

## ANNEXE 4 – Produits et activités de la recherche

### CAMPAGNE D'ÉVALUATION 2018-2019 VAGUE E

Nom de l'équipe : **ER1/Embryon et pluripotence : épigénétique et environnement**  
Acronyme : **EPEE**  
Directeur.rice / Responsable d'équipe /de thème pour le contrat en cours : **Nathalie Beaujean (2013-2015)**  
puis **Véronique DURANTHON (2016-2018)**  
Directeur.rice / Responsable d'équipe /de thème pour le contrat à venir : **Véronique DURANTHON**

### I - PRODUCTION DE CONNAISSANCES ET ACTIVITÉS CONCOURANT AU RAYONNEMENT ET A L'ATTRACTIVITE SCIENTIFIQUE

#### 1- Journaux / Revues

##### 2018

1. **Bonnet-Garnier, A.,** Kiêu K., **Aguirre-Lavin, T., Tar K., Flores P., Liu Z., Yang CX., Peynot, N., Chebrou, M., Zhou Q., Dinnyes A., Duranthon, V. and Beaujean, N.,** 2018. Three dimensional analysis of heterochromatin nuclear distribution during rabbit early development. *Chromosoma*, in press.
2. Fabrèges D., **Daniel N., Duranthon V.,** Peyrieras N. 2018. Control of inner cells' proportion by asymmetric divisions and ensuing resilience of cloned rabbit. *Development*, in press.
3. Gamarra, G., Ponsart, C., Lacaze, S., **Nuttinck, F.,** Cordovia, A., Mermillod, P., **Marquant-Le-Guienne, B.,** Monniaux, D., Humblot, P., Ponter, A.A., 2018. Oral propylene glycol modifies follicular fluid and gene expression profiles in cumulus-oocyte complexes and embryos in feed-restricted heifers. *Reprod Fertil Dev*, 30 (3): 417-429.
4. **Tosolini, M., Brochard, V., Adenot, P., Chebrou, M.,** Grillo, G., **Navia, V., Beaujean, N.,** Francastel, C., **Bonnet-Garnier, A. and Jouneau, A.,** 2018. Contrasting epigenetic states of heterochromatin in the different types of mouse pluripotent stem cells. *Scientific Reports*, in press.

##### 2017

5. David, SA., Hennequet-Antier, C., Pannetier, M., **Aguirre-Lavin, T.,** Crochet, S., Bordeau, T., Couroussé, N., Brionne, A., Collin, A., Coustham, V. 2017. An assessment of fixed and native chromatin preparation methods to study histone post-translational modifications at a whole genome scale in skeletal muscle tissue. *Biol Proced Online*, 19: 10.
6. Duchesne, A., Vaiman, A., Castille, J., Beauvallet, C., Gaignard, P., Floriot, S., Rodriguez, S., Vilotte, M., **Boulanger, L.,** Passet, B., Albaric, O., Guillaume, F., Boukadiri, A., Richard, L., Bertaud, M., Timsit, E., Guatteo, R., Jaffrésic, F., Calvel, P., Helary, L., Mahla, R., Esquerré, D., Péchoux, C., Liuu, S., Vallat, J-M., Boichard, D., Slama, A., Vilotte, J-L., 2017. Bovine and murine models highlight novel roles for SLC25A46 in mitochondrial dynamics and metabolism, with implications for human and animal health. *Plos Genet*, 14 (4): e1006597, 30 pages.

7. Elis, S., Oseikria, M., **Vitorino Carvalho, A.**, Bertevello, P.S., Corbin, E., Teixeira-Gomes, A-P., Lecardonnel, J., **Archilla, C.**, **Duranthon, V.**, Labas, V., Uzbekova, S., 2017. Docosaehaenoic acid mechanisms of action on the bovine oocyte-cumulus complex. *J Ovarian Res*, 10 (1): 74.
8. Gomez, E., Martin, D., Carrocera, S., Sanchez-Calabuig, M.J., Gutierrez-Adan, A., Alonso-Guervos, M., **Peynot, N.**, Giraud-Delville, C., Sandra, O., **Duranthon, V.**, Munoz, M., 2017. Expression and localization of artemin in the bovine uterus and embryos. *Theriogenology*, 90: 153-162.
9. Jullien, J., Vodnala, M., Pasque, V., Oikawa, M., Miyamoto, K., Allen, G., David, S. A., **Brochard, V.**, Wang, S., Bradshaw, C., Koseki, H., Sartorelli, V., **Beaujean, N.**, Gurdon, J., 2017. Gene resistance to transcriptional reprogramming following nuclear transfer is directly mediated by multiple chromatin-repressive pathways. *Mol Cell*, 65 (5): 873-884.e8.
10. Lelievre, JM., **Peynot, N.**, **Ruffini, S.**, **Laffont, L.**, **Le Bourhis, D.**, Girard, PM, **Duranthon, V.**, 2017. Regulation of heat-inducible *HSPA1A* gene expression during maternal-to-embryo transition and response to heat in *in vitro*-produced bovine embryos. *Reprod Fertil Dev*, 29 (9): 1868-1881.
11. Munoz, M., Martin, D., Carrocera, S., Alonso-Guervos, M., Mora, M.I., Corrales, F.J., **Peynot, N.**, Giraud-Delville, C., **Duranthon, V.**, Sandra, O., Gomez, E., 2017. Localisation of stem cell factor, stanniocalcin-1, connective tissue growth factor and heparin-binding epidermal growth factor in the bovine uterus at the time of blastocyst formation. *Reprod Fertil Dev.*, 29 (11): 2127-2139.
12. **Nuttinck, F.**, **Jouneau, A.**, Charpigny, G., Hue, I., Richard, C., **Adenot, P.**, **Ruffini, S.**, **Laffont, L.**, **Chebrouet, M.**, **Duranthon, V.**, **Marquant-Le Guienne, B.**, 2017. Prosurvival effect of cumulus prostaglandin G/H synthase 2/prostaglandin 2 signaling on biovine blastocyst: impact on in vivo posthatching development. *Biol Reprod*, 96 (3): 531-541.
13. **Ozil, J-P.**, **Sainte-Beuve, T.**, **Banrezes, B.**, 2017. [Mg(2+)]<sub>o</sub>/[Ca(2+)]<sub>o</sub> determines Ca(2+) response at fertilization: tuning of adult phenotype? *Reproduction*, 154 (5): 675-693.
14. Tapponnier, Y., Afanassieff, M., Aksoy, I., Aubry, M., Moulin, A., Medjani, L., Bouchereau, W., Mayère, C., Osteil, P., Nurse-Francis, J., Oikonomakos, I., Joly, T., Jouneau, L., **Archilla, C.**, **Schmaltz-Panneau, B.**, **Peynot, N.**, Barasc, H., Pinton, A., Lecardonnel, J., Gocza, E., Beaujean, N., **Duranthon, V.**, Savatier, P., 2017. Reprogramming of rabbit induced pluripotent stem cells toward epiblast and chimeric competency using Krüppel-like factors. *Stem Cell Res*, 24: 106-117.
15. **Vitorino Carvalho, A.**, **Canon, E.**, Jouneau, L., **Archilla, C.**, **Laffont, L.**, Moroldo, M., **Ruffini, S.**, Corbin, E., Mermillod, P., **Duranthon, V.**, 2017. Different co-culture systems have the same impact on bovine embryo transcriptome. *Reproduction*, 154 (5): 695-710.

