**POSTER 7: Elucidating the role ofN-Acetyl-Aspartate in normal hematopoiesis**

Claire Lauvinerie 1, Arnaud Villacreces 1, Vanessa Desplat 1, Pierre-Yves Dumas 1, Isabelle Vigon 1, Jean-Max Pasquet 1, Amélie Guitart 1, *
1 : Cellules Souches Hématopoïétiques Normales et Leucémiques, INSERM Ul312 BRIC, Université de Bordeaux, Bordeaux, France
Université de Bordeaux {Bordeaux, France), Institut National de la Santé et de la Recherche Médicale -INSERM
* Auteur correspondant

Mature blood cells have a limited lifespan and must be continually renewed, At the top of this hierarchical process are haematopoietic stem cells (HSC), It is well established that adult bone marrow (ABM) HSC are mainly quiescent Conversely, HSC in the foetal liver (FL) proliferate extensively, calling for distinct bioenergetic requirements, The link between metabolism and functional capacities of HSC have mostly been studied in adult mouse models, Hence, knowledge on proliferating HSC remains elusive, To fil this gap, we conducted a metabolomic comparative analysis of quiescent ABM-HSC and proliferative FL-HSC, Our interest rapidly focused on a metabolite with a 10-fold higher abundance in FL-HSC than in ABM-HSC: the NAcetyl-Aspartate (NAA), Although NAA is the second most prevalent metabolite in the brain, its function is still unclear, To investigate the role of NAA in adult and foetal haematopoiesis, we have used a transgenic mouse mode] knockout for Nat81, the gene coding for N-Acety!Aspartate Transferase, the enzyme catalysing the production ofNAA in cells; in this mouse mode] NAA is not detectable in any tissue, Using flow cytometry, we have characterised the boue marrow of Nat81 -1- and Nat81 +/+ adult mice, as well as the FL of EJ4,5 embryos, We have also conducted competitive haematopoietic reconstitution assays with both genotype to assess the role ofNAA in HSC function. This project should address the question regarding the involvement of NAA in foetal and adult haematopoiesis regulation,

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