| Tecnologie Convergenti per i Sistemi Biomolecolari (TeCSBi)<br>Converging Technologies for Biomolecular Systems (TeCSBi) | |
|---|---|
| **Progetto di ricerca**<br>**Research project** | *"Delivering autoantigens in the liver to induce tolerance and treat autoimmune diseases"* **PROG. 1** |
| **Tipo/Type** | Borsa Dipartimentale<br>Department Scholarship |
| **Borse/Scholarships** | 1 |
| **Abstract** | Immunological self-tolerance is the acquired, specific inability of the immune system to respond to self-antigens. This immune tolerance state is induced by exposure of the adaptive immune system to self-antigens in primary, secondary, and non-lymphoid organs. Various overlapping and distinct mechanisms contribute to the induction and maintenance of tolerance in both central and peripheral compartments. Defects in these mechanisms can lead to the activation of autoimmune responses, potentially resulting in tissue damage and the development of autoimmune diseases.<br>A subpopulation of cells of the adaptive immune system, known as regulatory T cells (Tregs), plays a fundamental role in maintaining peripheral T cell tolerance. Therefore, expanding autoantigen-specific Tregs may represent a means of treating autoimmune diseases by restoring T cell unresponsiveness to specific autoantigens. The liver is an organ characterized by an immunosuppressive environment with the capacity to give rise to Tregs. The goal of this project is to exploit the tolerogenic properties of the liver to generate autoantigen-specific Tregs by delivering autoantigens to the liver using nanoparticles as a delivery system.<br>We expect to identify an efficient liver delivery system to facilitate antigen presentation and Treg differentiation in the liver, leading to the expansion of autoantigen-specific Tregs and the restoration of T cell tolerance in the context of autoimmunity. |
| **Tutor** | Prof. Francesca Granucci (UNIMIB) |
| **Mesi previsti all'estero/Expected months abroad** | Da definire/To be defined |
| **Specific IPR rules:** standard | |