

Prof. Kirsten Sandvig

is associated with Dept. of Biosciences, University of Oslo, Norway and she is heading a research group at Institute for Cancer Research, The Norwegian Radium Hospital, Oslo University Hospital. The Norwegian Radium Hospital is the main cancer hospital in Norway. Sandvig's group, counting ~20 members from different countries, is interested in the mechanisms of endocytosis, intracellular transport and secretion. In some of our studies we are using protein toxins such as ricin and Shiga toxins, which are well established as markers for studies of membrane traffic, and which can be used as agents in cancer diagnosis and therapy. Sandvig has been studying all steps of toxin entry, and the group was the first to publish that a molecule can be transported all the way from the cell surface, to the Golgi and the endoplasmic reticulum (Sandvig et al., Nature 1992). Since then we have contributed with a number of studies concerning the molecular mechanisms of toxin entry, and we have recently by using mass spectrometry of cellular lipids correlated toxin entry with changes in lipid species (for review see Sandvig et al., Progr. Lipid Res., 2014). We have described several conditions that lead to protection against Shiga toxins (for review, see Kavaliauskiene et al., Toxins, 2017). Our expertise in intracellular transport is also applied to investigate uptake of nanoparticles, and we have obtained a large 5-year grant (Biodegradable nanoparticles in cancer diagnosis and therapy) from the Norwegian Research Council to build national competence in nanomedicine (running to the end of 2018). This project involves collaboration between 10 Norwegian research groups covering synthesis of nanoparticles, *in vitro* and *in vivo* biology studies, *in vivo* imaging and clinical studies. In addition, international collaboration is included. We also characterize exosomes from prostate cancer cells and prostate cancer patients with the goal of detecting lipid and protein biomarkers. Our research spans all the way from basic to translational medicine, including innovation. We aim at providing a rational basis for diagnosis, treatment and prevention of disease. The group has extensive national and international collaboration.

EDUCATION: M.Sci. from The Technical University of Norway, Trondheim; Ph.D. from the Medical Faculty, University of Oslo, Norway. Research visits abroad at University of Michigan and at the biological laboratories, Harvard Cambridge, Mass. USA.

SCIENTIFIC ACTIVITY: Published more than 300 articles, supervised 25 Ph.D. students and a large number of master students. Sandvig has been invited as plenary speaker at more than 100 international meetings, and the work is heavily cited, Hirsch index is 72.

AWARDS AND HONOURS: Anders Jahres Medical Prize for young researchers, 1989 (first woman to receive this prize); The Norwegian Research Councils research prize, 1990; Member of the Norwegian Academy of Science and Letters, 1993; Stiansens Biomedical Research Prize, 1995; King Olav V's Cancer Research Prize, 1998; Member of EMBO (European Molecular Biology Organization), 1998; Member of Academia Europea from 2002; Honorary Doctor at the University of Copenhagen, Denmark, 2007; Member of the American Academy of Microbiology, 2010; The Fridjof Nansen Award for outstanding research in science and medicine, 2014; Oslo University Hospital Prize, 2017.