

# Cristina Manara CV

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Nationality: Italian

Birth Date: 19/01/1989

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## WORK EXPERIENCE

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### *Present position*

**Associate Scientist in Preclinical R&D** at **GSK Vaccines s.r.l.**, Preclinical Evidence Generation and Bioassays 2 Unit, Siena, Italy. Supervisor: Ugo D'Oro. Head of Department: Oretta Finco.

Support to the self-amplifying mRNA (SAM) platform team in GSK Rockville (US)

#### *Activities:*

- Study of the mechanism of immune response induced by SAM vaccine immunization
- Design and analysis of animal model experiment
- Laboratory management
- Support to DARPA milestones.

### *Nov 2014- Oct 2017*

**Ph.D. thesis work** at the Department of Antigen identification and Molecular Biology, **Preclinical R&D GSK Vaccines**, Siena, in association with the Università "La Sapienza" Roma, Italy. Supervisor: Elisabetta Frigimelica. Head of Department: Isabel Delany. *Topic:* Investigating strategies to enhance the immunogenicity and efficacy of self-amplifying mRNA vaccines. Evaluate the effect of antigen presenting cells recruitment at the site of SAM vaccine injection.

GM-CSF encoded by SAM vaccine was chosen as chemoattractant to induce an increased recruitment of antigen presenting cells and was co-administered with a SAM encoding for Nucleoprotein antigen (NP).

*Results:* Co-administration of SAM(GM-CSF) with SAM(NP) significantly improved the frequency of NP-specific CD8 T-cells, their cytotoxic activity *in vivo* and the protection efficacy after an Influenza challenge.

*Side Project:* In addition to the PhD project, I have also collaborated to support the DARPA milestones related to SAM vaccine.

### *Feb 2014- Aug 2014*

**Internship** at the Department of Immunology, **Novartis V&D Research Centre**, Siena, Italy. Supervisor: Anja Katharina Seubert. Head of Department: Ennio DeGregorio.

*Topic:* Analysis of the reactogenicity of GMMA from *B. pertussis*. Set-up of a multiplex bead ELISA to evaluate the humoral response to *B. pertussis* candidate vaccine antigens.

## EDUCATION

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### *Nov 2014- Oct 2017*

**Ph.D. in Cellular Biology** at "La Sapienza Università di Roma".

*Thesis title:* "Increasing antigen presenting cells at the injection site improves SAM vaccine efficacy". The final defense was evaluated with Excellent.

Nov 2013- Jan 2014

**Qualification to practice as biologist** at “ Università degli Studi di Palermo”

Nov 2011- Oct 2013

**Master Degree in Medical Biotechnology and Molecular Medicine**

at “Università degli Studi di Palermo ” with 110/110 cum laude.

*Thesis Title:* “Study of the role of Leukocyte function-associated antigen-1 (LFA-1) integrin in the leukocyte adhesion cascade”.

Master thesis work (during the ERASMUS experience) at the Department of Biochemistry at the “University of Helsinki” under the supervision of Mikaela Grönholm and Carl Gahmberg.

*Topic:* Study of the role of  $\alpha$  and  $\beta$  integrins phosphorylation in the regulation of leukocytes adhesion and migration.

Nov 2007- Oct 2011

**Bachelor Degree in Biotechnology**

at “Università degli Studi di Palermo ” with 110/110 cum laude.

*Thesis Title:* “CD8<sup>+</sup> T-cells Cytotoxic Activity against *Mycobacterium tuberculosis* peptides presented by HLA-E molecules”. Supervisor: Nadia Caccamo.

Sep 2002- Jul 2007

**High School Scientific Diploma** at “Liceo Scientifico G. Galilei” with 100/100, Palermo, Italy.

## LANGUAGES, SKILLS

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**Languages:** **Italian** (Native speaker); **English** C2 (Advanced) certified by Trinity College , **French** (Basic) certified by Delf A2

**Personal Skills:** teamwork oriented, strong communication and problem solving skills; ability to analyze data and present; ability to prepare detailed technical reports; flexibility and capability to work on multiple projects and tasks in an organized and efficient manner; autonomy in work.

### **Technical Skills:**

- Ability to manipulate bacterial cultures (BSL-1)
- Ability to manipulate cell lines and primary cells
- Affinity chromatography
- Molecular biology techniques (PCR, cloning, agarose gel electrophoresis, SDS-PAGE)
- RNA *in vitro* synthesis and formulation
- FACS based assays (Intracellular cytokine staining, *in vivo* cytotoxicity performed by stimulating murine splenocytes with different peptides, labelling with different fluorochromes and injecting intravenously to immunized mice. The number of stained cells recovered in injected mice was evaluated by FACS to determine the specific killing induced by cytotoxic CD8 T cells)
- T-cells isolation, labelling and adoptive transfer
- Cellular assays (Migration of leukocytes towards chemotactic signals, adhesion of leukocytes to endothelial cells, *in vitro* differentiation assay of bone marrow derived monocytes in macrophages and dendritic cells )
- Western Blot, ELISA, multiplex bead ELISA
- Cytokine evaluation in sera (Luminex)

**IT Skills:** Microsoft Office; Microsoft Outlook for Business; Electronic Lab Notebook; Vector NTI (primer design; in silico cloning; sequence analysis); GraphPad Prism, Flow Jo and Diva Softwares.

**Congresses and Courses:**

- Invited speaker to present the data produced during the PhD project at **Self-amplifying mRNA vaccine Workshop** in GSK Research Center Rockville (US), 16-17 October 2017. The workshop was organized to summarize and share the most important achievements of the platform.
- Selected for oral presentation for “Formulation and Delivery Session” at **Modern Vaccines Adjuvants and Delivery Systems Congress** in Porto, 12-14 September 2017
- Attendance to **DISCo Transferable Skills Course** in Siena, 19-21 June 2017, sponsored by Marie Curie Actions. Course Agenda: How to write an abstract (with practical exercise); Communication skills: a focus on industry; Writing short and Power Point presentation skills (with practical exercise); How to protect Intellectual Property in R&D: focus on patents.
- Attendance to the **Course on Science of laboratory animals**, February 2017. Modules related to Appendix V, art 23 D.lgs 26/2014: Legislation; Code of conduct; Biology and animal fostering; Animal management; Pain, suffering, anaesthesia, surgery; Humane endpoints; Research projects presentation to the Italian Ministry.
- Attendance to the **11<sup>th</sup> ENII Summer School on Advanced Immunology** in Sardegna, 7-14 May 2016, presenting a Poster that showed the preliminary results of my PhD project entitled “Enhancing SAM Vaccine Efficacy”.

**Publications:** First author manuscript under submission

“SAM GM-CSF co-administration as powerful tool to enhance the potency of RNA vaccination”

**C.Manara**, M. Brazzoli, D. Piccioli, M. Taccone, U. D’Oro, D. Maione, E. Frigimelica

**Recognitions:**

- **Global Employee Recognition**, received on the 31<sup>st</sup> of July 2018 from Nicolas Delahaye, SAM project Leader in GSK Rockville for the dedication, hard work and commitment to the SAM collaboration to DARPA.
- At the PhD workshop in GSK Vaccines 8-9 November 2017, my presentation was evaluated with the highest ranking for the ability to present and the capability to answer to questions.

**Other:** Drive license (B)

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