Abstract: Nils Lycke’s group

**Group leader:** Nils Lycke (Professor, MD, Ph.D.)

**Members:** Linda Yrlid (postdoc, Ph.D.), Dubravka Eliasson (postdoc, Ph.D.), Ellen Marks (Ph.D. student), Peter Bergqvist (Ph.D. student), Johan Mattsson (Ph.D. student), Annemarie Hasselberg (Ph.D. student), Lena Ekman (technichian), Karin Schön (technichian) and Anneli Stensson (technichian).

We have pioneered the development of cholera toxin (CT) derived immunomodulators and have acquired patents for a family of unique mucosal modulators and adjuvants, based on the CTA1-DD gene fusion protein. This molecule capitalizes on the ADP-ribosylating function of the CT A1-subunit, which is expressed together with a dimer of fragment D from the *Staph. aureus* proteinA. The CTA1-DD has been found to target cells of the innate immune system with little reactogenic effect on the site of injection or administration. Thus, the CTA1-DD is a non-toxic enzyme-dependent highly efficacious adjuvant system for a wide range of immune responses including priming of CD4 T cells, CTL and antibody responses. Enzymatically inactive mutants on the other hand are effective inducers of antigen-specific T cell tolerance and are currently exploited in various anti-inflammatory treatments. Moreover, we have developed novel formulations which incorporate CTA1-DD into immune stimulating complexes (ISCOMs). These adjuvant vectors have been found highly effective for a large number of candidate vaccines and currently feasibility studies with influenza virus, rota virus, tuberculosis, *Helicobacter pylori* and HIV-vaccines are ongoing. Clinical trials with the CTA1-DD adjuvant are planned for 2007 and GMP-material should be available by late 2006. Other areas of intense research in the group include basic studies of IgA B cell development in the gastro-intestinal tract, female genital tract T-cell immunity and infections caused by *Chlamydia trachomatis*, or gastric infections with *Helicobacter pylori* and important role of CD4 effector T cells in the afflicted gastric mucosa.

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J. Immunol. Submitted for publication , 2010
Curriculum Vitae

Name: Nils Yngve Lycke
Born: February 21, 1954, Stockholm, Sweden
Nationality: Swedish
Civil status: Married, four children

Education and degrees:
- Medical candidate (M.B.) 1976
- Medical licentiate (M.D.) 1981
- Certified physician 1983
- Doctor of medicine (PhD) 1986
- Docent 1988
- Professor in Clinical Immunology, Göteborg Univ. 2000

Main positions held:
- Assistant professor (4 years) with The Swedish Medical Research Council 870101-911231
- Associate professor (3 years)
  Medical Faculty, Univ.of Göteborg. 920101-941231
  Swedish Medical Research Council 3+3 years 950101-000631
  Head of Department Clinical Immunology
  Sahlgrenska University Hospital 000701-....
  Head of Department Clin. Immunol/Transfusion medicine 061101-091231
  Director of SSF-research center MIVAC 060101-

Post doc. training:
- Winner of an NIH International Fogarty Fellowship in Immunology. With Dr. Warren Strober's, NIAID, NIH, USA 870801-880801

Awards:
- Awarded the Procordia Research Foundation Stipend 1990 and 1991
- Swedish Foundation for Strategic Research Mucosal Immunobiology & Vaccine Center (MIVAC) 2006-

Visiting fellowship awards:
- Dr Greg Harriman, Houston and Dr John Nedrud, Cleveland have each spent a year as MFR visiting-fellow 1990 and 1994

Consultancy:
- I have been/ am the scientific advisor to Pharmacia, Hässle, AstraZeneca, Arexis AB, Biovitrum AB 1992/2002-

Organizer:
- Main organizer of the
  26th Scandinavian Society for Immunology Congress/Göteborg, 1995
  International IBD meeting/Göteborg 1997
  Luminal factors in health & disease/Göteborg 1998
  1st Int. meeting on cytokines and chemokines/NIH, USA 1999
  2nd European Mucosal Immunology,EMIG ,meeting 2000
  Scientific Committee for the IUIS World Congress of Immunology in Stockholm 2001
  Society for Mucosal Immunology, SMI, annual meeting in Paris 2003
  1st International MIVAC conference 2008

Teaching:
- Lecturer and responsible for Immunology for Life science, medical and dental students at the University of Göteborg. 860101-2000
- Member of Utbildningsnämnden/Programnämnden Sahlgrenska Akademien 2000-2005
- Principal supervisor for 13 successful dissertations
Committee work and Memberships:

- Active member of the steering committee for New Vaccines and Delivery systems, WHO, Geneva, 1997-2000
- Member of the steering committee for Mucosal Immunology and adjuvants at the WHO, 1997-2001
- Member of the Swedish Society of Microbiologists, 1992-
- Member of the Board of Scandinavian Societies of Immunologists, SWIM, since 1997-
- Editor of Immunology, BSI 1997-2000
- Member of the American Association of Immunologists, AAI and FASEB 1989-
- Swedish Medical Council (MFR) priority committee for PK Micro 1 1998-2004
- Swedish Cancer Foundation (Cancerfonden) priority committee for Immunol PKC 1999-2005
- STINT evaluation committee for medicine 2002-2005
- Member of the International Society for Mucosal Immunology, SMI, European councillor and associate editor for the SMI membership MIU letter 2003-2005

Activities:

- Coordinator of a EU-project grants
  - EU-project Adjuvants 4th framework 1998-2000
  - EU-project Mucosal adjuvants, 5th framework 2000-2002
  - EU-project ISCOTB, mucosal vaccines, 5th framework 2002-2004
- Partner of EU-project grants
  - EU-project partner MUCIMMUN 2003-2005
  - EU-project partner MUVAPRED, 6th framework 2004-2008
  - EU-project partner COOP-Universal Vaccine 2005-2007

Invited speaker, key note address and chairman at:
- International meetings on Mucosal Immunology and Infectious Diseases, such as the Keystone symposia, The Mucosal Immunology Congress, the World Congress of Immunology, national societies such as BSI, German and Irish immunology societies and many others.

Member of the editorial board:
- Cellular Immunology, Human Vaccines, Scand. J. Immunol, Immunology and Mucosal Immunology.

Primary reviewer of papers to:

PhD students:
- Elisabeth Hörnqvist (dissertation May 1994)
- Michael Vajdy (dissertation May 1995)
- Martin Kjerrulf. (dissertation April 1998)
- Dubravka Grdic (dissertation Oct. 1999)
- Eva Gärdby (dissertation Sept. 2000)
- Anna Eriksson (dissertation Sept. 2005)
- Anja Helgeby (dissertation Sept. 2006)
- Peter Bergqvist (dissertation Sept. 2009)
- Ellen Marks (dissertation Okt. 2009)
- Annemari Hasselberg (dissertation Dec. 2009)
- Johan Mattsson (planned for 2011)

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