

## Aldo Ummarino, MD

Via Carlo Valvassori Peroni 61, 20133, Milan – Italy

[a.ummarino@gmail.com](mailto:a.ummarino@gmail.com)

### Profile

Enthusiastic Medical Doctor with a strong interest in pre-clinical research. Solid background in laboratory research gained thanks to several years (2010-ongoing) spent in different Italian top-ranked laboratories (IRCCS “Casa Sollievo della Sofferenza”, “C.R.O.B.”, Humanitas Research Hospital, Harvard Medical School). Currently enrolled as a Ph.D. candidate in Humanitas University (dissertation due in December 2024) working on pancreatic cancer immunotherapy with an individual fellowship funded by AIRC/FIRC (Italian Association for Cancer Research).

### Education

01/01/2021 – ongoing - **Ph.D. Candidate**, [Humanitas University](#) - Pieve Emanuele (MI) | Italy

**Project:** Reprogramming of Tumor-Associated Macrophages with TLR agonist-loaded nanocapsules to fight lung and pancreatic cancer.

**Tutor:** prof. Paola Allavena; **Scientific director:** prof. Alberto Mantovani

*Project granted with a [3-year individual fellowship](#) from AIRC/FIRC*

17/09/2012 – 26/03/2019 - **Doctor of Medicine (MD)**, [University of Foggia](#) | Italy

**Final grade:** 110/110 cum laude

**Final dissertation:** Epigenetic markers predictive of first-line chemotherapy resistance in patients with metastatic colo-rectal cancer (experimental study) | *Worth of mention*

**Tutor:** prof. Matteo Landriscina

*License to practice Medicine in Italy (National Board number 7377 - Order of Medical Doctors and Dentists of Province of Foggia).*

### Work Experience

03/2023 – 09/2023 – **Visiting Ph.D. Student in Immunology**, [Harvard Medical School/Boston Children’s Hospital](#) - Boston | MA | USA | **Tutor:** prof. Ivan Zanoni

[\(https://www.zanonilab.com/\)](https://www.zanonilab.com/)

*During the stay, Dr Ummarino worked to dissect the role of interferons in pancreatic cancer.*

13/11/2019 – 13/11/2020 - **Research fellow**, [Humanitas University](#) - Pieve Emanuele (MI) | Italy

**Project:** Meniscal functionalised scaffold to prevent knee Osteoarthritis onset after meniscectomy - Funding from the EU’s Horizon 2020 research and innovation programme under grant agreement No 814444.

**Tutors:** prof. Elizaveta Kon, prof. Paola Allavena

*Dr Ummarino’s role in this project was to optimize a new in vitro protocol of long-lasting inflammation using macrophages to mimic osteoarthritis.*

## Researcher profile

**h-index:** 8; **Number of publications:** 18 | As first author: 5 | As corresponding author: 1

**Total citations:** 310 (last update: 2023-09-25). ORCID: 0000-0002-8623-0338

The complete list of publications is attached at the end of the CV.

## Participation to conferences

20/09/2023 – 23/09/2023 | **CICON23** (Milan, Italy)

**Poster** presentation – “Combined administration of Poly(I:C) and resiquimod triggers effective antitumoral response in mouse models of pancreatic adenocarcinoma”

**A. Ummarino**, C. Anfray, A. Mariancini, D. Supino, C. Garlanda, F. T. Andòn, A. Mantovani, P. Allavena.

14/04/2023 – 19/04/2023 | **AACR ANNUAL MEETING 2023** (Orlando, Florida, USA)

**Poster** presentation – “Combined administration of Poly(I:C) and resiquimod triggers effective antitumoral response in mouse models of pancreatic adenocarcinoma”

**A. Ummarino**, C. Anfray, A. Mariancini, D. Supino, C. Garlanda, F. T. Andòn, A. Mantovani, P. Allavena.

16/11/2022 – 18/11/2022 | **62<sup>nd</sup> annual meeting of the Italian Cancer Society** (Venice, Italy)