## 2016

16. **Koné, M.**, **Fleurot, R.**, **Chebrouet, M.**, **Debey, P.**, **Beaujean, N.**, **Bonnet-Garnier, A.**, 2016. Three-dimensional distribution of UBF and Nopp140 in relationship to ribosomal DNA transcription during mouse preimplantation development. *Biol Reprod*, 94 (4): 95, 26 pages.
17. Osteil, P., Moulin, A., Santamaria, C., Joly, T., Jouneau, L., Aubry, M., Tapponnier, Y., **Archilla, C.**, **Schmaltz-Panneau, B.**, Lecardonnel, J., Barasc, H., Mouney-Bonnet, N., Genthon, C., Roulet, A., Donnadiou, C., Acloque, H., Gocza, E., **Duranthon, V.**, Afanassieff, M., Savatier, P., 2016. A panel of embryonic stem cell lines reveals the variety and dynamic of pluripotent states in rabbits. *Stem Cell Rep*, 7: 383-398.

18. **Salvaing, J., Peynot, N.,** Bedhane, M.N., Veniel, S., Pellier, E., **Boulesteix, C., Beaujean, N., Daniel, N., Duranthon, V.,** 2016. Assessment of ‘one-step’ versus ‘sequential embryo culture conditions through embryonic genome methylation and hydroxymethylation changes. *Hum Reprod*, 31 (11): 2471-2483 2017: 32 (4): 967-967(correction).
19. Sauvegarde, C., Paul, D., Bridoux, L., **Jouneau, A.,** Degrelle, S., Hue, I., Rezsohazy, R., Donnay, I., 2016. Dynamic pattern of HOXB9 protein localization during oocyte maturation and early embryonic development in mammals. *Plos One*, 11(10): e0165898.
20. **Sepulveda-Rincon, L. P., Dube, D., Adenot, P., Laffont, L., Ruffini, S., Gall, L.,** Campbell, BK., **Duranthon, V., Beaujean, N.,** Maalouf, WE., 2016. Random allocation of blastomere descendants to the trophectoderm and ICM of the bovine blastocyst. *Biol Reprod*, 95 (6), 123, 1-10.
21. Vitorino Carvalho, A., Eozenou, C., Healey, G.D., Forde, N., Reinaud, P., **Chebrou, M., Gall, L.,** Rodde, N., Lesage-Padilla, A., Giraud-Delville, C., Leveugle, M., Richard, C., Sheldon, I.M., Lonergan, P., Jolivet, G., Sandra, O., 2016. Analysis of STAT1 expression and biological activity reveals interferon-tau-dependent STAT1-regulated SOCS genes in the bovine endometrium. *Reprod Fert Dev*, 28 (4): 459-474.

## 2015

22. Correia-Alvarez, E., Gomez, E., Martin, D., Carrocera, S., Perez, S., **Peynot, N.,** Giraud-Delville, C., Caamano, J.N., Balseiro, A., Sandra, O., **Duranthon, V.,** Munoz, M., 2015. Early embryonic and endometrial regulation of tumor necrosis factor and tumor necrosis factor receptor 2 in the cattle uterus. *Theriogenology*, 83 (6): 1028-1037.
23. Correia-Alvarez, E., Gomez, E., Martin, D., Carrocera, S., Perez, S., Otero, J., **Peynot, N.,** Giraud-Delville, C., Caamano, J. N., Sandra, O., **Duranthon, V.,** Munoz, M., 2015. Expression and localization of interleukin 1 beta and interleukin 1 receptor (type 1) in the bovine endometrium and embryo. *J Reprod Immunol*, 110: 1-13.
24. Deuve, JL., **Bonnet-Garnier, A., Beaujean, N.,** Avner, P., Morey, C., 2015. Antagonist Xist and Tsix co-transcription during mouse oogenesis and maternal Xist expression during pre-implantation development calls into question the nature of the maternal imprint on the X chromosome. *Epigenetics*, 3 (10): 931-942.
25. Gamarra, G., Ponsart, C., Lacaze, S., **Le Guienne, B.,** Deloche, M.-C., Monniaux, D., Ponter, AA., 2015. Dietary propylene glycol and in vitro embryo production after ovum pick-up in heifers with different anti-Müllerian hormone profiles. *Reprod Fert Dev*, 27 (8): 1249-1261.
26. Jacquier, V., Estellé, J., **Schmaltz-Panneau, B.,** Lecardonnel, J., Moroldo, M., Lemonnier, G., Turner-Maier, J., **Duranthon, V.,** Oswald, I., Gidenne, T., Rogel-Gaillard, C. (Auteur de correspondance) (2015). Genome-wide immunity studies in the rabbit: transcriptome variations in peripheral blood mononuclear cells after in vitro stimulation by LPS or PMA-Ionomycin. *BMC Genomics*, 16 (1), 1-18.
27. Marks, H., Kerstens, barakat, T.S., Splinter, E., Dirks, R. A.M., Mierlo, G, Joshi, O., Wang, S-Y., Babak, T., Albers, C. A., Kalkan, T., Smith, A., **Jouneau, A.,** De Laat, W., Gribnau, J., Stunnenberg, H. G., 2015. Dynamics of gene silencing during X inactivation using allele-specific RNA-seq. *Genome Biol*, 16: 149, 20 pages.

## 2014

28. **Boulanger, L.,** Pannetier, M., **Gall, L.,** Allais-Bonnet, A., Elzaïat, M., **Le Bourhis, D., Daniel, N.,** Richard, C., Cotinot, C., Ghyselinck, N.B., Pailhoux, E., 2014. FOXL2 is a female sex-determining gene in the goat. *Curr Biol*, 24 (4): 404-408.

