

Marina Natoli

marina.natoli@unibas.ch

Nationalities: Italian, British

Education

PhD, Clinical Medicine Research (Surgery and Cancer), 2016-2020	Imperial College London
MSc, Biomedical Sciences, 2013- 2014, Award: Distinction	University College London
BSc, Medical Biotechnology, 2009-2013, Award: 110, summa cum laude	Università degli Studi di Palermo
BA, Piano Performance and Music theory, 2006-2013, Award: 10/10	Music Conservatory 'Vincenzo Bellini'

Employment and research experience

Postdoctoral Scientist, Universitätsspital Basel (January 2020 – present)

Prof Zippelius' Cancer Immunology Research Group

Doctoral Researcher, Imperial College London (July 2016 – January 2020)

Prof Ghaem-Maghami's Tumour Immunology and Immunotherapy Research Group

Graduate Teaching Assistant and Mini Research Project (MRP) Lead, Imperial College London (July 2016 – January 2020)

Research Assistant, Imperial College London (September 2014– July 2016)

Prof Ghaem-Maghami's Tumour Immunology and Immunotherapy Research Group

MSc researcher, University College London (April 2014– September 2014)

Dr Adam Giangreco's research group in UCL Lungs for Living Research Centre

BSc researcher, National Research Council - Institute of Biomedicine and Molecular Immunology (Palermo, Italy) Sep 2012-Feb 2013

Dr Agata Giallongo's molecular and cellular biology research group

Key skills and expertise

Practical research and analytical skills

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- Isolation, expansion and/or genetic engineering (CAR-T) of different subsets of human immune cells from whole blood or mouse immune cells from spleen; isolating and culturing primary tumour cells from tissue samples or fluids (i.e. ascites).
 - Development of various tumour cell:immune cell co-culture systems and their application (some examples: immune killing assays, Incucyte live cell imaging, proliferation assays)
 - *In vitro* and *in vivo* characterisation of chemotherapy-immunotherapy (e.g. immune checkpoint blockade, CAR-Ts/gamma delta T cells) combinations.
 - Expertise in multi-colour (up to 30) manual or high-throughput flow cytometric analysis of primary human/murine immune cells, human epithelial tumour cell lines, human primary tumour cells and other primary cells in the tumour microenvironment.
 - General molecular biology skills: cell culture, ELISAs, Flow cytometry, RNA/DNA extraction and quality assessment, PCR and DNA electrophoresis, qPCR, Western Blotting, NGS (RNA-seq, single-cell RNAseq) library preparation and quality assessment, immunofluorescence, RNAi, bead-based multiplexed immunoassays and bisulfite pyrosequencing.
 - Data analysis and presentation using RStudio, Prism, Microsoft Excel, FlowJo, among other software.
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Bioinformatics: Processing, analysis and visualisation of NGS data (RNAseq, scRNAseq), using Bash on a Linux server and R. Analysis, visualisation and differential discovery in high-dimensional flow cytometry datasets (Aurora).

Science communication: I have a track record of effectively presenting scientific work, mine or others', to scientific or lay audiences in a variety of formats (oral presentations, writing of scientific publications and abstracts, designing of poster presentations, volunteering at museums, teaching of higher education students).

Reviewing of scientific work: Reviewing of scientific publications submitted to journals including *Science Translational Medicine*, *PNAS*, *Genomics*.

Achievements

Publications

- **Natoli M.** et. al., *Plinabulin, a distinct microtubule-targeting chemotherapy, promotes M1-like macrophage polarization and anti-tumor immunity* **Frontiers in Oncology**. 2021 Mar 3;11:644608. doi:10.3389/fonc.2021.644608. eCollection 2021.
- **Natoli M.** et. al., *Transcriptional analysis of multiple ovarian cancer cohorts reveals prognostic and immunomodulatory consequences of ERV expression*. **Journal for ImmunoTherapy of Cancer** 2021;9:e001519. doi: 10.1136/jitc-2020-001519.
- Rodriguez-Mantuano N.*, **Natoli M.*** et al., *Tumour-associated carbohydrates and immuno-modulatory lectins as targets for cancer immunotherapy*. **Journal for ImmunoTherapy of Cancer** 2020;8:e001222. doi: 10.1136/jitc-2020-001222. (***Co-first authorship**).
- **Natoli M.** et. al., *Human ovarian cancer intrinsic mechanisms regulate lymphocyte activation in response to immune checkpoint blockade*. **Cancer Immunol Immunother**. 69, 1391–1401 (2020). <https://doi.org/10.1007/s00262-020-02544-5> (In collaboration with AstraZeneca UK).
- Wahba J.*, **Natoli M.*** et al., *Chemotherapy-induced apoptosis, autophagy and cell cycle arrest are key drivers of synergy in chemo-immunotherapy of epithelial ovarian cancer –* **Cancer Immunol Immunother**. 2018 Nov;67(11):1753-1765. doi: 10.1007/s00262-018-2199-8. Epub 2018 Aug 24. (**Co-first authorship**).
- Spiliopoulou P., Spear S., Mirza H., Garner I., McGarry L., Grundland-Freile F., Cheng Z., Ennis DP., McNamara S., **Natoli M.** et. al., *Dual G9A and EZH2 inhibition stimulates an anti-tumour immune response in ovarian high-grade serous carcinoma* **biorxiv**. 2021 doi: <https://doi.org/10.1101/2021.05.09.443282>

