



PUBLICATIONS

DEPARTMENT SIGNALING THROUGH CHROMATIN

> Team ARNOULT / RAY (Genetic, Epigenetic and Therapies of infertility)

SPINK2 deficiency causes infertility by inducing sperm defects in heterozygotes and azoospermia in homozygotes. Kherraf ZE, Christou-Kent M, Karaouzene T, Amiri-Yekta A, Martinez G, Var-gas AS, Lambert E, Borel C, Dorphin B, Aknin-Seifer I, Mitchell MJ, Metzler-Guillemain C, Escoffier J, Nef S, Grepillat M, Thierry-Mieg N, Satre V, Bailly M, Boitrelle F, Pernet-Gallay K, Hennebicq S, Fauré J, Bottari SP, Coutton C, Ray P, Arnoult C. [EMBO Mol Med](#). 2017 Aug;9(8):1132-1149. doi: 10.15252/emmm.201607461.

Spermaurin, an La1-like peptide from the venom of the scorpion *Scorpio maurus palmatus*, improves sperm motility and fertilization in different mammalian species. Martinez G, Hograindleur JP, Voisin S, Abi Nahed R, Abd El Aziz TM, Escoffier J, Bessonnat J, Fovet CM, De Waard M, Hennebicq S, Aucagne V, Ray PF, Schmitt E, Bulet P, Arnoult C. [Mol Hum Reprod](#). 2016 Dec 8. doi: 10.1093/molehr/gaw075.

Whole-exome sequencing of familial cases of multiple morphological abnormalities of the sperm flagella (MMAF) reveals new DNAH1 mutations. Amiri-Yekta A, Coutton C, Kherraf ZE, Karaouzene T, Le Tanno P, Sanati MH, Sabbaghian M, Almadani N, Sadighi Gilani MA, Hosseini SH, Bahrami S, Daneshpour A, Bini M, Arnoult C, Colombo R, Gourabi H, Ray PF. [Hum Reprod](#). 2016 Oct 26.

Single gene defects leading to sperm quantitative anomalies. Mitchell MJ, Metzler-Guillemain C, Toure A, Coutton C, Arnoult C, Ray PF. [Clin Genet](#). 2016 Oct 25. doi: 10.1111/cge.12900.

Genetic abnormalities leading to qualitative defects of sperm morphology or function. Ray PF, Toure A, Metzler-Guillemain, Mitchell MJ, Arnoult C, Coutton C. [Clin Genet](#). 2016 Oct 25. doi: 10.1111/cge.12905.

> Team CALLANAN (Genetics and Epigenetics of lymphoid cancers)

Haploinsufficiency for NR3C1, the gene encoding the glucocorticoid receptor, in blastic plasmacytoid dendritic cell neoplasms. Emadali A, Hoghoughi N, Duley S, Hajmirza A, Verhoeyen E, Cosset FL, Bertrand P, Roumier C, Roggy A, Suchaud-Martin C, Chauvet M, Bertrand S, Hamaidia S, Rousseaux S, Josserand V, Charles J, Templier I, Maeda T, Bruder-Costa J, Chaperot L, Plumas J, Jacob MC, Bonnefoix T, Park S, Gressin R, Tensen CP, Mecucci C, Macintyre E, Leroux D, Brambilla E, Nguyen-Khac F, Luquet I, Penther D, Bastard C, Jardin F, Lefebvre C, Garnache F, Callanan M. [Blood](#). 2016 Jun 16;127(24):3040-53. doi: 10.1182/blood-2015-09-671040. Epub 2016 Apr 8.