29. Brisard, D., Desmarchais, A., Touze, J.L., Lardic, L., Freret, S., Elis, S., **Nuttinck, F.**, **Camous, S.**, Dupont, J., Uzbekova, S., 2014. Alteration of energy metabolism gene expression in cumulus cells affects oocyte maturation via MOS-mitogen-activated protein kinase pathway in dairy cows with an unfavorable “Fertil-haplotype of one female fertility quantitative trait locus. *Theriogenology*, 81 (4): 599-612.
30. Carneiro, M., Rubin, C-J., Di Palma, F., Albert, F. W., Alfodi, J., Martinez Barrio, A., Pielberg, G., Rafati, N., Sayyab, S., Turner-Maier, J., Younis, S., Afonso, S., Aken, B., Alves, J.M., Barrel, D., Bolet, G., Boucher, S., Burbano, H. A., Campos, R., Chang, J.L., **Duranthon, V.**, Fontanesi, L., Garreau, H., Heiman, D., Johnson, J., Mage, R. G., Peng, Z., Queney, G., Rogel-Gaillard, C., Ruffier, M., Searle, S., Villafuerte, R., Xiong, A., Young, S., Forsberg-Nilsson, K., Good, J. M., Lander, E. S., Ferrand, N., Lindblad-Toh, K., Andersson, L., 2014. Rabbit genome analysis reveals a polygenic basis for phenotypic change during domestication. *Science*, 345 (6200): 1074-1079.
31. Gamarra, G., Ponsart, C., Lacaze, S., **Le Guienne, B.**, Deloche, M.-C., Monniaux, D., Ponter, AA., 2014. Short term dietary propylene glycol supplementation affects circulating metabolic hormones, progesterone concentrations and follicular growth in dairy heifers. *Livestock Science*, 162: 240-251.
32. Gomez, E., Correia, E., Caamano, JN., Carrocera, S., **Peynot, P.**, Martin Gonzalez, D., **Giraud-Delville, C.**, **Duranthon, V.**, Sandra, O., Munoz, M., 2014. Hepatoma-derived growth factor: from the bovine uterus to the in vitro embryo culture. *Reproduction*, 148: 353-365.
33. Papanayotou, C., Benhaddou, A., Camus, A., Perea-Gomez, A., **Jouneau, A.**, Mezger, V., Langa, F., Ott, S., Sabéran-Djoneidi, D., Collignon, J., 2014. A Novel *nodal* Enhancer dependent on pluripotency factors and smad2/3 signaling conditions a regulatory switch during epiblast maturation. *Plos Biol*, 12, 6:e1001890.
34. Saenz-de-Juano, MD, Marco-Jiménez, F., **Schmaltz-Panneau, B.**, Jiménez-Trigos, E., Viudes-de-Castro, MP., Penaranda, DS., Jouneau, L., Lecardonnel, J., Lavara, R., Naturil-Alfonso, C., **Duranthon, V.**, Vicente, JS., 2014. Vitrification alters rabbit foetal placenta at transcriptomic and proteomic level. *Reproduction*, 147 (6): 789-801.
35. **Schmaltz-Panneau, B.**, **Jouneau, L.**, Osteil, P., Tapponnier, Y., Afanassieff, M., Moroldo, M., **Jouneau, A.**, **Daniel, N.**, **Archilla, C.**, Savatier, P., **Duranthon, V.**, 2014. Contrasting transcriptome landscapes of rabbit pluripotent stem cells in vitro and in vivo. *Anim Reprod Sci*, 149 (1-2) : 67-69.
36. **Veillard, A. C.**, Marks, H., Bernado, AS., Jouneau, L., Laloe, D., **Boulangier, L.**, Kaan, A., **Brochard, V.**, **Tosolini, M.**, Pedersen, R., Stunnenberg, H., **Jouneau, A.**, 2014. Stable methylation at promoters distinguishes epiblast stem cells from embryonic stem cells and the vivo epiblast. *Stem Cells Dev*, 23(17): 2014-2029.
37. Vitorino Carvalho, A., Reinaud, P., Forde, N., Healey, G.D., Eozenou, C., Giraud-Delville, C., Mansouri-Attia, N., **Gall, L.**, Richard, C., Lonergan, P., Sheldon, IM., Lea, RG., Sandra, O., 2014. SOCS genes expression during physiological and perturbed implantation in bovine endometrium. *Reproduction*, 148: (6): 545-557.

### 2013

38. Chavey, A., Bailbé, D., **Maulny, L.**, **Renard, J-P.**, Movassat, J., Portha, B., 2013. A euglycaemic/non-diabetic perinatal environment does not alleviate early beta cell maldevelopment and type 2 diabetes risk in the GK/Par rat model. *Diabetologia*, 56(1): 194-203.

39. Fröhlich T., Kösters M., Graf A., Wolf E., Kobolak J., **Brochard V.**, Dinnyés A., **Jouneau A.**, Arnold G., 2013. iTRAQ proteome analysis reflects a progressed differentiation state of epiblast derived versus inner cell mass derived murine embryonic stem cells. *J Proteomics*, 90: 38-51.
40. Grimard, B., **Marquant-Leguienne, B.**, Remy, D., Richard, C., **Nuttinck, F.**, Humblot, P., Ponter, AA., 2013. Postpartum variations of plasma IGF and IGFbps, oocyte production and quality in dairy cows: relationships with parity and subsequent fertility. *Reprod Domest Anim*, 48 (2): 183-194.
41. Osteil, P, Tapponnier, Y, Markossian, S, Godet, M, **Schmaltz- Panneau, B.**, Jouneau, L, Cabau, C, Joly, T, Blachère, T, Gócza, E, Bernat, A, Yerle, M, Acloque, H, Hidot, S, Bosze, Z, **Duranthon, V.**, Savatier, P., Afanassieff, M., 2013. Induced pluripotent stem cells derived from rabbits exhibit some characteristics of naïve pluripotency. *Biology Open*, 2 (6): 613-628.
42. Tarrade, A., Rousseau-Ralliard, D., Aubrière, MC., **Peynot, N.**, Dahirel, M., Bertrand-Michel, J., **Aguirre-Lavin, T.**, Morel, O., **Beaujean, N.**, **Duranthon, V.**, Chavatte-Palmer P., 2013. Sexual dimorphism of the fetoplacental phenotype in response to a high fat and control maternal diets in a rabbit model. *Plos One*, 8 (12): e83458, 13 pages.
43. Yang, CX., Liu, Z., **Fleurot, R.**, **Adenot, P.**, **Duranthon, V.**, **Vignon, X.**, **Zhou, Q.**, **Renard, J-P.**, **Beaujean, N.**, 2013. Heterochromatin reprogramming in rabbit embryos after fertilization, intra- and inter-species SCNT correlates with preimplantation development. *Reproduction*, 24: 145 (2): 149-159.

#### Articles scientifiques en dernier auteur

#### 2018

1. **Bonnet-Garnier A.**, Kiêu K., **Aguirre-Lavin T.**, Tar K., Flores P., **Liu Z.**, **Yang CX.**, **Peynot N.**, **Chebrouit M.**, **Zhou Q.**, Dinnyes A., **Duranthon V.** and **Beaujean N.** Three dimensional analysis of heterochromatin nuclear distribution during rabbit early development. *Chromosoma*, in press.
2. **Tosolini M.**, **Brochard V.**, **Adenot P.**, **Chebrouit M.**, Grillo G., Navia V., **Beaujean N.**, Francastel C., **Bonnet-Garnier A.** and **Jouneau A.** Contrasting epigenetic states of heterochromatin in the different types of mouse pluripotent stem cells. *Scientific Reports*, in press.