**Poster** presentation – “The intratumoral administration of poly(I:C) and resiquimod triggers effective antitumoral response in murine models of pancreatic adenocarcinoma (PDAC)”

**A. Ummarino**, C. Anfray, A. Mariancini, D. Supino, C. Garlanda, F. T. Andòn, P. Allavena.

13/10/2022 – 15/10/2022 | **XX NIBIT Annual Meeting** (Padua, Italy)

**Oral** presentation – “The intratumoral administration of poly(I:C) and resiquimod triggers effective antitumoral response in murine models of pancreatic adenocarcinoma (PDAC)”

**A. Ummarino**, C. Anfray, A. Mariancini, D. Supino, C. Garlanda, F. T. Andòn, P. Allavena.

22/05/2022 – 25/05/2022 | **XIII SIICA National Congress 2022** (Naples, Italy)

**Poster** presentation – “A novel in vitro model of long-lasting inflammation using primary human macrophages for osteoarthritis research”

**A. Ummarino**, R. Migliore, L. A. Ruggiero, F. Ronzoni, F. T. Andón, E. Kon, P. Allavena.

11/10/2013 – 15/10/2013 | **United European Gastroenterology** (Berlin, Germany)

**Oral** presentation – “Optimization of upper gastrointestinal endoscopy: value of real-time gastric juice analysis”

**A. Ummarino**, F.A. Tucci, G. Pezzicoli (speaker), D. Parigino, A.P. Di Virgilio, P. Tucci, M. Rugge, A. Tucci, A. Andriulli.

11/11/2011 – 11/11/2011 | **Disordini Funzionali Gastrointestinali** (Vieste, Foggia, Italy)  
**Invited speaker** – Title of the talk: “Il gonfiore addominale funzionale” (with A. Tucci, G. Pezzicoli, F.A. Tucci).

### Referee activity

A. Ummarino served as referee for the following journals: **Cells, Cellular and Molecular Immunology, Central European Journal of Immunology, Cancer Immunology Immunotherapy, Frontiers in Immunology, Frontiers in Oncology, Journal of Hematology and Oncology, Journal of Nanobiotechnology, Journal of Pain Research, Scientific Reports, Stem Cells International**. Further details on his Web of Science Profile (ID: [AAE-2160-2021](#)).

### Teaching activity

11/2019 – 11/2021 | **Practical sessions in Histology and Anatomy** | Humanitas University, Pieve Emanuele (MI) | Italy.

*Paola Allavena, professor of Histology, and Isabella Barajon, professor of Human Anatomy, proposed him for this activity for first year medical students.*

2018 – 2021 | **Lecturer in Human Anatomy (“Cultore della materia”)** | University of Foggia, Foggia (FG) | Italy.

*Angela Bruna Maffione, professor of Human Anatomy, proposed him for this title (approved with act n°674/2019)*

2013 – 2019 | Teacher in the **School of Biomedical Sciences** – [Agorà Biomedical Sciences](#) | Lesina, Foggia (FG), Italy.

- *Train primary school (11-years old) students to biomedical sciences (Biology, Genetics, Histology, Human Anatomy, Immunology, General Pathology).*
- *Early enter the biomedical research activity.*
- *Former fellows trained by Dr. Ummarino: Vincenzo Troiano, Raffaele Ianzano, Miriam Potenza, Andrea Carafa, Giovanni Cavallo (all MD/MD students), Lucia Orziero (nurse).*

### Research tutoring

A. Ummarino tutored during his activity four MD students and one Ph.D. student.

### Public scientific dissemination

2013 – ongoing | **Co-creator of the YouTube Channels “[Agorà Scienze Biomediche](#)” and its English counterpart “[Agorà Biomedical Sciences](#)”**

- Original lessons in several biomedical areas
- One of the top-ranked YouTube channel in its field in Italy (**145,000 subscribers: almost 30 million views**).