> Team BEDNAR (Chromatin and Epigenetics)

B1 integrin dependent Rac/group I PAK signaling mediates YAP activation of Yes associated protein 1 (YAP1) via NF2/merlin. Sabra H, Brunner M, Mandati V, Wehrle Haller B, Lallemand D, Ribba AS, Chevalier G, Guardiola P, Block MR, Bouvard D. [J Biol Chem](#). 2017 Sep 29. pii: jbc.M117.808063. doi: 10.1074/jbc.M117.808063. [Epub ahead of print]

Structure and Dynamics of a 197 bp Nucleosome in Complex with Linker Histone H1 Jan Bednar, Isabel Garcia-Saez, Ramachandran Boopathi, Amber R. Cutter, Gabor Papai, Anna Reymer, Sajad H. Syed, Imtiaz Nisar Lone, Ognyan Tonchev, Corinne Crucifix, Hervé Menoni, Christophe Papin, Dimitrios A. Skoufias, Hitoshi Kurumizaka, Richard Lavery, Ali Hamiche, Jeffrey J. Hayes, Patrick Schultz, Dimitar Angelov, Carlo Petosa, Stefan Dimitrov. [Molecular Cell](#). Published: May 4, 2017. vol 66. issue.

The flexible ends of CENP-A nucleosome are required for mitotic fidelity Roulland, Y., Ourarhni, K., Bednar, J., Boopathi, R., Naidenov, M., Ramos, L., Papin, C., Papai, G., Skoufias, D., Schultz, P., Angelov, D., Hamiche, A. & Dimitrov, S. [Molecular Cell](#), 2016 Aug 3. pii: S1097-2765(16)30281-7. doi: 10.1016/j.molcel.2016.06.023. [Epub ahead of print]

YL1, H2A.Z-specific histone chaperone, required for ATP-dependent deposition of H2A.Z in chromatin Latryck, C., Marek, M., Ourarhni, K, Papin, C., Obri, A., Stoll, Y, Ignatieva, M, Dimitrov, S, Romier, C. & Hamiche, A. [Nature Struct & Mol. Biol.](#) 2016 Apr;23(4):309-16.

FACT assists BER by boosting the remodeling activity of RSC Richard, J.L.C, Shukla, M., Ouararhni, K., Lone, I.N., Roulland, I., Papin, C., Angelov, D., Hamiche, A. & Dimitrov, S. [PLoS Genetics](#) 2016 Jul 28;12(7):e1006221. doi: 10.1371/journal.pgen.1006221. eCollection 2016 Jul.

> **Team KHOCHBIN (Epigenetics and Cell signalling)**

Identity crisis in pulmonary arterial hypertension. Ruffenach G, Bonnet S, Rousseaux S, Khochbin S, Provencher S, Perros F. [Pulm Circ.](#) 2018 Jan-Mar;8(1):2045893217746054. doi: 10.1177/2045893217746054. PMID: 29206084 [PubMed]

Histone variants: essential actors in the male genome programming. Hoghoughi N, Barral S, Vargas A, Rousseaux S, Khochbin S. [J Biochem.](#) 2017 Nov 20. doi: 10.1093/jb/mvx079. [Epub ahead of print] PMID: 29165574

Muscle hypertrophy in hypoxia with inflammation is controlled by bromodomain and extra-terminal domain proteins. Chabert C, Khochbin S, Rousseaux S, Furze R3 Smithers N, Prinjha R, Schlattner U, Pison C, Dubouchaud H. [Sci Rep.](#) 2017 Sep 21;7(1):12133. doi: 10.1038/s41598-017-12112-0.

The Role of Bromodomain Testis-Specific Factor, BRDT, in Cancer: A Biomarker and A Possible Therapeutic Target. Bourova-Flin E, Chuffart F, Rousseaux S, Khochbin S. [Cell J.](#) 2017 Spring;19(Suppl 1):1-8. doi: 10.22074/cellj.2017.5060. Epub 2017 May 17. PMID: 28580303

Histone Variant H2A.L.2 Guides Transition Protein-Dependent Protamine Assembly in Male Germ Cells Sophie Barral, Yuichi Morozumi, Hiroki Tanaka, Emilie Montellier, Jérôme Govin, Maud de Dieuleveult, Guillaume Charbonnier, Yohann Couté, Denis Puthier, Thierry Buchou, Fayçal Boussouar, Takashi Urahama, François Fenaille, Sandrine Curtet, Patrick Héry, Nicolas Fernandez-Nunez, Hitoshi Shiota, Matthieu Gérard, Sophie Rousseaux, Hitoshi Kuru-mizaka, Saadi Khochbin [Mol Cell](#). 2017 Apr 6;66(1):89-101.e8. doi: 10.1016/j.molcel.2017.02.025. Epub 2017 Mar 30.

