Therapeutic Compositions of Antimicrobial Peptides
Background

• The invention consists of natural, amidated and cyclic amidated L-peptides and synthetic D-amino acid substituted peptides from the Brevinin-1 and -2, Esculentin and Ranacyclin family of peptides.

• The peptides have different antibacterial, haemolytic and cytotoxic properties to gram +ve, gram –ve, RBCs and cultured mammalian cells respectively.
Mode of Action

• Electrostatic binding to bacterial anionic membranes
• Bacterial membrane depolarization
• Transmembrane pore formation
• Bacterial lysis
Killing Kinetics Examples

**S. aureus**

<table>
<thead>
<tr>
<th>MIC (1.5 µM)</th>
<th>Peptide</th>
<th>15 min</th>
<th>MIC (2.5 µM)</th>
<th>Peptide</th>
<th>15 min</th>
<th>MIC (10 µM)</th>
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**V. cholerae**

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<th>MIC (12 µM)</th>
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MIC = The Minimum Inhibitory Concentration
Membrane Disruption Examples

MIC = The Minimum Inhibitory Concentration
The invention is directed to novel natural, amidated and cyclic amidated L-peptides and synthetic D-substituted peptides that have potent antibacterial activity towards gram-positive and gram-negative bacteria.