2018 | [FameLab](#) local selections – Agorà Biomedical Sciences in collaboration with University of Foggia

*Dr. Ummarino contributed to organize the local selections of FameLab in 2018. This is a European scientific competition for undergraduate students and young researchers, with different events spread all over Italy. The winner for Italy challenges other scientists in the final event in London (UK).*

### **Management and leadership skills**

2021 – 2023 | **Representative of Ph.D. students in Humanitas University**

*Dr. Ummarino task involved organizing Journal Clubs and meetings for Ph.D. students in Humanitas University. Plus, Dr. Ummarino organized dissemination activities on social media of our institution, to improve the visibility of the work carried out by Ph.D. students.*

2016 – ongoing | **Vicepresident of “Agorà Biomedical Sciences”**

*As vicepresident, Dr. Ummarino cooperated with the president (Antonio Tucci, MD) for the organization of the activities of the School of Biomedical Sciences and in the research activities of the lab of the association (Etromapmacs Pole).*

### **Conferences organization**

09/06/2022 – 10/06/2022 | [7th Ph.D. student meeting](#)

*Together with the representatives of other PhD students in Milan, Dr. Ummarino organized this congress entirely dedicated to Ph.D. students. To this purpose, Dr. Ummarino contributed to the selection of the abstracts as a member of the Scientific Committee and in their evaluation of the awards. At the same time, Dr. Ummarino was involved in the organization of the event and in the recruitment of the sponsors.*

### **Fellowships**

01/01/2021 – ongoing | **3-year fellowship for Italy from Italian Association for Cancer Research (AIRC/FIRC). Title:** Reprogramming of Tumor-Associated Macrophages with TLR agonist-loaded nanocapsules to fight lung and pancreatic cancer.

06/02/2023 | **Travel grant from Boehringer Ingelheim Fonds (BIF)** to visit the laboratory of prof. Ivan Zanoni (Harvard Medical School, Boston, MA, US) from 03/2023 to 05/2023 | Mainz, Germany

16/11/2022 | **Travel grant for 62<sup>nd</sup> annual meeting of the Italian Cancer Society** (Venice, Italy)

10/2013 | **Travel grant United European Gastroenterology (UEG)**, Berlin | Germany

### **Awards**

23/12/2022 | **Best poster presentation award from PhD Evaluation Commission**, Humanitas University, Pieve Emanuele (MI) | Italy

20/09/2019 | **Best graduate of the year in Medical and Surgical Sciences**, University of Foggia (FG) | Italy

### **Memberships**

17/02/2023 - ongoing | **Associate member of the American Association for Cancer Research (AACR)**, Nominator: prof. Alberto Mantovani.

16/11/2022 – ongoing | Student member of the “**Società Italiana Cancerologia**” (SIC)

13/10/2022 – ongoing | Member of the **Italian Network for the Tumor Biotherapy (NIBIT)**

### **Clinical experience**

31/03/2021 – 30/07/2021 | **Vaccinator during COVID-19 pandemic**, IRCCS "Humanitas Research Hospital", Rozzano (MI) | Italy

2016 – 2019 | **Internship in Medical Oncology Unit**, “Riuniti” General Hospital | Foggia (FG) | Italy | Supervisor: prof. Matteo Landriscina

20/01/2014 | **Basic Life Support Defibrillation (BLSD) course**, “Riuniti” General Hospital | Foggia (FG) | Italy

### **Language skills**

Mother tongue: Italian

Other language: English (C1 level certified in 2016 by Cambridge University – CAE, Certificate in Advanced English, grade C).

### **Digital skills**

Microsoft Word | Microsoft Excel | Microsoft PowerPoint | FlowJo | QuPath.