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Purification and Analysis of Male Germ Cells from Adult Mouse Testis. Buchou T, Tan M, Barral S, Vitte AL, Rousseaux S, Arechaga J, Khochbin S. [Methods Mol Biol](#). 2017;1510:159-168.

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Dynamic Competing Histone H4 K5K8 Acetylation and Butyrylation Are Hallmarks of Highly Active Gene Promoters. Goudarzi A, Zhang D, Huang H, Barral S, Kwon OK, Qi S, Tang Z, Buchou T, Vitte AL, He T, Cheng Z, Montellier E, Gaucher J, Curtet S, Debernardi A, Charbonnier G, Puthier D, Petosa C, Panne D, Rousseaux S, Roeder RG, Zhao Y, Khochbin S. [Mol Cell](#). 2016 Apr 21;62(2):169-80. doi:10.1016/j.molcel.2016.03.014.

> **Teams KHOCHBIN (Epigenetics and Cell signalling) / LAFANECHERE (Regulation and Pharmacology of the Cytoskeleton)**

The growing landscape of tubulin acetylation: lysine 40 and many more. Sadoul K, Khochbin S. [Biochem J](#). 2016 Jul 1;473(13):1859-68. doi: 10.1042/BCJ20160172.

> **Teams VERDEL (RNA and Epigenetics)**

Bromodomain factors of BET family are new essential actors of pericentric heterochromatin transcriptional activation in response to heat shock. Col E, Hoghoughi N, Dufour S, Penin J, Koskas S, Faure V, Ouzounova M, Hernandez-Vargash H, Reynoird N, Daujat S, Folco E, Vigneron M, Schneider R, Verdel A, Khochbin S, Herceg Z, Caron C, Vourc'h C. [Sci Rep](#). 2017 Jul 14;7(1):5418. doi: 10.1038/s41598-017-05343-8.

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Heat shock factor 1 promotes TERRA transcription and telomere protection upon heat stress. Koskas S, Decottignies A, Dufour S, Pezet M, Verdel A, Vourc'h C, Faure V. [Nucleic Acids Res](#). 2017 Mar 27. doi: 10.1093/nar/gkx208.

DEPARTMENT MICROENVIRONNEMENT, CELL PLASTICITY AND SIGNALING

> Team ALBIGES-RIZO (Cell adhesion dynamics and Differentiation)

ICAP-1 monoubiquitination coordinates matrix density and rigidity sensing for cell migration through ROCK2- MRCK α balance.

Bouin AP, Kyurmurkov A, Régent-Kloeckner M, Ribba AS, Faurobert E, Fournier HN, Bourrin-Reynard I, Manet-Dupé S, Oddou C, Balland M, Planus E, Albiges-Rizo C. [J Cell Sci](#). 2017 Jan 3. pii: jcs.200139. doi: 10.1242/jcs.200139

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b3 integrin-mediated spreading induced by matrix-bound BMP-2 controls Smad signaling in a stiffness-independent manner Laure Fourel, Anne Valat, Eva Faurobert, Raphael Guillot ,Ingrid Bourrin-Reynard, Kefeng Ren, Laurence Lafanechère, Emmanuelle Planus , Catherine Picart and Corinne Albiges-Rizo.. [J Cell Biol](#). 2016 Mar 14;212(6):693-706

> Team COLL (Cancer targets and Experimental therapeutics)

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Plasma Circulating Tumor DNA Levels for the Monitoring of Melanoma Patients: Landscape of Available Technologies and Clinical Applications. Busser B, Lupo J, Sancey L, Mouret S, Faure P, Plumas J, Chaperot L, Leccia MT, Coll JL, Hurbin A, Hainaut P, Charles J. [Biomed Res Int](#). 2017;2017:5986129. doi: 10.1155/2017/5986129. Epub 2017 Apr 6. Review.

