



T05 - Ms. Flore CASTELLAN, PhD Candidate, French University of Tokyo, Dept. of Biological Sciences, Laboratory of Embryology

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My research project:

During pregnancy, entire cells are transferred through the placenta from the mother to the fetus. These maternal cells can survive over decades after birth in the progeny, at the low frequency of 1 cell for 100,000 host cells [*Gammil, Int J Dev Biol. 2010*]. While this phenomenon is widespread among healthy subjects, numerous studies report higher concentrations of maternal cells in the blood and tissues of patients of infantile pathologies. In some cases these cells are believed to contribute to tissue repair, but this hosting of foreign cells might also trigger an immune conflict within the host, a potential pathogenetic mechanism formulated as the materno-foetal immune disease hypothesis [*Irie, Reproductive Sys Sexual Disord. 2011*].

To test this hypothesis in a model disease of neonatal liver disorder, I am building a transgenic mouse strain to specifically deplete maternal cells within the pup's body. By comparing the disease progression in the presence and absence of maternal cells, I hope to gain insights in maternal cells' behaviour and function.

My career path:

I am currently doing my PhD, which started in April 2017. My main difficulty so far, and still ongoing, has been to be financed. I applied twice, and was rejected twice, to the government-financed JSPS DC1 and DC2 scholarships. The problem seems to be a lower score in the "research achievements" category: indeed, students entering PhD in Japan may have been performing research since their undergraduate and may have already published a paper. I am getting by right now with both Teaching Assistant and Research Assistant funds from the university and payments from research grant money as "part-time job" for additional technical work, while still applying to some competitive private organization scholarships. Had I been aware of this situation beforehand, I would have applied to the MEXT scholarship from my home country.

Concerning research grants, I wrote a KAKENHI application last year that my teacher had to translate and submit in his name, and we obtained a full funding of my research project.

My relation to Europe:

While there is no official collaboration yet, there are on-going discussions about a future collaboration with a professor from Hannover Medical School, met recently during an international conference in Sendai. Europe is very attractive to me for a future postdoc, particularly when thinking of the opportunities given by European funding programmes to be part of an international collaboration project and to learn from both interdisciplinary and transnational mobility.