#### 2017

3. Lelievre, JM., **Peynot, N.**, **Ruffini, S.**, **Laffont, L.**, **Le Bourhis, D.**, Girard, PM, **Duranthon, V.**, 2017. Regulation of heat-inducible *HSPA1A* gene expression during maternal-to-embryo transition and response to heat in *in vitro*-produced bovine embryos. *Reprod Fertil Dev*, 29 (9): 1868-1881.
4. **Nuttinck, F.**, **Jouneau, A.**, Charpigny, G., Hue, I., Richard, C., **Adenot, P.**, **Ruffini, S.**, **Laffont, L.**, **Chebrouit, M.**, **Duranthon, V.**, **Marquant-Le Guienne, B.**, 2017. Prosurvival effect of cumulus prostaglandin G/H synthase 2/prostaglandin 2 signaling on biovine blastocyst: impact on in vivo posthatching development. *Biol Reprod*, 96 (3): 531-541.
5. **Ozil, J-P.**, **Sainte-Beuve, T.**, **Banrezes, B.**, 2017. [Mg(2+)]<sub>o</sub>/[Ca(2+)]<sub>o</sub> determines Ca(2+) response at fertilization: tuning of adult phenotype? *Reproduction*, 154 (5): 675-693

6. **Vitorino Carvalho, A., Canon, E.,** Jouneau, L., **Archilla, C., Laffont, L.,** Moroldo, M., **Ruffini, S.,** Corbin, E., Mermillod, P., **Duranthon, V.,** 2017. Different co-culture systems have the same impact on bovine embryo transcriptome. *Reproduction*, 154 (5): 695-710.

### 2016

7. **Koné, M., Fleurot, R., Chebrou, M., Debey, P., Beaujean, N., Bonnet-Garnier, A.,** 2016. Three-dimensional distribution of UBF and Nopp140 in relationship to ribosomal DNA transcription during mouse preimplantation development. *Biol Reprod*, 94 (4): 95, 26 pages.
8. **Salvaing, J., Peynot, N.,** Bedhane, M.N., Veniel, S., Pellier, E., **Boulesteix, C., Beaujean, N., Daniel, N., Duranthon, V.,** 2016. Assessment of 'one-ste' versus 'sequential embryo culture conditions through embryonic genome methylation and hydroxymethylation changes. *Hum Reprod*, 31 (11): 2471-2483.

### 2014

9. **Schmaltz-Panneau, B., Jouneau, L.,** Osteil, P., Tapponnier, Y., Afanassieff, M., Moroldo, M., **Jouneau, A., Daniel, N., Archilla, C.,** Savatier, P., **Duranthon, V.,** 2014. Contrasting transcriptome landscapes of rabbit pluripotent stem cells in vitro and in vivo. *Anim Reprod Sci*, 149 (1-2): 67-69.
10. **Veillard, A. C.,** Marks, H., Bernado, AS., Jouneau, L., Laloe, D., **Boullanger, L.,** Kaan, A., **Brochard, V., Tosolini, M.,** Pedersen, R., Stunnenberg, H., **Jouneau, A.,** 2014. Stable methylation at promoters distinguishes epiblast stem cells from embryonic stem cells and the vivo epiblast. *Stem Cells Dev*, 23(17): 2014-2029.

### 2013

11. **Yang, CX., Liu, Z., Fleurot, R., Adenot, P., Duranthon, V., Vignon, X.,** Zhou, Q., **Renard, J-P., Beaujean, N.,** 2013. Heterochromatin reprogramming in rabbit embryos after fertilization, intra- and inter-species SCNT correlates with preimplantation development. *Reproduction*, 24: 145 (2): 149-159.

### Articles de synthèse / revues bibliographiques

### 2018

1. Chavatte-Palmer, P., Velasquez, M.A., Jammes, H., **Duranthon, V.,** 2018. Epigenetics, developmental programming and nutrition in herbivores. *Animal*, accepté
2. **Duranthon, V.,** Chavatte-Palmer, P., 2018. Long term effects of ART: what do animals tell us? *Mol Reprod Dev*, in press doi: 10.1002/mrd.22970

### 2016

3. Chavatte-Palmer, P., Vialard, F., Tarrade, A., Dupont, C., **Duranthon, V.,** Lévy, R., 2016. DOHaD et programmation pré- et péri-conceptionnelle. *M S-Med Sci*, 32 (1): 57-65.
4. Chavatte-Palmer, P., Robles, M., Tarrade, A., **Duranthon, V.,** 2016. Gametes, embryos, and their epigenome: considerations for equine embryo technologies. *J Equine Vet Sci*, 41: 13-21.



5. Sepulveda-Rincon, L. P., Del Llano Solanas, E., Serrano-Revuelta, E., Ruddick, L., Maalouf, W.E., **Beaujean, N.**, 2016. Early epigenetic reprogramming in fertilized, cloned, and parthenogenetic embryos. *Theriogenology* 86 (1): 91-98.

### 2015

6. **Beaujean, N.**, 2015. Epigenetics embryo quality and developmental potential. *Reprod Fertil Dev*, 27 (1): 53-62.
7. **Salvaing, J.**, Li, Y., **Beaujean, N.**, O'Neill, C., 2015. Determinants of valid measurements of global changes in 5'-methylcytosine and 5'-hydroxymethylcytosine by immunolocalisation in the early embryo. *Reprod Fertil Dev*, 27 (5): 755-764.

### 2014

8. Almouzni, G., Altucci, L., Amati, B., Ashley, N., Baulcombe, D., **Beaujean, N.**, Bock, C., Bongcam-Rudloff, E., Bousquet, J., Braun, S., Paillerets, B. B., Bussemakers, M., Clarke, L., Conesa, A., Estivill, X., Fazeli, A., Grgurevic, N., Gut, I., Heijmans, B. T., Hermouet, S., Houwing-Duistermaat, J., Iacobucci, I., Ilas, J., Kandimalla, R., Krauss-Etschmann, S., Lasko, P., Lehmann, S., Lindroth, A., Majdic, G., Marcotte, E., Martinelli, G., Martinet, N., Meyer, E., Miceli, C., Mills, K., Moreno-Villanueva, M., Morvan, G., Nickel, D., Niesler, B., Nowacki, M., Nowak, J., Ossowski, S., Pelizzola, M., Pochet, R., Potocnik, U., Radwanska, M., Raes, J., Rattray, M., Robinson, M. D., Roelen, B., Sauer, S., Schinzer, D., Slagboom, E., Spector, T., Stunnenberg, H. G., Tiligada, E., Torres-Padilla, M. E., Tsonaka, R., Soom, A. V., Vidakovic, M., Widschwendter, M., 2014. Relationship between genome and epigenome - challenges and requirements for future research. *BMC Genomics*, 15: 487, 7 pages.
9. **Beaujean, N.**, 2014. Histone post-translational modifications in preimplantation mouse embryos and their role in nuclear architecture. *Mol Reprod Dev*, 81 (2): 100-112.

