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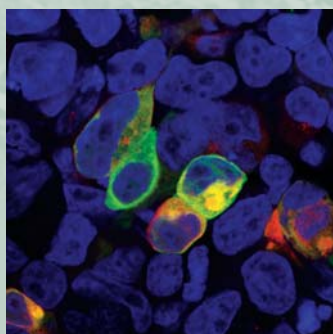


## Laboratory of Molecular Immunology

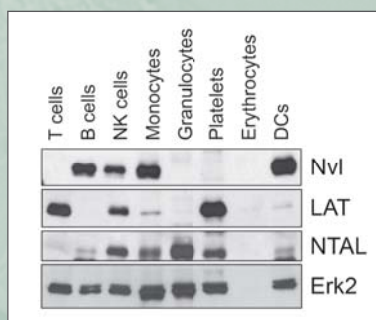
Transmembrane adaptor proteins, membrane rafts



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Subcellular localization of a novel adaptor, PRR7 (red), as compared to PSD-95 (green)



Expression of transmembrane adaptors Nv1, LAT, NTAL in various types of blood cells

## Research topics

In recent years a major topic of our laboratory has been signalling molecules present in membrane rafts, namely several transmembrane adaptor proteins discovered previously by us (PAG/Cbp, NTAL/LAB, LIME) and their involvement in immunoreceptor signalling. In 2008 we worked on elucidation of the structure and function of an apparently novel type of “heavy” rafts, differing from the “classical” ones by higher protein-lipid ratio and containing a number of transmembrane proteins. We continued our studies on several novel raft-associated transmembrane adaptors (LST1A, PRR7, “Nv1”), on receptor phosphatase CD148, and collaborated on several studies concerning membrane rafts and their components. Furthermore, we produced a number of novel monoclonal antibodies as valuable research tools, e.g. those to TFG, H-Ras, CD148, mouse LIME, drebrin.

### Current grant support

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### Selected recent papers

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2. Iwaki S, Spicka J, Tkaczyk C, Jensen BM, Furumoto Y, Charles N, Kovarova M, Rivera J, Horejsi V, Metcalfe DD, Gilfillan AM. Kit- and FcεRI-induced differential phosphorylation of the transmembrane adaptor molecule NTAL/LAB/LAT2 allows flexibility in its scaffolding function in mast cells. *Cell Signal.* 2008;20:195-205.
3. Khunkaewla P, Schiller HB, Paster W, Leksa V, Cermák L, Andera L, Horejsi V, Stockinger H. LFA-1-mediated leukocyte adhesion regulated by interaction of CD43 with LFA-1 and CD147. *Mol Immunol.* 2008;45:1703-1711.
4. Veracini L, Simon V, Richard V, Schraven B, Horejsi V, Roche S, Benistant C. The Csk-binding protein PAG regulates PDGF-induced Src mitogenic signaling via GM1. *J Cell Biol.* 2008;182:603-614.
5. Wu W, Slaastad HS, de la Rosa Carrillo D, Frey T, Tjonnfjord GE, Borette E, Aasheim HC, Horejsi V, Lund-Johansen F. Antibody array analysis with label-based detection and resolution of protein size. *Mol Cell Proteomics.* Epub Sep 16, 2008.



Scheme of receptor phosphatase CD148