



Unit Director

Bruno Goud

Unit Deputy Director

Graça Raposo

The mission of this unit is to understand the biogenesis of the cell compartments and the molecular mechanisms that govern normal cellular functions.

The main research themes of the unit include:

- Transport pathways between compartments,
- The dynamics of the actin- and microtubule-based cytoskeletons,
- Three-dimensional structures of molecular motors,
- Mechanisms of cell division and cell migration,
- The mechanisms involved in establishing the polarity of epithelia and their differentiation,
- Signalling pathways associated with tumour progression in several mouse models and human tumours,
- Regulation of adhesive systems during morphogenesis and development.

Key publications

Year of publication 2017

Anand Patwardhan, Sabine Bardin, Stéphanie Miserey-Lenkei, Lionel Larue, Bruno Goud, Graça



UMR144 – Subcellular Structure and Cellular Dynamics Multiscale Physics-Biology-Chemistry and cancer

Raposo, Cédric Delevoye (2017 Jun 14)

Routing of the RAB6 secretory pathway towards the lysosome related organelle of melanocytes.

Nature communications : 15835 : [DOI : 10.1038/ncomms15835](https://doi.org/10.1038/ncomms15835)

Fachinetti D, Logsdon GA, Abdullah A, Selzer EB, Cleveland DW, Black BE (2017 Jan 9)

CENP-A Modifications on Ser68 and Lys124 Are Dispensable for Establishment, Maintenance, and Long-Term Function of Human Centromeres.

Dev Cell : 40 : 104-113 : [DOI : 10.1016/j.devcel.2016.12.014](https://doi.org/10.1016/j.devcel.2016.12.014)

Year of publication 2016

Sebastian Hoffmann, Marie Dumont, Viviana Barra, Peter Ly, Yael Nechemia-Arbely, Moira A McMahon, Solène Hervé, Don W Cleveland, Daniele Fachinetti (2016 Nov 24)

CENP-A Is Dispensable for Mitotic Centromere Function after Initial Centromere/Kinetochore Assembly.

Cell reports : 2394-2404 : [DOI : 10.1016/j.celrep.2016.10.084](https://doi.org/10.1016/j.celrep.2016.10.084)

Sirigu S, Hartman J, Planelles-Herrero VJ, Ropars V, Clancy S, Wang X, Chuang G, Qian X, Lu P-P, Barrett E, Rudolph K, Royer C, Morgan B, Stura EA, Malik FI, Houdusse A (2016 Nov 4)

Highly selective inhibition of myosin motors provides the basis of potential therapeutic application.

Proceedings of the National Academy of Sciences of the United States of America : 201609342 : [DOI : 10.1073/pnas.1609342113](https://doi.org/10.1073/pnas.1609342113)

Anne Houdusse, H Lee Sweeney (2016 Oct 9)

How Myosin Generates Force on Actin Filaments.

Trends in biochemical sciences : [DOI : S0968-0004\(16\)30152-9](https://doi.org/10.1016/j.tics.2016.09.004)

Pylypenko O, Welz T, Tittel J, Kollmar M, Chardon F, Malherbe G, Weiss S, Michel C, Samol-Wolf A, Grasskamp A, Hume A, Goud B, Baron B, England P, Titus MA, Schwillle P, Weidemann T, Houdusse A, Kerkhoff E (2016 Sep 14)

Coordinated recruitment of Spir actin nucleators and myosin V motors to Rab11 vesicle membranes

eLife : 5 : e17523 : [DOI : 10.7554/eLife.17523](https://doi.org/10.7554/eLife.17523)