Unsuccessful mitosis in multicellular tumour spheroids. Molla A, Couvet M, Coll JL.

Renal Clearable Organic Nanocarriers for Bioimaging and Drug Delivery Kang H, Gravier, J, Bao, K, Wada, K, Hean Lee, J, Baek, Y, Park, G, Gioux, S, Trubin, BP, Coll*, JL, Choi*, HS [Adv Mater](#). 2016 Oct;28(37):8162-8168. doi: 10.1002/adma.201601101. Epub 2016 Jul 14.

Systemic Delivery of Tumor-Targeted Bax-Derived Membrane-Active Peptides for the Treatment of Melanoma Tumors in aHumanized SCID Mouse Model

Karageorgis A, Claron M, Jugé R, Aspord C, ThoreauF, Leloup C, Kucharczak J,Plumas J, Henry M, HurbinA, Verdié P, Martinez J, Subra G, Dumy P, BoturnyD, Aouacheria A, Coll JL [Molecular Therapy](#) (2017)

> **Team EYMIN** (RNA splicing, Cell signaling and Response to therapies)

Nuclear trafficking of EGFR by Vps34 represses Arf expression to promote lung tumor cell survival

Dayde D, Guerard M, Perron P, Hatat A.S, Barrial C, Eymin B and Gazzeri S. [Oncogene](#). 2016 Jul 28;35(30):3986-94.

> **Team GUILLUY**

Mechanotransduction via the nuclear envelope: a distant reflection of the cell surface.

Aureille J, Belaadi N, Guilluy C. [Curr Opin Cell Biol](#). 2016 Oct 26. pii: S0955-0674(16)30171-5. doi: 10.1016/j.ceb.2016.10.003.

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> **Team LAFANECHERE** (Regulation and Pharmacology of the Cytoskeleton)

Vasohibins/SVBP are tubulin carboxypeptidases (TCP) that regulate neuron differentiation. Aillaud C, Bosc C, Peris L, Bosson A, Heemeryck P, Van Dijk J, Le Fric J, Boulan B, Vossier F, Sanman LE, Syed S, Amara N, Couté Y, Lafanechère L, Denarier E, Delphin C, Pelletier L, Humbert S, Bogyo M, Andrieux A, Rogowski K, Moutin MJ. [Science](#). 2017 Nov 16. pii: eaao4165. doi: 10.1126/science.aao4165. [Epub ahead of print] PubMed PMID: 29146868.

LIM kinases: cofilin and beyond

Chloé Prunier, Renaud Prudent, Reuben Kapur, Karin Sadoul, Laurence Lafanechère . [Oncotarget](#), April 2017

LIM Kinase Inhibitor Pyr1 Reduces the Growth and Metastatic Load of Breast Cancers

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DEPARTMENT PREVENTION & THERAPY OF CHRONIC DISEASES

> Team BOTTE (Apicolipd)

TgPL2, a patatin-like phospholipase domain-containing protein, is involved in the maintenance of apicoplast lipids homeostasis in Toxoplasma.

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Amiar S, MacRae JI, Callahan DL, van Dooren GG, Shears MJ, Dubois D, Cesbron-Delauw MF, Maréchal E, McConville MJ, McFadden GI, Yamaryo-Botté Y*, Botté CY*. [PLOS Pathogens](#), 4 août 2016.

