



Unit Director

Olivier Delattre

Unit Deputy Director

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Teams in this unit study various aspects of tumour development. Two main strategies are being developed:

- **the direct study of human malignancies to better understand their physiopathological mechanisms,**
- **the uses experimental models (cells or animals) to address specific aspects of oncogenesis.**

A variety of genetic methods including microarray, genotyping and next-generation sequencing analyses are developed to characterise human tumours, as well as molecular biology, cell biology and transgenesis approaches to create and investigate models are being used.

The main research themes of the unit include:

- The link between oncogenesis, stemness and cell differentiation, especially in neural and mesenchymal cell lineages, with the goal of establishing similarities and differences between the biology of the tumour cells and their corresponding normal cells,
- The genetic alterations in cancer cells, in particular the mechanisms of genetic instability that

- may be a cause or a consequence of tumour development,
- The role of oxidative stress in angiogenesis, cell aging and tumour development,
 - The changes in intracellular traffic and in the cytoskeleton that are associated with malignant transformation.

Key publications

Year of publication 2019

Manuel Rodrigues, Lenha Mobuchon, Alexandre Houy, Samar Alsafadi, Sylvain Baulande, Odette Mariani, Benjamin Marande, Khadija Ait Rais, Monique K Van der Kooij, Ellen Kapiteijn, Sieta Gassama, Sophie Gardrat, Raymond L Barnhill, Vincent Servois, Rémi Dendale, Marc Putterman, Sarah Tick, Sophie Piperno-Neumann, Nathalie Cassoux, Gaëlle Pierron, Joshua J Waterfall, Sergio Roman-Roman, Pascale Mariani, Marc-Henri Stern (2019 Jun 23)

Evolutionary Routes in Metastatic Uveal Melanomas Depend on Alterations.

Clinical cancer research : an official journal of the American Association for Cancer Research : 5513-5524 : [DOI : 10.1158/1078-0432.CCR-19-1215](https://doi.org/10.1158/1078-0432.CCR-19-1215)

G Gentric, Y Kieffer, V Mieulet, O Goundiam, C Bonneau, F Nemati, I Hurbain, G Raposo, T Popova, MH Stern, V Lallemand-Breitenbach, S Müller, T Cañeque, R Rodriguez, A Vincent-Salomon, H de Thé, R Rossignol, F Mechta-Grigoriou (2019 Jan 5)

PML-Regulated Mitochondrial Metabolism Enhances Chemosensitivity in Human Ovarian Cancers

Cell Metabolism

Year of publication 2018

Forget Antoine, Martignetti Loredana, Puget Stéphanie, Calzone Laurence, Brabetz Sebastian, Picard Daniel, Montagud Arnau, Liva Stéphane, Sta Alexandre, Dingli Florent, Arras Guillaume, Rivera Jaime, Loew Damarys, Besnard Aurore, Lacombe Joëlle, Pagès Mélanie, Varlet Pascale, Dufour Christelle, Yu Hua, L. Mercier Audrey, Indersie Emilie, Chivet Anaïs, Leboucher Sophie, Sieber Laura, Beccaria Kevin, Gombert Michael, D. Meyer Frauke, Qin Nan, Bartl Jasmin, Chavez Lukas, Okonechnikov Konstantin, Sharma Tanvi, Thatikonda Venu, Bourdeaut Franck, Pouponnot Celio, Ramaswamy Vijay, Korshunov Andrey, Borkhardt Arndt, Reifemberger Guido, Pouillet Patrick, D. Taylor Michael, Kool Marcel, M. Pfister Stefan, Kawauchi Daisuke, Barillot Emmanuel, Remke Marc, Ayrault Olivier (2018 Sep 10)

Aberrant ERBB4-SRC Signaling as a Hallmark of Group 4 Medulloblastoma Revealed by Integrative Phosphoproteomic Profiling

Cancer Cell : 34 : 379-395 : [DOI : 10.1016/j.ccell.2018.08.002](https://doi.org/10.1016/j.ccell.2018.08.002)



U830 Cancer, Heterogeneity, Instability and Plasticity (CHIP) Integrative Tumour Biology, Immunology and Environment

Mitchell J Machiela, Thomas G P Grünewald, Didier Surdez, Stephanie Reynaud, Olivier Mirabeau, Eric Karlins, Rebeca Alba Rubio, Sakina Zaidi, Sandrine Grossetete-Lalami, Stelly Ballet, Eve Lapouble, Valérie Laurence, Jean Michon, Gaelle Pierron, Heinrich Kovar, Nathalie Gaspar, Udo Kontny, Anna González-Neira, Piero Picci, Javier Alonso, Ana Patino-Garcia, Nadège Corradini, Perrine Marec Bérard, Neal D Freedman, Nathaniel Rothman, Casey L Dagnall, Laurie Burdett, Kristine Jones, Michelle Manning, Kathleen Wyatt, Weiyin Zhou, Meredith Yeager, David G Cox, Robert N Hoover, Javed Khan, Gregory T Armstrong, Wendy M Leisenring, Smita Bhatia, Leslie L Robison, Andreas E Kulozik, Jennifer Kriebel, Thomas Meitinger, Markus Metzler, Wolfgang Hartmann, Konstantin Strauch, Thomas Kirchner, Uta Dirksen, Lindsay M Morton, Lisa Mirabello, Margaret A Tucker, Franck Tirode, Stephen J Chanock, Olivier Delattre (2018 Aug 11)

Genome-wide association study identifies multiple new loci associated with Ewing sarcoma susceptibility.

Nature communications : 3184 : [DOI : 10.1038/s41467-018-05537-2](https://doi.org/10.1038/s41467-018-05537-2)

Watson, S., Perrin, V., Guillemot, D., Reynaud, S., Coindre, J.-M., Karanian, M., Guinebretière, J.-M., Freneaux, P., Le Loarer, F., Bouvet, M., Galmiche-Rolland, L., Larousserie, F., Longchamp, E., Ranchere-Vince, D., Pierron, G., Delattre, O., and Tirode, F (2018 Mar 30)

Transcriptomic definition of molecular subgroups of small round cell sarcomas

The Journal of Pathology : 245 : 29, 40 : [DOI : doi.org/10.1002/path.5053](https://doi.org/10.1002/path.5053)

Givel AM, Kieffer Y, Scholer-Dahirel A, Sirven P, Cardon M, Pelon F, Magagna I, Gentric G, Costa A, Bonneau C, Mieulet V, Vincent-Salomon A, Mechta-Grigoriou F (2018 Mar 13)

miR200-regulated CXCL12 β promotes fibroblast heterogeneity and immunosuppression in ovarian cancers.

Nature communications : [DOI : 10.1038/s41467-018-03348-z](https://doi.org/10.1038/s41467-018-03348-z).