IUPAC PROJECT 2002-030-1-300
Fighting Microbial Resistance through Development of new Antimicrobial Agents, directed against New Specific Targets.

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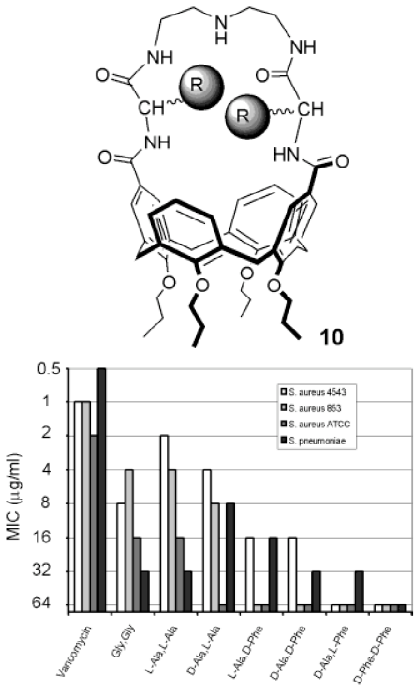
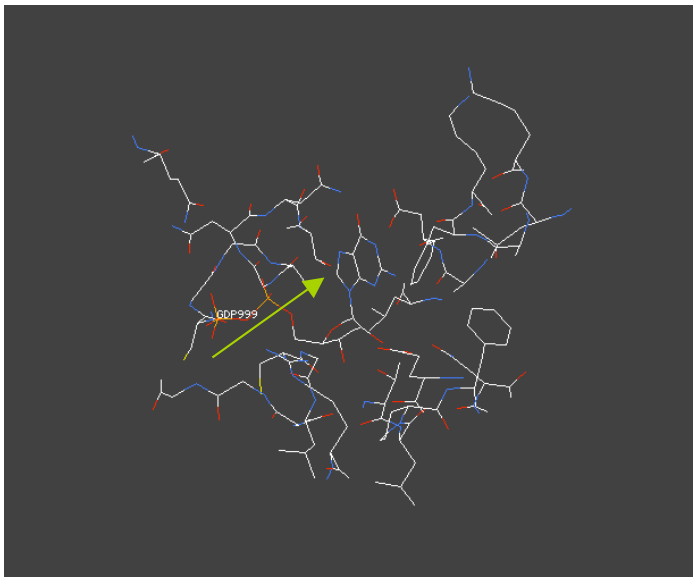


FIGURE 10. Minimum inhibitory concentration (MIC, μg/mL) of macrobicyclic peptidocalix[4]arenes **10** and vancomycin, showing the dependence of antimicrobial activity for **10** on the steric hindrance of R groups (Gly, R = H; Ala, R = CH_3; Phe, R = $CH_2C_6H_5$).

Parma, IT



X-ray structure of bacterial division protein FtsZ, containing the GDP cofactor. Substituents at the 8-position of GDP are expected to inhibit the polymerisation, preventing cell division.

Amsterdam, NL

The increasing resistance of bacteria, viruses and protozoa against the presently existing drugs is of great concern, like the multidrug resistance of M. Tuberculosis (strain W being resistant against 7 tuberculostatic drugs) and the Methicillin Resistant Staph. Aureus. (Hospital bacteria) or Vancomycin resistant Enterococcus.

Since resistance is the result of a normal evolutionary process, research activities in this area will have to continue forever, also to combat new life-threatening types of influenza viruses or SARS. For the last virus at the moment no treatment is available.

The project combines synthetic, biochemical and biological expertise for the design and synthesis of new antimicrobial agents on targets that do not occur in the non-infected human cell.

Selected publications:

S. Mobashery c.s. Chem. Rev. 395-424 (2005), R.Ungaro c.s. Acc. Chem. Res. 246-254 (2003), G.J. Koomen, T. den Blaauwen c.s. Biochemistry 7879-7884 (2005), K.J. Hellingwerf c.s. Eukaryotic Cell 955-965 (2004)