## 2- Ouvrages

### Direction et coordination d'ouvrages / édition scientifique

### 2015

1. **Beaujean, N.**, **Jammes, H.**, **Jouneau, A.**, 2015. Nuclear Reprogramming Methods and Protocols, Second Edition, *Methods Mol Biol*, 1222: 310 pages.

### Chapitres d'ouvrage

### 2018

1. **Beaujean, N.**, **Salvaing, J.**, Hadi, N., Pennings, S. (2018). Antibody-based detection of global nuclear DNA methylation in cell, tissue sections, and mammalian embryos. In: *DNA Methylation Protocols* (p. 59-80). *Methods in Molecular Biology*, 1708 (3ème ed). FRA : Tost Jörg. 704, DOI : 10.1007/978-1-4939-7481-8\_4

### 2017

2. **Aguirre-Lavin, T.**, **Beaujean, N.** 2017. Three-dimensional immunofluorescence in situ hybridization in preimplantation mouse embryos. In *Fluorescence In Situ Hybridization (FISH)* eds Springer Protocols Handbooks, 417-427

## 2016

3. **Tosolini, M., Jouneau, A.**, 2016. Acquiring ground state pluripotency: switching mouse embryonic stem cells from serum/LIF medium to 2i/LIF medium. *Methods Mol Biol*, in “Embryonic Stem Cell Protocols”, 1341: 41-48.
4. **Tosolini, M., Jouneau, A.**, 2016. From naive to primed pluripotency: In vitro conversion of mouse embryonic stem cells in epiblast stem cells. In: Kursad Turksen (Ed), *Embryonic Stem Cell Protocols* (p. 209-216). *Methods in Molecular Biology*, 1341. New-York, USA: Editions Springer.

## 2015

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32. Guillomot, M., Prezelin, A., Kiefer, H., **Beaujean, N., Aguirre-Lavin, T., Salvaing, J.**, Jammes, H., 2015. Analysis of methylated DNA contents and distribution in bovine placental and foetal tissues after somatic nuclear reprogramming. Conference 2015 Epiconcept "Epigenetics and Periconception Environment", Dubrovnik, Croatie, 26-29 avril 2015. Proceedings of the Epiconcept Workshop 2015, 33: P-22
33. Guillomot, M., Prezelin, A., Kiefer, H., Jouneau, L., Piumi, F., Tost, J., Renaud, C., Richard, C., Le Bourhis, D., **Beaujean, N., Aguirre-Lavin, T., Salvaing, J., Renard, J-P.**, Jammes, H., 2015. Impact of somatic nuclear

reprogramming on DNA methylation in bovine placental and foetal tissues. 66<sup>th</sup> EAPP Annual Meeting, Varsovie, Pologne, 31 août-4 septembre 2015, Abstracts Book, session 11, poster

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35. Mourier, E., Daniel, N., Richard, C., Marchiol, C., Lager, F., Renault, G., **Duranthon, V.**, Chavatte-Palmer, P., 2015. The use of ultrasound biomicroscopy for embryo injections. Epiconcept Conference 2015 "Epigenetics and Periconception", Hersonissos, Crète, Grèce, 6-7 octobre 2015. Proceedings of the Epiconcept Conference 2015, 54: P-43
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38. **Salvaing, J., Peynot, N., Maulny, L.**, Veniel, S., **Bedhane, MN., Ruffini, S., Beaujean, N., Daniel, N., Duranthon, V.**, 2015. Impact of assisted reproductive technologies on early embryo epigenome: in vitro culture affects embryonic genome demethylation and hydroxymethylation. Epiconcept Conference 2015 "Epigenetics and Periconception", Hersonissos, Crète, Grèce, 6-7 octobre 2015. Proceedings of the Epiconcept Conference 2015, 25: O-14
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#### International

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### France

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PBMCs after in vitro stimulation. EAAP Annual Meeting, Nantes, France, 26-30 Aout 2013. Abstracts Book of the 64<sup>th</sup> annual meeting of the European Federation of animal n° 19, session 46, 547: P-24

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53. **Koné, M.C., Cournut, M., Fleurot, R., Chebrou, M.**, Galjart, N., **Adenot, P., Beaujean, N. and Bonnet-Garnier, A.** 2013. 3D-FISH analysis of ribosomal RNA genes organization during early mouse embryonic development. EMBO Nuclear Structure and Dynamics meeting. L'Isle sur la Sorgue, France, 2-6 Octobre 2013. Abstracts book of the EMBO Conference Series on Nuclear Structure Dynamics, P-14
54. **Ozil, JP., Banrezes, B., Berteaux, L., Sainte Beuve, T.**, Cancéla, J-M., 2013. Evaluation of the metabolic efficiency of the culture media during fertilization: impact on the development outcomes. 1<sup>st</sup> COST Action FA1201 Epiconcept "Epigenetics and periconception Environment", Antalya, Turquie, 24-25 Avril 2013. Proceedings of the 1<sup>st</sup> General Meeting of Epiconcept, Eds: Van Soom, A., Fazeli, A. and Kuran, M., 94: P-49
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58. **Bonnet-Garnier A., Gall L., Laffont L., Ruffini S., Le Bourhis D., Lelievre J.M., Adenot P., Beaujean N.**, 2013. Conséquences des biotechnologies de la reproduction: Modifications épigénétiques au cours du développement embryonnaire précoce chez le bovin. Proceedings of the 20èmes Rencontres autour des Recherches sur les Ruminants". Institut de l'Elevage- INRA, Paris, France, Paris, France, 4-5 décembre 2013

## Communications sans actes (Poster ou présentations orales)

### 2018

#### France

1. **Bonnet-Garnier A.**, 2018. Functional analysis of nuclear organization during early embryonic development The example of ribosomal genes (rDNA). 2018 Annual Revive Consortium Meeting, Gouvieux, France, 21-23 Janvier 2018 (communication orale)

### 2017

### International

2. **Beaujean, N.**, David, S-A., **Brochard, V.**, Jullien, J., Gurdon, J., 2017. Resistance of reprogramming after nuclear transfer is mediated by multiple chromatin repressive pathways. Chromatin and Epigenetics: from mechanism to function conference, Munich, Allemagne, 5-7 avril 2017, poster
3. **Tosolini M., Brochard, V., Adenot, P., Chebrou, M.**, Grillo, G., **Navia, V., Beaujean, N.**, Francastel, C., **Bonnet-Garnier, A., Jouneau, A.**, 2017. Contrasted regulation of pericentromeric hetero chromatin in mouse ground naive and primed pluripotent stem cells. France Japan Epigenetics Workshop 2017, Paris, France, 6-8 novembre 2017, poster

