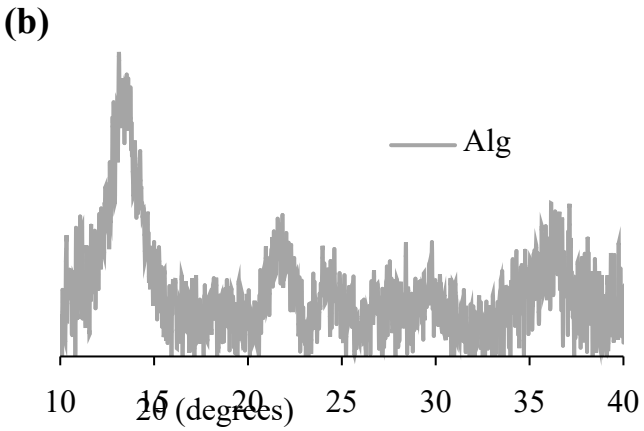



**Figure S3.** (a) ATR-FTIR spectra of PCL/Alg when 5% (w/v) Alg was used to manufacture the composite fiber, (b) XRD pattern of amorphous Alg.

**Table S2**. Glass transition temperatures, melting temperatures, initial degradation temperatures, and crystallinities of PCL, SA, and PCL-SA.

| **Sample name** | **Glass Transition Temperature (°C)** | **Melting Temperature (°C)** | **Initial Degradation Temperature (°C)** | **Crystallinity (%)** |
|---|---|---|---|---|
| PCL | ~-60 | ~59 | ~359 | 72.3 |
| SA | ~70 | — | ~36 | — |
| PCL-SA | — | ~62 | ~319-329 | 78.4 |