

Laudatory speech for Staffan Normark

[Check against delivery.]

Today we are pleased to award the Robert Koch Medal to Staffan Normark. He is known worldwide for his successful contributions in microbiology and infection research in particular. His investigations were mainly concentrated on the pathogenic properties of bacteria, especially of those of *Escherichia coli*, *Helicobacter pylori*, *Gonococci* and *Salmonella*. He is a world leader in comprehension of the means by which pathogens dock onto cells and was the first to show that the ulcerogenic bacteria *Helicobacter pylori* is capable of docking onto epithelial stomach cells. His work had contributed to the development of new therapies and has led to the development of an experimental vaccine against urinary tract infections. He has recently been primarily occupied with pneumococcal bacteria.

Ladies and Gentlemen,

Staffan Normark is one of the first researchers to clone a gene in Sweden. He had a sure sense for the incredible opportunities that opened up with the new molecular biology instruments. He worked for a long time on the induction of “AmpC-beta-lactamase” in *Escherichia coli* and thus the creation of resistances to antibiotics. Beta-lactamases are bacterial enzymes that are able to split the “betalactam ring” of numerous antibiotics, thereby rendering it inactive. The enzymatic de-activation of antibiotics through beta-lactamases is regarded today as being the most common resistance mechanism.

Another major area of his research is concerned with an analysis of the pathogen-host relationship. The intestinal bacteria *E. coli* is responsible for 80 percent of all bladder inflammations. Staffan Normark investigated the tiny, hairlike “Pili” used by the bacteria for adhering to the cells of the bladder wall. He was also able to describe “Curli” – surface associated amyloid fibres that facilitate film formation of *E. coli* bacteria. His work led to the development of an experimental vaccine against urinary tract infections.

Staffan Normark was the first person to show how *Helicobacter pylori* “docks” onto the epithelial cells in the stomach lining. He came to this realisation shortly after the ground breaking discovery of Robin Warren and Barry Marshall, that *H. pylori* causes stomach ulcers – a discovery for which both researchers were awarded the Nobel prize in 2005 and Staffan Normark was given the honour of making the “Award Ceremony Speech” at the awards.

Staffan Normark is currently continuing his research into host-bacteria interactions as a Senior Professor at the Karolinska Institutet. The projects range from bacterial regulatory systems to innate immune responses in the host. His main research program includes

studies on molecular epidemiology and the pathogenesis of pneumococcal infections. He is also investigating the development of antibacterial resistance.

Ladies and Gentlemen,

Staffan Normark is not only known for his pioneering scientific achievements, he has also invested great energy in the promotion of science and research. He was President of the Swedish Foundation for Strategic Research (SSF) from 1999 to 2005. He was also a member of two organisations assisting with the identification and selection of Nobel prize winners. He was admitted to the Royal Swedish Academy of Sciences in 1987, which is responsible for the selection of the Nobel prize winners in Physics, Chemistry and Economics. He received the post of Standing Secretary on 2010 and retained this position until 2015, during which he had the pleasure of contacting the Nobel Prize winners by telephone to inform them of their selection. As a member of the Nobel Assembly at the Karolinska Institutet, he has been helping to select the Nobel prize winners in Physiology and Medicine since 1995.

Staffan Normark has also greatly assisted in the promotion and support of young scientists. Allowing his students the greatest possible degree of freedom and promotion of innovative ideas have always been important to him. He was honoured for this with the "Nature Award" for his exemplary mentoring in 2012.

He has been extremely committed to bringing the scientific community together on the topic of microbiological pathogenesis and organised conferences on this topic at the University of Umeå in 1983 and 1985.

Ladies and Gentlemen,

Staffan Normark studied medicine at the University of Umeå, where he also received his doctorate. In 1980, aged just 35, he became the youngest professor at the university of his home town Umeå. Among other engagements during this time, he spent a year at Stanford University in California in the laboratory of Stanley Falkow, who was honoured with the Robert Koch Prize in the year 2000. Staffan Normark then occupied the post of Professor and Manager of the Department of Molecular Microbiology at the Washington University in St. Louis from 1989 to 1993. He became a Professor at the Karolinska Institutet in Stockholm in 1993, where he is now a Senior Professor.

He has received numerous prizes and honours. As already mentioned, he is a member of the Royal Swedish Academy, and also a member of the EMBO, the American Academy of

Microbiology, the Academia Europaea and the Swedish Engineering Academy.

Dear Staffan,

It is a great pleasure to have you here today and I am very pleased to be the first to offer you my congratulations for this prize!