



Unit Director, DRE INSERM
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The Curie Institute is a cancer research and care centre characterized by interdisciplinarity. The Cellular and Chemical Biology department cherishes this spirit by uniting within the same perimeter researchers from various backgrounds, notably organic chemistry and cell biology. It is our objective to address the timeliest challenges in life sciences and biomedicine from unique angles that become accessible due to a real integration between disciplines. Work in our teams covers fields of fundamental research that range from chemistry to biology, including endocytosis, signaling, intracellular trafficking, membrane mechanics and mechanotransduction, small molecule lead discovery, and chromatin biology. Well cited publications in highly visible journals, invitations to and the organization of prestigious international conferences, and excellent track record of fund raising are the hallmarks of a dynamic research environment. Our applied research efforts are geared at providing novel therapeutic solutions for the clinical management of cancer, notable in the fields of targeted delivery of therapeutic compounds to tumors (including lysosomotropic targeting), immunotherapy, chromatin-targeting, and targeting iron homeostasis. The past and present creation of start-up companies by unit members and ongoing contracts with industry and biotech testify for a vibrant technology transfer environment within the unit.

The unit is also cofounder and partner of the [Institut Curie chemical Library platform](#).

Key publications

Year of publication 2021

Ivashenka# A, Wunder# C, Chambon# V, Sandhoff R, Jennemann R, Dransart# D, Podsypanina K, Lombard B, Loew D, Lamaze C, Poirier F, Gröne HJ, Johannes* L, Shafaq-Zadah*# M (2021 Feb 9)

Glycolipid-dependent and lectin-driven transcytosis in mouse enterocytes

COMMUNICATIONS BIOLOGY Nature : 4 : 173 (2021) : [DOI : 10.1038](#)

Karaki S, Blanc C, Tran T, Galy-Fauroux I, Mougél A, Dransart E, Anson M, Tanchot C, Gibault L, Lepimpec-Barthes F, Darmotte D, Fabre E, Golub* R, Johannes* L, Tartour* E (2021 Jan 24)

CXCR6 deficiency impairs cancer vaccine efficacy and CD8⁺ resident memory T-cell recruitment in head and neck and lung tumors

*J Immunother Cancer*BMJ Journals : [DOI : 10.1136/jitc-2020-001948](https://doi.org/10.1136/jitc-2020-001948)

Year of publication 2020

Küssau T., Van Wyk N., Johansen M.D., Alsarraf H.M.A.B., Neyret A., Hamela C., Sørensen K.K., Thygesen M.B., Beauvineau C., Kremer L., Blaise M. (2020 Nov 4)

Functional Characterization of the N-Acetylmuramyl-I-Alanine Amidase, Ami1, from Mycobacterium abscessus

Cells : 9 : 2410 : [DOI : 10.3390/cells9112410](https://doi.org/10.3390/cells9112410)

Sebastian Müller, Fabien Sindikubwabo , Tatiana Cañeque, Anne Lafon, Antoine Versini, Bérange Lombard, Damarys Loew, Ting-Di Wu, Christophe Ginestier, Emmanuelle Charafe-Jauffret, Adeline Durand, Céline Vallot, Sylvain Baulande, Nicolas Servant, Raphaël Rodriguez (2020 Oct 1)

CD44 regulates epigenetic plasticity by mediating iron endocytosis

Nature Chemistry : 12 : 929-938 : [DOI : 10.1038/s41557-020-0513-5](https://doi.org/10.1038/s41557-020-0513-5)

Domingues, L., I. Hurbain, F. Gilles-Marsens, J. Sirés-Campos, N. André, M. Dewulf, M. Romao, C. Viaris de Lesegno, A.S. Macé, C. Blouin, C. Guéré, K. Vié, G. Raposo, C. Lamaze, and C. Delevoye (2020 Jun 12)

Coupling of melanocyte signaling and mechanics by caveolae is required for human skin pigmentation

*Nature Communication*Nature : 11 : 2988 (2020) : [DOI : 10.1038/s41467-020-16738-z](https://doi.org/10.1038/s41467-020-16738-z)

Forrester A, Rathjen SJ, Garcia Castillo MD, Bachert C, Couhert A, Tepshi L, Pichard S, Martinez J, Renard H-F, Valades Cruz CA, Dingli F, Loew D, Lamaze C, Cintrat JC, Linstedt AD, Gillet D, Barbier J, Johannes L (2020 May 29)

Functional dissection of the retrograde Shiga toxin trafficking inhibitor Retro-2

*Nature Chemical Biology*Nature : 16 : 327,336 : [DOI : 10.1038/s41589-020-0474-4](https://doi.org/10.1038/s41589-020-0474-4)