### 2016

#### France

4. **Beaujean Bobineau, N.**, 2016. DOT1L is essential for embryonic development and chromocenters formation in bovine. 5<sup>th</sup> Annual Meeting EpiGeneSys, Paris, France, 11-13 février 2016
5. **Beaujean Bobineau, N.**, 2016. Identification des modifications post-traductionnelles de l'Histone H3 impliquées dans la condensation des chromosomes « in embryo » Topo Club 2016, Paris, France, 28 janvier 2016
6. **Tosolini, M., Veillard, A.-C., Chebrou, M., Adenot, P., Bonnet-Garnier, A., Beaujean, N., Jouneau, A.**, 2016. Dynamic of nuclear changes occurring during the conversion between naïve (ES) and primed (EpiSC) pluripotent cells. 3rd. Annual Consortium Meeting, Stem Cells in Regenerative Biology and Medicine, Belle Eglise, France, 26-28 janvier 2016

### 2015

#### International

7. Grybel, K., **Canon, E.**, Pendzialek, M., Schindler, M., Gürke, J., Seeling, T., Blachère, T., Godet, M., Fischer, B., **Duranthon, V.**, Navarrete Santos, A., 2015. Maternal insulin-dependent diabetes mellitus changes DNA methylation pattern at Oct4 promotor in rabbit blastocysts. Presented at WG/MC/Scientific Meeting of Action BM1308 "Sharing advances on large animal models" - SALAAM, Poznan, Pologne, 13-16 décembre 2015, poster
8. **Koné, M., Chebrou, M., Fleurot, R., Bonnet Garnier, A., Beaujean, N.**, 2015. Deciphering nucleogenesis in early mouse embryos. Wellcome Trust-Waddington Symposium: "EpiGenetics - in dialogue with the genome", Edinburgh, Royaume-Uni, 1-5 juin 2015, poster
9. **Tosolini, M., Adenot, P., Chebrou, M., Jouneau, L., Beaujean, N., Bonnet Garnier, A., Jouneau, A.**, 2015. Contrasting epigenetic landscape between the different states of mouse in vitro pluripotency. Presented at Stem Cell Epigenetics, Sitges, Espagne, 20-22 septembre 2015

### 2014

#### France

10. **Beaujean, N., Jouneau, A., Brochard, V., Serrano, E., Benkeddache, D., Boulesteix, C.**, 2014. DNA replication and chromatin remodeling in cloned mouse embryos produced using epiblast stem cells. 3<sup>th</sup> Annual Consortium Meeting, Stem Cells in Regenerative Biology and Medicine, Belle-Eglise, France, 3-5 février 2014, présentation orale
11. **Tosolini, M., Veillard, A.-C., Chebrou, M., Adenot, P., Bonnet-Garnier, A., Beaujean, N., Jouneau, A.**, 2014. Dynamic of nuclear changes occurring during the conversion between naïve (ES) and primed (EpiSC)

pluripotent cells. 3<sup>rd</sup> Annual Consortium Meeting, Stem Cells in Regenerative Biology and Medicine, Belle Eglise, France, 3- février 2014, poster

## 2013

### International

12. **Beaujean, N.**, 2013. Developmental potential of NT (Nuclear transfer) embryos is linked to constitutive heterochromatin reprogramming. Epigenesis, 2<sup>nd</sup> Annual meeting, Amsterdam, Pays Bas, 16-18 janvier 2013, poster

### France

13. Jammes, H., Prézélin, A., Guillomot, M., Gabory, A., **Salvaing, J., Fleurot, R.**, Campion, E., **Beaujean, N.**, Kiefer, H., 2013. Analysis of 5-methyl cytosine and 5-hydroxymethyl cytosine contents and distribution in different lineages during the bovine development. Conférence J. Monod, "DNA methylation and demethylation", Roscoff, France, 14-18 septembre 2013, poster
14. Jouneau, L., Hendrik, M., **Veillard, A.-C.**, Kaan, A., Stunnenberg, H., **Jouneau, A.**, 2013. *Different patterns of gene body DNA methylation in ESC and EpiSC*. Conférence Jacques Monod, Méthylation et déméthylation de l'ADN, Roscoff, France, 14-18 septembre 2013, poster
15. **Salvaing, J., Bedhane, M. N., Daniel, N., Adenot, P., Maulny, L., Peynot, N., Duranthon, V., Beaujean, N.**, 2013. DNA methylation and hydroxymethylation in rabbit embryos: effect of in vitro culture. Presented at Conférence Jacques Monod, DNA methylation and demethylation, Roscoff, France, 14-18 septembre 2013, poster
16. **Veillard, A.C.**, Bernardo, A., **Brochard, V.**, Jouneau, L., Pedersen, R., Marks, H., Stunnenberg, H., **Jouneau, A.**, 2013. Comparison of DNA methylation between two types of mouse pluripotent stem cells: ESCs and EpiSCs. REVIVE 2<sup>nd</sup> Consortium Meeting. Château St Just, Belle-Eglise, France. 19-21 février 2013, présentation orale
17. **Veillard, M.-C.**, Marks, H., Bernardo, A., Jouneau, L., Laloe, D., **Boulanger, L.**, Kaan, A., **Brochard, V.**, Pedersen, R., Stunnenberg, H., **Jouneau, A.**, 2013. DNA methylation patterns distinguish mouse embryonic stem cells from epiblast stem cells. Conférence J. Monod, DNA methylation and demethylation, Roscoff, France, 14-18 septembre 2013, poster

### Invitations à des colloques / congrès à l'étranger

## 2017

1. **Beaujean, N.**, 2017. Embryo resistance to transcriptional reprogramming following nuclear transfer is mediated by multiple chromatin repressing pathways. Epigenetic mechanisms of male germ cell maturation and early development. Mumbai, Inde, 14-18 février 2017.

## 2016

2. **Beaujean Bobineau, N.**, 2016. Early epigenetic reprogramming in fertilized, cloned, and parthenogenetic embryos. 18<sup>th</sup> International Congress on Animal Reproduction (ICAR), Tours, France, 26 au 30 juin 2016
3. **Ozil, J.-P., Sainte-Beuve, T., Banrezes, B.**, 2016. The Ca<sup>2+</sup> regime at fertilization is determined by the formulation of the culture media. Epiconcept Workshop 2016, Velingrad, Bulgarie, 18-19 mai 2016