Published abstracts:

- **Natoli M.** et al. *Immunomodulatory action of SGI-110 and combination with gamma-delta T cell immunotherapy in ovarian cancer*. Abstract 4567, Proceedings of the American Association for Cancer Research, Volume 59, April 2018.
- Wahba J., **Natoli M.** et al. *Synergistic immuno-chemotherapy for ovarian cancer*. July 2016. BJOG-AN INTERNATIONAL JOURNAL OF OBSTETRICS AND GYNAECOLOGY, Vol: 123, Pages: E6-E7, ISSN: 1470-0328.
- Wahba J., **Natoli M.** et al. *Determining a mechanism of synergistic immuno-chemotherapy in ovarian cancer*. July 2016. European Journal of Cancer 61(1):S217-S218. DOI: 10.1016/S0959-8049(16)61767-7.

Research work presentations

- 8-13 February 2015 – Banff, Canada - The Keystone Symposia - **Poster Presentation**
- 12-15 April 2015 - Brisbane, Australia - RCOG World Congress 2015 - **Poster Presentation**
- 12-13 May 2016 - Birmingham, United Kingdom - BGCS Annual Scientific Meeting - **Poster Presentation**
- 9–12 July 2016 - Manchester, United Kingdom - 24th Biennial Congress of the European Association for Cancer Research (EACR24) - **Poster Presentation**
- 12-13 May 2017 – London, UK- The Institute for Cancer Vaccines and Immunotherapy (ICVI) –Third International Symposium on Immunotherapy – **Poster and Oral presentations**
- 13 June 2017 – London, UK – Imperial College London Work in Progress Seminar Series - Immunomodulatory action of Guadecitabine and combination with gamma delta T cell immunotherapy in Ovarian Cancer - **Oral presentation**
- 24-28 June 2017 – Florence, Italy - 2nd EACR-AACR-SIC Special Conference: The Challenges of Optimising Immuno and Targeted Therapies – **Poster presentation**
- 7-11 August 2017 – Hong Kong, China – AACR Croucher Summer Course in Cancer Biology – **Poster presentation**
- 9-12 October 2017 – Barcelona, Spain – EACR conference on Defence is the Best Attack: Immuno-Oncology Breakthroughs – **Poster presentation**
- 2 November 2017 – Helsinki, Finland - 70th Annual Meeting of the Finnish Endocrine Society - Immunological profiling of ovarian tumours & immune-regulatory mechanisms in ovarian cancer – **Invited Speech**
- 14-18 April 2018 – Chicago, IL - AACR Annual Meeting – **Poster Presentation**

- 23 October 2018 – London, UK – Imperial College London Work in Progress Seminar Series - DNMTi-driven immunomodulation of ovarian cancer via induced expression of endogenous retroviruses - **Oral presentation**
- 16 October 2020 – Basel, Switzerland - 4th Annual Meeting of the EUCOR-Upper Rhine Immunology Group – Plinabulin, a microtubule-targeting chemotherapy agent, directly influences M1-like macrophage polarization and anti-tumor immunity - **Oral presentation**

Funding acquisition, awards and recognitions

- February 2013 – **Special honourable mention** on Dissertation 'The over-expression of microRNA miR-206 and the myogenic transcriptional factor MyoD in an in vitro model for skeletal muscle differentiation'
- April 2015 - **Singulex SMC Technology Innovation Award** for the project "Investigating the role of sPDL-1 as a diagnostic and prognostic biomarker in ovarian cancer"
- January 2016 – Medical Research Council 3.5 year **PhD Studentship**
- January 2017 – Medical Research Council **Colloquium Writing competition – 1st Prize**
- May 2017 – Medical Research Council Supplement Scheme – **Exceptional training opportunities funding**
- July 2017 – Imperial College Trust – **Travel Award**
- August 2017 – **EACR Meeting Bursary** (Defence is the Best Attack: Immuno-Oncology Breakthroughs)
- January 2018 – **Genesis Research Trust Grant** – Award 1804 for the project "Immunomodulatory action of Guadecitabine and combination with $\gamma\delta$ T cell immunotherapy" (
- March 2018 - Medical Research Council Supplement Scheme – **Industry Training Fund**
- August 2018 – **Associate fellowship of the Higher education academy** (AFHEA, teaching recognition in the UK)
- January 2020 - Medical Research Council Supplement Scheme – **PhD to Postdoctoral Transition Award**
- April 2021 – **University of Basel Research Grant**

Professional memberships/licences: Society of Biology licence to carry out regulated procedures on mice, as regulated by the Animals (Scientific Procedures) Act 1986 (UK).