

Discovery of novel cystobactamids derivatives as broad potent antibacterial agents

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Cystobactamids, new natural products isolated from Myxobacteria, showed promising biological activities against selected Gram positive and, most notably, also Gram negative bacteria [1]. These novel potential antibiotics possess the unusual structure of an aromatic oligopeptide [1]. In particular, five aromatic, *p*-aminobenzoic acid (PABA)-derived moieties and a central aliphatic amino acid are present. In order to establish structure-activity relationships and to develop more potent inhibitors, different modular syntheses have been established, which allowed late stage modification of various part of the molecular scaffold. In so doing, novel synthetic cystobactamids possessing antibacterial activities in the low µg/mL range against clinically relevant Gram negative bacteria such as *A. baumannii*, *P. aeruginosa* and different species of Enterobacteriaceae have been discovered.

References

1. S. Baumann, J. Herrmann, R. Raju, H. Steinmetz, K. I. Mohr, S. Hüttel, K. Harmrolfs, M. Stadler and R. Müller, *Angew. Chem. Int. Ed.*, **53**, 14605 – 14609 (2014).