### **Driving licence**

**Cars: B**

## Complete list of publications

### Original research articles

1. **An in vitro model for osteoarthritis using long-cultured inflammatory human macrophages repeatedly stimulated with TLR agonists**  
A. Ummarino, A. Pensado-López, R. Migliore, L. Alcaide-Ruggiero, N. Calà, M. Caputo, F. M. Gambaro, C. Anfray, F. L. Ronzoni, E. Kon, P. Allavena, F. T. Andón. *European Journal of Immunology* 2023; Sep 15:e2350507 – IF: 6.7
2. **Important functional role of the protein Osteopontin in the progression of malignant pleural mesothelioma**  
E. Digifico, M. Erreni, L. Mannarino, S. Marchini, A. Ummarino, L. Bertola, C. Recordati, D. Pistillo, M. Roncalli, P. Bossi, P. Zucali, M. D’Incalci, C. Belgiovine, P. Allavena  
*Frontiers in Immunology* 2023; doi: 10.3389/fimmu.2023.1116430 – IF: 7.3
3. **A PCR-based method for the diagnosis of *Enterobius vermicularis* in stool samples, specifically designed for clinical application.**  
A. Ummarino, M. Caputo, F. A. Tucci, G. Pezzicoli, A. Piepoli, A. Gentile, T. Latiano, A. Panza, N. Calà, A. P. Ceglia, G. Pistoio, V. Troiano, M. Pucatti, A. Latiano, A. Andriulli, A. Tucci, O. Palmieri.  
*Frontiers in Microbiology*, 2022; 10.3389/fmicb.2022.1028988 – IF: 6
4. **Mannose-modified hyaluronic acid nanocapsules for the targeting of tumor associated macrophages**  
I. Fernández-Mariño, C. Anfray, J. Crecente-Campo, A. Maeda, A. Ummarino, C. Teijeiro-Valiño, D. Blanco-Martínez, F. Mpambani, L. Poul, J. Devalliere, M. Germain, J. Correa, M. Fernandez-Villamarin, P. Allavena, E. Fernandez-Megia, M. J. Alonso, F. T. Andón  
*Drug Delivery and Translational Research*, 2022; Dec 6. – IF: 5.7
5. **BNT162b2 vaccine induces antibody release in saliva: a possible role for mucosal viral protection?**  
A. Darwich, C. Pozzi, G. Fornasa, M. Lizier, E. Azzolini, I. Spadoni, F. Carli, A. Voza, A. Desai, C. Ferrero, L. Germagnoli, ICH COVID-19 Task-force; A. Mantovani, M. Rescigno.  
*EMBO Molecular Medicine* 2022; Apr 7;e15326. – IF: 14
6. **A ‘Multiomic’ Approach of Saliva Metabolomics, Microbiota, and Serum Biomarkers to Assess the Need of Hospitalization in Coronavirus Disease 2019**  
C. Pozzi, R. Levi, D. Braga, F. Carli, A. Darwich, I. Spadoni, B. Oresta, C. Conca Dioguardi, C. Peano, L. Ubaldi, G. Angelotti, B. Bottazzi, C. Garlanda, A. Desai, A. Voza, E. Azzolini, M. Cecconi, ICH COVID-19 Task-force, A. Mantovani, G. Penna, R. Barbieri, L. S. Politi, M. Rescigno.  
*Gastro Hep Advances*, 2022; 1(2):194-209.