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> Team CHAPEROT (Immunobiology and Immunotherapy in Chronic diseases)

Systemic Delivery of Tumor-Targeted Bax-Derived Membrane-Active Peptides for the Treatment of Melanoma Tumors in a Humanized SCID Mouse Model Karageorgis A, Claron M, Jugé R, Aspod C, Thoreau F, Leloup C, Kucharczak J, Plumas J, Henry M, Hurbin A, Verdié P, Martinez J, Subra G, Dumy P, Boturyn D, Aouacheria A, Coll JL [Molecular Therapy](#) (2017)

> Team HAKIMI (Host-pathogen interactions & Immunity to infections)

Modifications at K31 on the lateral surface of histone H4 contribute to genome structure and expression in apicomplexan parasites Fabien Sindikubwabo Shuai Ding Tahir Hussain Philippe Ortet Mohamed Barakat Sebastian Baumgarten Dominique Cannella Andrés Palencia Alexandre Bougdour Lucid Belmudes Yohann Couté Isabelle Tardieux Cyrille Y Botté Artur Scherf Mohamed-ali Hakimi [Elife](#). 2017 Nov 4;6. pii: e29391. doi: 10.7554/eLife.29391.

Targeting Toxoplasma gondii CPSF3 as a new approach to control toxoplasmosis.

Andrés Palencia, Alexandre Bougdour, Marie-Pierre Brenier-Pinchart, Bastien Touquet, Rose-Laurence Bertini, Cristina Sensi, Gabrielle Gay, Julien Vollaire, Véronique Josserand, Eric Easom, Yvonne R Freund, Hervé Pelloux, Philip J Rosenthal, Stephen Cusack, Mohamed-Ali Hakimi. [EMBO Molecular Medicine](#) (2017) e201607370 - DOI 10.15252/emmm.201607370

Structural basis for the subversion of MAP kinase signalling by an intrinsically disordered parasite secreted agonist. Erika Pellegrini, Andrés Palencia, Laurence Braun, Ulrike Kapp, Alexandre Bougdour, Hassan Belrhali, Matthew W. Bowler, Mohamed-Ali Hakimi. *Structure*, published online 23 November 2016. DOI: [10.1016/j.str.2016.10.011](https://doi.org/10.1016/j.str.2016.10.011)

Structural characterization of antibiotic self-immunity tRNA synthetase in plant plant tumour biocontrol agent.

Chopra S, Palencia A, Virus C, Schulwitz S, Temple BR, Cusack S, Reader J. *Nat Commun*. 2016 Oct 7;7:12928. doi: [10.1038/ncomms12928](https://doi.org/10.1038/ncomms12928).

> **Team HAINAUT (Tumor molecular pathology and Biomarkers)**

Training the Next Generation of Biobankers: A Two-Year Master's Course in the Management of Biobanks. Gormally E, Hardy I, Caboux E, di Donato JH, Hainaut P, Hofman P. *Biopreserv Biobank*. 2017 Oct;15(5):438-450. doi: [10.1089/bio.2017.0002](https://doi.org/10.1089/bio.2017.0002). Epub 2017 Sep 18. PMID: 28922617

Higher-than-expected population prevalence of potentially pathogenic germline TP53 variants in individuals unselected for cancer history.

de Andrade KC, Mirabello L, Stewart DR, Karlins E, Koster R, Wang M, Gapstur SM, Gaudet MM, Freedman ND, Landi MT, Lemonnier N, Hainaut P, Savage SA, Achatz MI. *Hum Mutat*. 2017 Sep 1. doi: [10.1002/humu.23320](https://doi.org/10.1002/humu.23320). [Epub ahead of print] PMID: 28861920

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Buonaguro FM, Pauza CD, Tornesello ML, Hainaut P, Franco R, Tommasino M. *Biomed Res Int*. 2017;2017:7362721. doi: [10.1155/2017/7362721](https://doi.org/10.1155/2017/7362721). Epub 2017 Jun 18. No abstract available. PMID: 28698877

Young adult survivors of childhood acute lymphoblastic leukemia show evidence of chronic inflammation and cellular aging.

