



Doctorate program  
Milan  
EXPERIMENTAL  
MEDICINE



UNIVERSITÀ  
DEGLI STUDI  
DI MILANO

# International PhD Program in Experimental Medicine

## D-MEM SEMINAR

# MATTEO IANNAZONE

Dynamics of Immune Responses Laboratory, IRCCS Ospedale

November 4<sup>th</sup>, 2021 - 4.30 PM  
Aula G13 Via Golgi

## Immune Surveillance of the liver

Kupffer cells (KCs) are highly abundant, intravascular, liver-resident macrophages known for their scavenger and phagocytic functions. KCs can also present antigens to CD8<sup>+</sup> T cells and promote either tolerance or effector differentiation, but the mechanisms underlying these discrepant outcomes are poorly understood. Here, we used a mouse model of hepatitis B virus (HBV) infection – where HBV-specific naïve CD8<sup>+</sup> T cells recognizing hepatocellular antigens are driven into a state of immune dysfunction – to identify a subset of KCs (referred to as KC2) that cross-presents hepatocellular antigens upon interleukin-2 (IL-2) administration, thus improving the antiviral function of T cells. Removing MHC-I from all KCs – including KC2 – or selectively depleting KC2 Impaired the capacity of IL-2 to revert the T cell dysfunction induced by intrahepatic priming.

In summary, by sensing IL-2 and cross-presenting hepatocellular antigens, KC2 overcome the tolerogenic potential of the hepatic microenvironment, suggesting new strategies for boosting hepatic T cell immunity.

**Possibility for online connection: click [HERE](#)**

Further information: [phd.experimental-medicine@unimi.it](mailto:phd.experimental-medicine@unimi.it)



PhD in Experimental Medicine - University of Milan



@DMEM\_PhDunimi