Preface

The genus *Pseudomonas (P.)* is a large group of medically and environmentally important bacteria. A strong interest in the drug discovery community is directed to pathogenic bacteria such as *P. aeruginosa*, as reflected in the large number of publications devoted to original research, reviews, and books devoted to this subject.

In this first issue of *Current Topics in Medicinal Chemistry*, a selection of scholarly *Pseudomonas* research papers is presented by researchers who have been active in the field over many years.

Novel biochemical, microbiological, and analytical developments are reviewed which cover iron chelating siderophores (pyoverdines), the active export mechanism of low molecular weight compounds out of the bacterial cell, and the mechanism of iron uptake into the cell. In this way, medicinal chemists have an updated survey of the fundamentals of the complex problem of multidrug resistance associated with *P. aeruginosa.*

The first contribution in this issue describes the siderophores of the human pathogenic fluorescent pseudomonads. Herbert Budzikiewicz gives an overview of the structural aspects of the variety of siderophores produced and utilized by *P. aeruginosa.*

The biology of the ferri-pyoverdine mediated microbacterial iron uptake is carefully and thoroughly reviewed by Hans Vogel.

A variety of accurate, rapid, and easily-applicable methods for bacterial identification of *Pseudomonas* are discussed and evaluated by Regine Fuchs and co-workers. These methods, termed *siderotyping,* are very important for taxonomical purposes and are based directly on the presence and structural diversity of the siderophores.

The multidrug resistance of *P. aeruginosa* is discussed in detail in the last two contributions. The microbial drug efflux system is highlighted by Keith Poole and colleagues, and its key role for the resistance phenomenon is documented.

Finally, the synthesis of conjugates involving both siderophores and antibiotics is reviewed by Herbert Budzikiewicz as a promising strategy to overcome the resistance of *P. aeruginosa* against treatment with conventional antibiotics.

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