Ariffin H, Azanan MS, Abd Ghafar SS, Oh L, Lau KH, Thirunavakarasu T, Sedan A, Ibrahim K, Chan A, Chin TF, Liew FF, Jeyamogan S, Rosli ES, Baharudin R, Yap TY, Skinner R, Lum SH, Hainaut P. *Cancer*. 2017 Jun 27. doi: [10.1002/cncr.30857](https://doi.org/10.1002/cncr.30857). [Epub ahead of print]

Plasma Circulating Tumor DNA Levels for the Monitoring of Melanoma Patients: Landscape of Available Technologies and Clinical Applications.

Busser B, Lupo J, Sancey L, Mouret S, Faure P, Plumas J, Chaperot L, Leccia MT, Coll JL, Hurbin A, Hainaut P, Charles J. *Biomed Res Int*. 2017;2017:5986129. doi: [10.1155/2017/5986129](https://doi.org/10.1155/2017/5986129). Epub 2017 Apr 6. Review.

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Pooled Analysis of the Prognostic and Predictive Effects of TP53 Comutation Status Combined With KRAS or EGFR Mutation in Early-Stage Resected Non-Small-Cell Lung Cancer in Four Trials of Adjuvant Chemotherapy.

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Recommended Guidelines for Validation, Quality Control, and Reporting of TP53 Variants in Clinical Practice. Leroy B, Ballinger ML, Baran-Marszak F, Bond GL, Braithwaite A, Concin N, Donehower LA, El-Deiry WS, Fenaux P, Gaidano G, Langerød A, Hellstrom-Lindberg E, Iggo R, Lehmann-Che J, Mai PL, Malkin D, Moll UM, Myers JN, Nichols KE, Pospisilova S, Ash-ton-Prolla P, Rossi D, Savage SA, Strong LC, Tonin PN, Zeillinger R, Zenz T, Fraumeni JF Jr, Taschner PE, Hainaut P, Soussi T. [Cancer Res](#). 2017 Mar 15;77(6):1250-1260. doi: 10.1158/0008-5472.CAN-16-2179.

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Targeted deep sequencing of plasma circulating cell-free DNA reveals Vimentin and Fibulin 1 as potential epigenetic biomarkers for hepatocellular carcinoma Reetta Holmila, Athena Sklias, David C. Muller, Davide Degli Esposti, Paule Guilloureau, James Mckay, Suleeporn Sangrajrang, Petcharin Srivatanakul, Pierre Hainaut, Philippe Merle, Zden-ko Herceg, Andre Nogueira da Costa [PLoS One](#). 2017 Mar 23;12(3):e0174265. doi: 10.1371/journal.pone.0174265. eCollection 2017.

Somatic TP53 Mutations in the Era of Genome Sequencing

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Circulating Osteopontin and Prediction of Hepatocellular Carcinoma Development in a Large European Population

Duarte-Salles T, Misra S, Stepien M, Plymoth A, Muller DC, Overvad K, Olsen A, Tjonneland A, Baglietto L, Severi G, Boutron-Ruault MC, Turzanski-Fortner R, Kaaks R, Boeing H, Aleksandrova K, Trichopoulou A, Lagiou P, Bamia C, Pala V, Palli D, Mattiello A, Tumino R, Naccarati A, Bueno-de-Mesquita HB, Peeters PH, Weiderpass E, Quiros JR, Agudo A, Sanchez-Cantalejo E, Ardanaz E, Gavrila D, Dorronsoro M, Werner M, Hemmingsson O, Ohlsson B, Sjöberg K, Wareham NJ, Khaw KT, Bradbury KE, Gunter MJ, Cross AJ, Riboli E, Jenab M, Hainaut P, Beretta L. [Cancer Prev Res \(Phila\)](#). 2016 Jun 23. pii: canprevres.0434.2015

> Team MARCHE (Analytic Immunology of Chronic diseases)

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Sex Differences in Spontaneous Degranulation Activity of Intrahepatic Natural Killer Cells during Chronic Hepatitis B: Association with Estradiol Levels. Macek Jilkova, Z., T. Decaens, A. Marlu, H. Marche, E. Jouvin-Marche, and P.N. Marche. 2017. [Mediators Inflamm](#) 2017:3214917.

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