

## **Staffan Normark**

### **CURRICULUM VITAE**

Staffan Normark is born February 28, 1945, in Umeå, Sweden. Bachelor of Medicine 1966; MD 1971, Umeå Institutet. Academic Appointments: Professor 1980-1989, Department of Microbiology, Umeå University. Professor and Department Head 1989-1993, Department of Molecular Microbiology, Washington University School of Medicine. Professor 1993–2012, Karolinska Institutet. Permanent secretary 2010–2015. Royal Swedish Academy of Sciences. Currently, Senior Professor, Karolinska Institutet

Staffan Normark has studied mechanisms by which diverse bacteria are able to colonize host tissues and resist beta-lactam antibiotics. He discovered that beta-lactam antibiotics induce beta-lactamase expression, by increasing production of cell wall fragments (muropeptides) that are taken up into the bacterial cell and sensed by a transcriptional regulator of the beta-lactamase gene. He was the first to dissect in detail the genetic basis of bacterial adhesion. His discoveries led to understanding the biogenesis, structure, and role of P-pili of uropathogenic *E. coli* providing a model and blueprint for receptor-ligand interactions in a number of pathogenic organisms. He discovered that the pilus was a multi-component structure consisting of a stalk and a specialized pilus tip adhesin, and identified key functions of the assembly proteins. Normark also studied the mechanisms for *Helicobacter pylori* colonization and identified fucosylated blood group antigens as gastric receptors for *H. pylori*. In addition, he discovered a novel class of adhesive surface organelles on gram-negative bacteria termed curli, which are biofilm promoting bacterial amyloids, determining aspects of their regulation and nucleation dependent assembly. More recently, he has together with Birgitta Henriques-Normark, forged new frontiers in pneumococcal pathogenesis, including identification and role of two classes of pili for adhesion, horizontal gene transfer and the clonal success of antibiotic resistant strains.