1. Personal Background

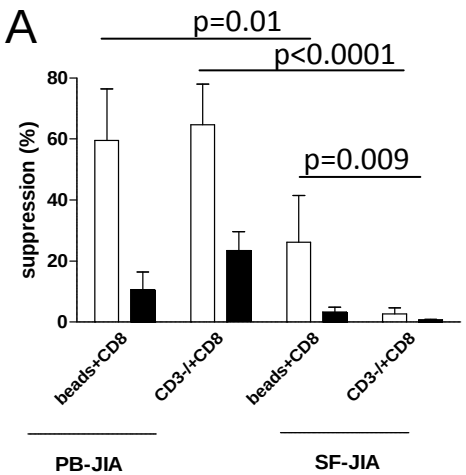
Alessandra Petrelli (ESR2)

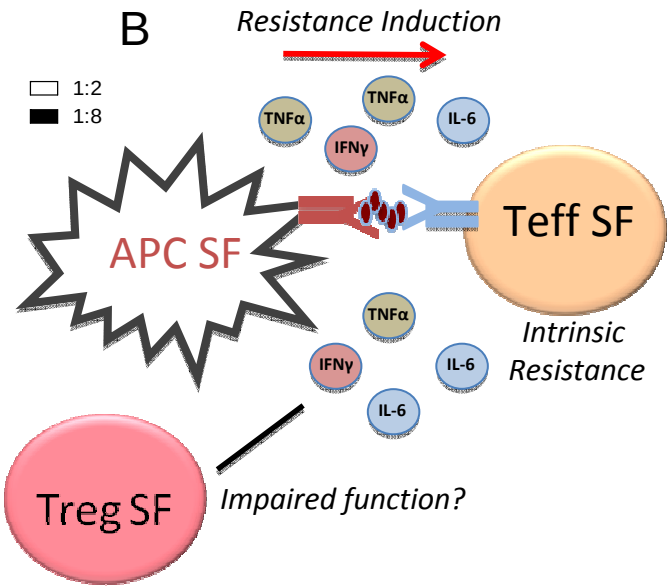
City of origin	Bari, Italy
Education	MD degree, Università Vita Salute San Raffaele, Milan, Italy (2007)
Clinical Training	- Specialization in Internal Medicine, Dep. of Transplant Medicine, Ospedale San Raffaele, Milan (2008-2013)
Research Training	- Research Fellowship in Pediatric Immunology, Department of Nephrology, Childrens Hospital, Harvard Medical School, Boston, MA (2009-2010) - Research Fellowship in Immune Tolerance, Diabetes Research Institute, Ospedale San Raffaele, Milan (2011-2012) - PhD student in Infection & Immunity, UMC Utrecht (2013-present)
Interests	- Autoimmune (T1D, RA/JIA) and alloimmune response (organ and cell transplantation). I'm interested in understaning the mechanisms of T cell activation and Treg-mediated suppression with the ultimate goal to halt the immune response towards auto/allo-antigens.

2. Projects outline

PROJECT 1

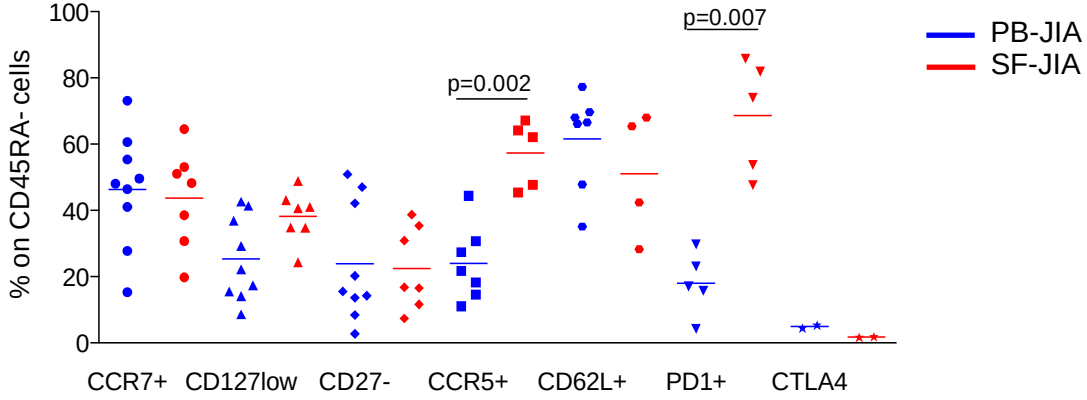
- Teff cells from the synovial fluid (SF) of JIA patients are resistant to suppression (*Wehrens, Blood 2011)*
- APC from the SF induce resistance to tolerance *(Wehrens E, A&R, 2013)*
- Treg from the SF are functional (*Wehrens E, Blood 2011, Haufe S, A&R 2011)* → in presence of PB-APC, are impaired *(Nie H, Nat Med 2013)* in absence of APC





PROJECT 2

- CD8 T cells are effectors in autoimmune inflammation
- SFMC are enriched in PD1+CD8+ T cells (C).
- PD1+CD8+ T cells in the SF have a mixed phenotype of exhausted/cytotoxic cells



Confidential data

3. Plans for next year

PROJECT 1

- cross-over experiements to define whether Tregs from the SF have impaired function in absence of APC
- Elucidate the mechanism of Teff cell resistance to suppresion. Is it only TNFα-mediated or cell-to-cell contact has a role?
- Potentially expand the conclusions to the site of inflammation of other autoimmune diseases (i.e pancreatic lymphnodes of T1D, IBD infiltrate, etc)

PROJECT 2

- Phenotypic characterization of PD1+CD8+ T cells
- Generation of PD1+ and PD1-CD8+ T cell clones from the PB and the SF of JIA patients to: evaluate cytokine production upon stimulation and proliferative response to PD1 triggering, studying PD1 signaling, test differential resistance to suppression,

TRAINING

- Attend the YIM (PReS) and present the preliminary data in Ljubljana (Sept. 2013)
-Attend the FOCIS congress, Chicago 2014
-Collaborate with ESR 8, San Raffaele, Milan to generate single cell clones
-Collaborate with ESR1, UMC Utrecht, to study molecular pathways of PD1+CD8+ T cells