LUXEMBOURG INSTITUTE OF HEALTH
RESEARCH DEDICATED TO LIFE

LECTURE SERIES & WORKSHOPS

INFECTION & IMMUNITY

26 SEPT 2019
Thursday

LECTURE
Lycée Guillaume Kroll
d'Esch/Alzette
Salle de Projection *
11.00 - 12.00 pm

MEET & EAT *
light lunch provided
House of BioHealth,
Room Françoise
Barré-Sinoussi
12.30 - 2.00 pm

9 10 11 12 1 2 3 4

*Please register by sending a mail to florence.henry@lih.lu

SPEAKER

Prof Erika PEARCE

Director of the Department of Immunometabolism, Max Planck Institute of Immunobiology and Epigenetics

DRIVING IMMUNITY: HOW CELLULAR METABOLISM INTEGRATES DIVERSE PROCESSES TO IMPACT IMMUNE FUNCTION

ABSTRACT

Regulatory T cells (Tregs) subdue immune-mediated inflammation that is Associated with autoimmunity, but which can be beneficial for cancer rejection. Central to Treg activation are changes in lipid metabolism to support their survival and function. Fatty acid binding proteins (FABPs) are a family of lipid Chaperones required to facilitate the uptake and trafficking of intracellular lipids. One family member, FABP5, is expressed in certain T cell subsets, but its function Remains elusive. We show here that in Tregs, FABP5 inhibition causes mitochondrial defects, underscored by decreased OXPHOS, lipid elongation and desaturation, and loss of cristae structure, which augment their suppressive function. Mitochondrial dysfunction after FABP5 inhibition results in mtDNA release and consequent cGAS/STING-dependent type I IFN signaling, which induces increased production of the regulatory cytokine IL-10, promoting Treg suppressive activity. Together these data reveal that FABP5 acts as a gatekeeper of mitochondrial health to control Treg function.

HOST:
Department of Infection and Immunity (LIH)

RESPONSIBLE LIH SCIENTIST:
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