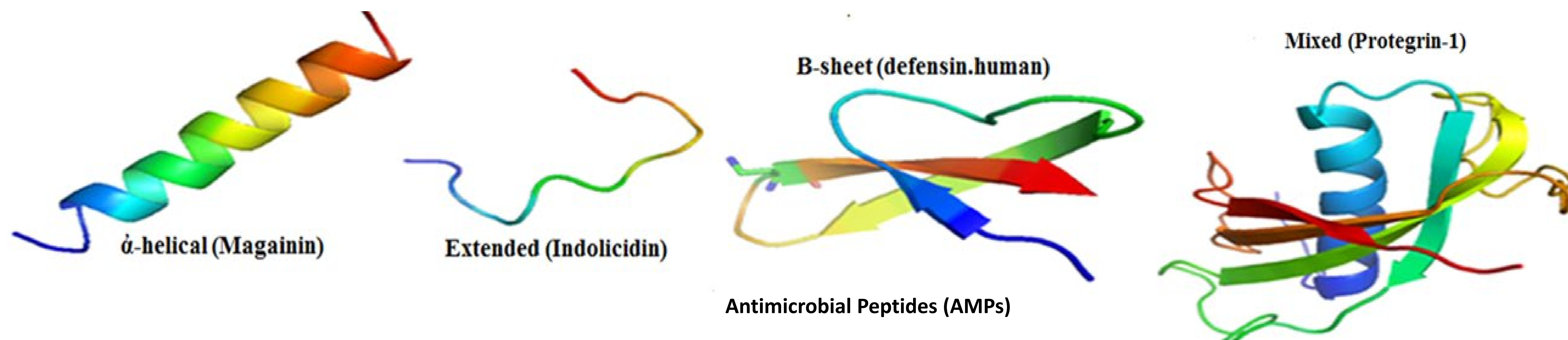


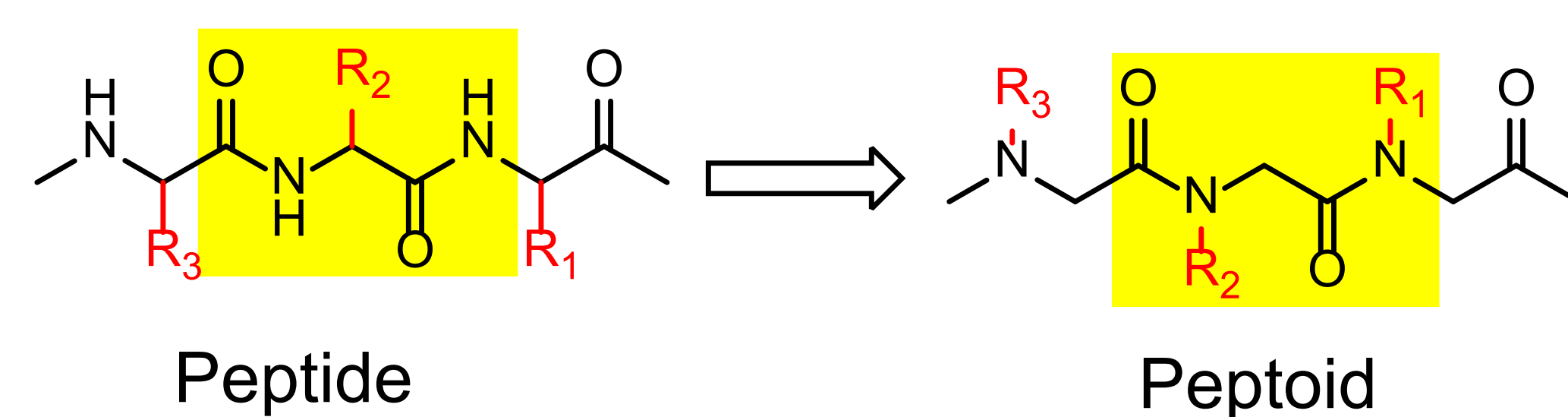
Introduction



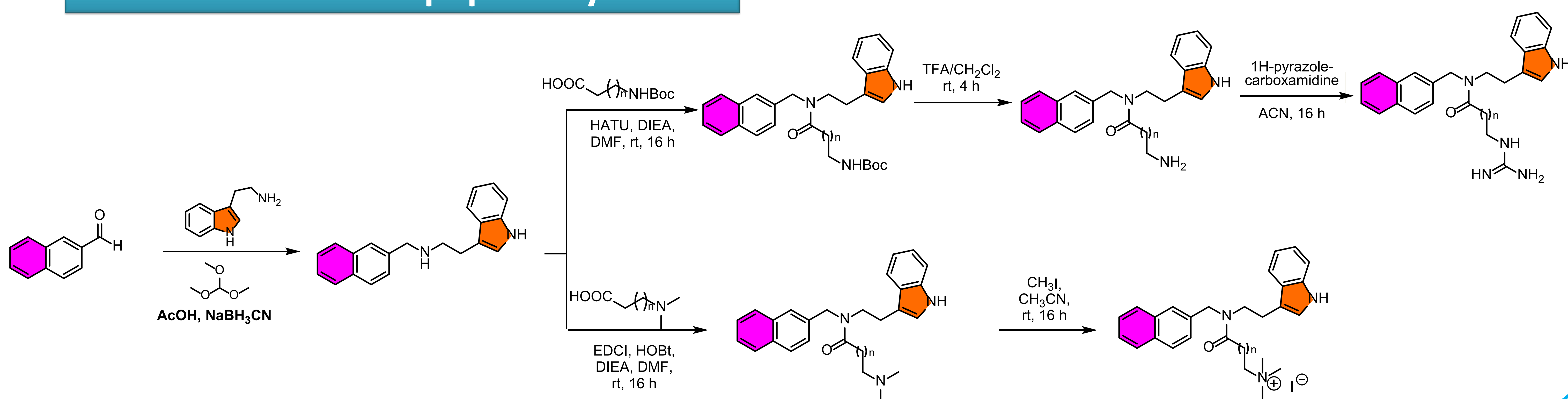
- Antimicrobial peptides (AMPs) are typically 10-50 amino acids in length and form part of the innate immune system in all classes of life.
- Unlike conventional antibiotics, AMPs act via non-receptor interactions which make it difficult for the bacteria to develop resistance.
- Short peptidomimetics based on AMPs comprise one of the most effective approaches to new antibiotic discovery.
- Peptoids are similar to peptides but differ in the location of the side chain.
- Peptoids have high bio-stability because they are not susceptible to proteases.

Aim

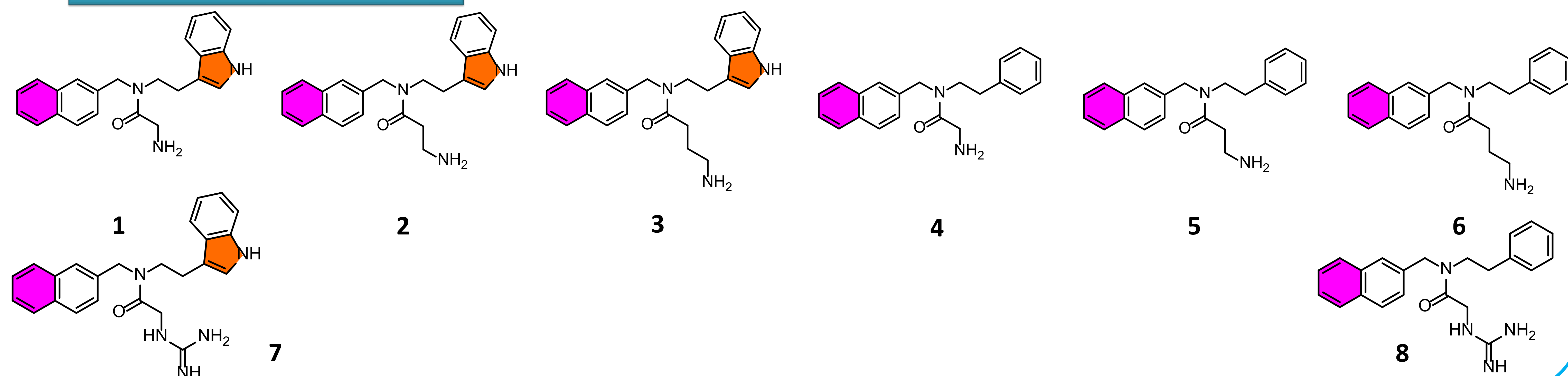
In this work, we utilized design of peptoids to avoid drawbacks associated with natural peptides. The peptoid with a naphthyl ring increases the hydrophobicity of the compound, while the indole ring will promote membrane permeability. Peptoids have several advantages than peptides such as a large selection of side chains, resistant to proteolysis, better solubility and cell permeability.



General scheme for peptoid synthesis



Antibacterial Peptoids



Conclusions

- The short cationic peptoids resulted in moderate antibacterial activity
- Compound **7**, **8** showed good antibacterial activity against *S. aureus* (**15.6 μM**, **61.2 μM**) compared to the corresponding amine derivative **1** and **6** (**61.2 μM**, **125 μM**).
- The corresponding guanidinium derivatives of other compounds will be tested for antibacterial, mode of action and their cytotoxicity against mammalian cells.

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