7. **Intra-tumoral combination therapy with poly(I:C) and resiquimod synergistically triggers tumor-associated macrophages for effective systemic anti-tumoral immunity.**  
C. Anfray, F. Mainini, E. Digifico, A. Maeda, M. Sironi, M. Erreni, A. Anselmo, **A. Ummarino**, S. Gandoy, F. Expòsito, M. Redrado, D. Serrano, A. Calvo, M. Martens, S. Bravo, A. Mantovani, P. Allavena, F. T. Andón.  
*Journal for ImmunoTherapy of Cancer*, 2021; 9(9): e002408
8. **Structural equation modeling to shed light on the controversial role of climate on the spread of SARS-CoV-2**  
A. Spada, F. A. Tucci, **A. Ummarino (corr. auth.)**, P. P. Ciavarella, N. Calà, V. Troiano, M. Caputo, R. Ianzano, S. Corbo, M. de Biase, N. Fascia, C. Forte, G. Gambacorta, G. Maccione, G. Prencipe, M. Tomaiuolo, A. Tucci.  
*Scientific Reports*, 2021; Apr 16;11(1):8358.
9. **Value of real-time gastric juice analysis in upper gastrointestinal endoscopy**  
**A. Ummarino**, F.A. Tucci, G. Pezzicoli, A. P. Di Virgilio, D. Parigino, P. Tucci, M. Bisceglia, M. Ruge, A. Tucci, A. Andriulli.  
*Minerva Gastroenterologica e Dietologica* 2015; 61(1):1-9.
10. **Optimization of gastrointestinal upper endoscopy: value of real-time gastric juice analysis**  
**A. Ummarino**, F.A. Tucci, G. Pezzicoli, A.P. Di Virgilio.  
*Digestive and Liver Disease*, 2014; Apr 7.2.
11. **Perendoscopic real-time assessment of pH improves detection of gastric preneoplastic conditions**  
G. Pezzicoli, F.A. Tucci, **A. Ummarino**, P. Tucci, A.P. Di Virgilio, M. Bisceglia, M. Ruge, A. Tucci, A. Andriulli.  
*Minerva Gastroenterologica e Dietologica* 2013; 59(1):97-105.4.

#### Review articles

1. **Innate and Adaptive Responses of Intratumoral Immunotherapy with Endosomal Toll-Like Receptor Agonists**  
F. T. Andón, S. Leon, **A. Ummarino**, E. Redin, P. Allavena, D. Serrano, C. Anfray, A. Calvo.  
*Biomedicines*, 2022; 4;10(7):1590.
2. **Therapeutic manipulation of tumor-associated macrophages: facts and hopes from a clinical and translational perspective**  
P. Allavena, C. Anfray, **A. Ummarino**, F.T. Andón  
*Clinical Cancer Research*, 2021; Jun 15;27(12):3291-3297
3. **Drug delivery systems for the treatment of knee osteoarthritis: a systematic review of in vivo studies**  
F. M. Gambaro, **A. Ummarino**, F. T. Andón, F. Ronzoni, B. Di Matteo, E. Kon  
*International Journal of Molecular Sciences*, 2021; 22(17), 9137

4. **Targeting Tumor-Associated Macrophages in Anti-Cancer Therapies: Convincing the Traitors to Do the Right Thing**  
C. Belgiovine, E. Digifico, C. Anfray, **A. Ummarino**, F.T. Andón.  
*Journal of Clinical Medicine*. 2020; Oct 8;9(10):3226
5. **Therapeutic manipulation of macrophages using nanotechnological approaches for the treatment of Osteoarthritis**  
**A. Ummarino**, F. M. Gambaro, E. Kon, F. T. Andón.  
*Nanomaterials* 2020; 10, 1562;
6. **Current Strategies to Target Tumor-Associated-Macrophages to Improve Anti-Tumor Immune Responses**  
C. Anfray, **A. Ummarino**, F. T. Andón, P. Allavena.  
*Cells*, 2019; Dec 23;9(1):46.
7. **Unmet clinical questions in elderly patients with locally advanced and metastatic bladder cancer**  
G. Pezzicoli, **A. Ummarino**, F. Maddalena, R. Villani, E. Barret, M. Landriscina.  
*Journal of Gerontology and Geriatrics* 2018; 66:253-259.

#### Book chapters

1. **In Vitro Methods to Evaluate Macrophage Polarization and Function in Cancer**  
**A. Ummarino**, C. Anfray, A. Maeda, F. T. Andón, P. Allavena  
*The Tumor Microenvironment: Methods and Protocols, Methods in Molecular Biology (Clifton, N.J.)*. 2023;2614:81-91
2. **In Vivo Analysis of Tumor-Associated Macrophages in the Tumor Microenvironment**  
**C. Anfray**, A. Ummarino, A. Calvo, P. Allavena, F. T. Andón  
*The Tumor Microenvironment: Methods and Protocols, Methods in Molecular Biology (Clifton, N.J.)*. 2023;2614:93-108

Milan, 25/09/2023