## 2015



4. **Beaujean, N.**, 2015. Embryo quality and developmental potential: what is the role of « epigenetics »? Veterinary and Animal Science Annual Meeting 2015, Milan, Italie, 15 juillet 2015
  5. **Beaujean, N.**, 2015. Histone post-translational modifications in preimplantation mouse embryos and their role in nuclear architecture. Veterinary and Animal Science Annual Meeting 2015, Milan, Italie, 16 juillet 2015
  6. **Beaujean, N.**, 2015. Epigenetic regulation of early embryonic development. 6.DVR-Kongress « Dacheverband reproduktionsbiologie und –medizin e.v., Hambourg, Allemagne, 3-5 décembre 2015
  7. **Duranthon, V.**, 2015. Comparative mammalian embryo biology. WG/MC/Scientific Meeting of Action BM1308 “Sharing advances on large animal models- SALAAM, Poznan, Pologne, 13-16 décembre 2015
  8. **Duranthon, V.**, 2015. Development of new tools for easy transcriptome analyses in the rabbit. Application to the embryo. RGB-Net Meeting & 6<sup>th</sup> Rabbit Biotechnology Meeting, Lyon, France, 3-4 novembre 2015
- [2014](#)
9. **Beaujean, N.**, 2014. Histone post-translational modifications in preimplantation mouse embryos and their role in nuclear architecture. 3<sup>rd</sup> SKLRB symposium on reproductive biology, Pekin, Chine, 26-30 octobre 2014
  10. **Ozil, J-P.**, 2014. Oocyte metabolism and programming of long-term development. Conference 2014 Epiconcept "Epigenetics and Periconception Environment", Vilamoura, Portugal, 01 - 03 Octobre 2014
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11. **Beaujean, N.**, 2013. Epigenetic marks and nuclear reprogramming in early embryos: short and long term effects. 1<sup>st</sup> COST Action FA1201 Epiconcept “Epigenetics and periconception Environment”, Antalya, Turquie, 24-25 Avril 2013. Proceeding of the 1<sup>st</sup> General Meeting of Epiconcept, Eds: Van Soom, A., Fazeli, A. and Kuran, M., p21
  12. **Beaujean, N.**, 2013. Endometrial epigenetic status and disturbances. Séminaire “Uterine Health”, Uppsala, Suède, 7 novembre 2013
  13. **Boulanger, L.**, 2013. ZFN, TALEN, CRISPR/Cas9. The new tool of functional genomics. European Cystic Fibrosis Society (ECFS), Basic Science Conférence, Malaga, Espagne, 20-24 Mars 2013
  14. **Daniel, N.**, 2013. Functional analysis of rabbit pluripotent cells. Plurabbit final meeting, Godollo, Hongrie, 27 mars 2013
  15. **Duranthon, V.**, 2013. Rabbit as a model of early embryo development. RGB-Net COST Action TD 1101 “Collaborative European network on rabbit genome biology”, Gödöllo, Hongrie, 26-27 mars 2013
  16. **Duranthon V.** 2013. Refinement of the European rabbit genome resource and development of genome-based platforms. RGBNet Second Annual Meeting. Uppsala, Suède, 9-10 avril 2013
  17. **Duranthon V.** 2013. Pluripotency in embryo and in vitro? 4th Mammalian Embryo Genomics meeting, Quebec, Canada, 9-10 octobre 2013.
  18. **Ozil, J-P.**, 2013. Developmental consequences of egg functioning during fertilization in the mouse. Mammalian Embryology Conference: celebrating pioneering of Prof. A. K. Tarkowski. Varsovie, Pologne, 25-26 octobre 2013

## Annexes

### France

#### 2017

1. Chavatte-Palmer, P., **Duranthon, V.**, 2017. Aspects cliniques – Impact des milieux de culture et des transferts d’embryons frais/congelés sur le développement: Dans le modèle animal. Feering Today, Monaco, Monaco, 10-11 mars 2017

#### 2015

2. **Beaujean, N.**, 2015. Le transfert de noyau somatique chez l’homme et chez l’animal. Les journées de l’Agence de la Biomédecine 2015, « Médecine personnalisée, solidarité et altruisme » Paris, France, 28-29 mai 2015
3. **Duranthon, V.**, 2015. Effects of the environment on early mammalian embryo. Consequences for adult phenotype. 1ères Journées Scientifiques du GdR 3606 Repro Rennes, France 13-15 avril 2015

#### 2014

4. **Beaujean, N.**, 2014. Epigenetic reprogramming and pericentric heterochromatin remodeling after nuclear transfer as a marker of developmental potential? Chaire d’épigénétique et mémoire cellulaire, “Reprogramming”, Paris, France, 26 mai 2014
5. **Duranthon, V.**, 2014. Early stages of mammalian development: key stages for adult phenotype? AgreeSkills Annual Meeting, Toulouse, France, 27-29 octobre 2014

#### 2013

6. **Bonnet-Garnier, A.**, 2013. Effet de l’environnement sur la qualité ovocytaire et le développement .VIIème Journée Nationale du G.E.D.O. Paris, France, 11 avril 2013

## II - INTÉRACTION AVEC L'ENVIRONNEMENT, IMPACTS SUR L'ÉCONOMIE, LA SOCIÉTÉ, LA CULTURE, LA SANTÉ

### 1- Interactions avec les acteurs socio-économiques

#### Contrats de R&D avec des industriels

Deux contrats financés par APISGENE , en collaboration avec Allice :

- Métamorphe (2015-2017) Mise en place du dispositif expérimental proposé dans l’ANR-PRCE BoSexDim (2018-2021).
- Embryomimetism (2017-2019).

#### Créations de laboratoires communs avec une / des entreprise(s)

Participation au Labcom Sequamol. Labcom mis en place avec Allice. Porteur H Jammes BDR équipe MEC2.

### 2- Produits destinés au grand public

Produits de vulgarisation: articles, interviews, éditions, vidéos, etc.

#### 2016

Chavatte-Palmer, P., Vialard, F., Tarrade, A., Dupont, C., **Duranthon, V.**, Lévy, R., 2016. DOHaD et programmation pré- et péri-conceptionnelle. M S-Med Sci, 32 (1): 57-65

## 2014

**Beaujean, N.**, 2014. Les clones sont-ils épigénétiquement normaux? Biofutur, n° 359, novembre 2014, 34

## 2013

**Beaujean N.**, 2013. Une reproduction sans spermatozoïde. Biofutur, 344: 44-45

### Produits de médiation scientifique

#### Conférence à destination des médecins de PMA :

**Duranthon, V.** (2017). Aspects cliniques - Impact des milieux de culture et des transferts d'embryons frais/congelés sur le développement : quelles informations chez l'animal. Presented at Ferring Today, Monaco, MCO (2017-03-10 - 2017-03-11).

#### Communications à destination du monde de l'élevage :

**Bonnet Garnier, A.** (Présentateur), **Gall, L., Laffont, L., Ruffini, S., Le Bourhis, D., Lelievre, J.-M., Adenot, P., Beaujean, N.** (2013). Conséquences des biotechnologies de la reproduction : Modifications épigénétiques au cours du développement embryonnaire précoce chez le bovin. In: 20èmes Rencontres Recherches Ruminants (p. 84). *Rencontres autour des Recherches sur les Ruminants*. Presented at 20. Rencontres autour des Recherches sur les Ruminants, Paris, FRA (2013-12-04 - 2013-12-05). Paris, FRA : Institut de l'Elevage - INRA.

Jammes, H. (Présentateur), Kiefer, H., Devinoy, E., **Beaujean, N.**, Chavatte Palmer, P. (2013). L'épigénétique...un nouveau domaine à explorer pour la filière bovine. In: 20èmes Rencontres Recherches Ruminants. *Rencontres autour des Recherches sur les Ruminants*. Presented at 20. Rencontres autour des Recherches sur les Ruminants, Paris, FRA (2013-12-04 - 2013-12-05). Paris, FRA : Institut de l'Elevage - INRA.

#### Communication à destination du grand public et des écoles

Participation aux journées Portes ouvertes INRA 2016 : atelier observatoire d'embryons de mammifères présentation de nos thèmes de recherche.

Intervention en collège : débat sur les cellules souches. Janvier 2018

Intervention en école primaire : découverte de l'embryon des mammifères. Une demi journée pour deux classes de CM2.

### Débats science et société

2015: Organisation d'une session spéciale de la Société de Biologie sur le thème " La reproduction de demain chez l'homme et l'animal", Paris.

### III - IMPLICATION DANS LA FORMATION PAR LA RECHERCHE

#### 1- Productions scientifiques (articles, ouvrages, etc.) issues des thèses

##### 2018

1. **Tosolini M., Brochard V., Adenot P., Chebrou M.,** Grillo G., Navia V., Beaujean N., Francastel C., Bonnet-Garnier A. and Jouneau A. Contrasting epigenetic states of heterochromatin in the different types of mouse pluripotent stem cells. *Sci Reports*, in press.

##### 2016

2. **Koné, M., Fleurot, R., Chebrou, M., Debey, P., Beaujean, N., Bonnet-Garnier, A.,** 2016. Three-dimensional distribution of UBF and Nopp140 in relationship to ribosomal DNA transcription during mouse preimplantation development. *Biol Reprod*, 94 (4): 95, 26 pages
3. **Sepulveda-Rincon, L. P., Dube, D.(co-premiers auteurs), Adenot, P., Laffont, L., Ruffini, S., Gall, L.,** Campbell, BK., Duranthon, V., Beaujean, N., Maalouf, WE., 2016. Random allocation of blastomere descendants to the trophectoderm and ICM of the bovine blastocyst. *Biol Reprod*, 95 (6), 123, 1-10
4. **Tosolini, M., Jouneau, A.** (2016). Acquiring ground state pluripotency: Switching mouse embryonic stem cells from serum/LIF medium to 2i/LIF medium. In: Kursad Turksen (Ed), *Embryonic Stem Cell Protocols* (p. 41-48). *Methods in Molecular Biology*, 1341. New-York, USA : Editions Springer.
5. **Tosolini, M., Jouneau, A.** (2016). From naive to primed pluripotency: In vitro conversion of mouse embryonic stem cells in epiblast stem cells. In: Kursad Turksen (Ed), *Embryonic Stem Cell Protocols* (p. 209-216). *Methods in Molecular Biology*, 1341. New-York, USA: Editions Springer.
6. **Sepulveda-Rincon, L. P.,** Del Llano Solanas, E., Serrano-Revuelta, E., Ruddick, L., Maalouf, W. E., Beaujean, N. (2016). Early epigenetic reprogramming in fertilized, cloned, and parthenogenetic embryos. *Theriogenology*, 86 (1): 91-98.

##### 2014

7. **Veillard, A. C.,** Marks, H., Bernado, AS., Jouneau, L., Laloe, D., Boulanger, L., Kaan, A., Brochard, V., Tosolini, M., Pedersen, R., Stunnenberg, H., Jouneau, A., 2014. Stable methylation at promoters distinguishes epiblast stem cells from embryonic stem cells and the vivo epiblast. *Stem Cells Dev*, 23(17): 2014-2029

#### 2- Efficacité de l'accompagnement des étudiants et qualité de leur encadrement (financement, durée des thèses, taux d'abandon)

Toutes les thèses entamées sur la période ont été menées jusqu'à la soutenance. La durée moyenne des thèses est de 44,75 mois. Les financements ont été obtenus par les concours d'école doctorale (1), ou par le Dim biothérapies (2), ou par des financements étrangers (2). Une prolongation de un an a été obtenue auprès du Labex Revive (6 mois) et de la FRM (6mois).

2010-2013 **Anne-Clémence VEILLARD**, « Profil de méthylation de l'ADN des cellules souches d'épiblaste issues d'embryons après fécondation ou clonage et comparaison avec les cellules souches embryonnaires de souris » Université Paris-Sud, allocation doctorale DIM Biothérapie Ile-de-France.

2011-2016 **Delphine DUBE**. « Différence dans la capacité des fibroblastes à être reprogrammés par le cytoplasme de l'ovocyte : étude d'une situation différentielle chez le bovin » Financement

contrat doctoral Université Paris Sud. Puis, après congé maternité, financement complémentaire de six mois par la FRM et 6 mois par le Labex Revive.

2012-2016 **Maimouna Coura KONE**, "Nucléogénèse et régulation de l'expression de l'hétérochromatine péricentromérique dans l'embryon précoce de souris", AgroParisTech, soutenance le 25 Novembre 2016. Financement de l'Ambassade de Côte d'Ivoire en France.

2012-2017 **Lessly SEPULVEDA-RINCON**, "Cell Allocation Patterns during pre-implantation development in mammalian embryos", University of Nottingham (thèse en co-tutelle), soutenue le 06 Mars 2017. Financement CONACYT (Conseil national des sciences et de la technologie du Mexique) et Université de Nottingham.

2013-2016 **Matteo TOSOLINI**, « Dynamic of nuclear changes occurring during the conversion between naïve (ESC) and primed (EpiSC) pluripotent cells" Université Paris-Sud, allocation doctorale DIM Biothérapie Ile-de-France.

### 3- Suivi des doctorants en liaison avec les écoles doctorales et attention portée à l'insertion professionnelle des docteurs

Deux étudiants (M. Tosolini et AC. Veillard) ont été embauchés dans le secteur privé à l'issue de leur thèse.

Une étudiante (M. Koné) est assistant chercheur à Nagui Abrogoua , Abidjan, Côte d'Ivoire.

Une étudiante (L. Sepulveda-Rincon) est en stage post-doctoral au MRC London Institute of Medical Sciences (LMS).

Une étudiante D. Dubé ne souhaitait pas poursuivre en recherche, elle travaille sur contrat à l'Education Nationale.

### 4- Mobilisation des chercheurs dans le montage de formation de niveau master

Duranthon V. est responsable d'une UE d'enseignement « de la fécondation à l'implantation » du master ReproDev Paris VII. En moyenne 20 étudiants par an dont la moitié de médecins. Organisation de 30 heures de cours ou séminaires étudiants. Evaluation des étudiants. Participation au jury du Master.

Bonnet Garnier A.: Responsable du module optionnel Epigénétique au sein du Master 2 PRIAM Paris-Saclay. Module de 18h. En moyenne le module a lieu une année sur deux. Evaluation des étudiants. Participation au jury du Master.

Cours en Master1 ou licence3: 10 heures par an.

Cours en Master 2 :22h par an