

## Curriculum Vitae

### Personal information

Chiara Agrati

### Work experience

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- Sept 2022 – today: Head of the Unit of Pathogen Specific Immunity, Department of Pediatric Hematology and Oncology, IRCCS Ospedale Pediatrico Bambino Gesù
- Jul 2016 – August 2022: Head of the Cellular Immunology and Pharmacology Laboratory
- Jan 2008 – Jul 2016; Biologist, Permanent staff, INMI “Lazzaro Spallanzani” - I.R.C.C.S., Laboratory di Virologia, INMI "L. Spallanzani"
- Apr 2007 – Dec 2007: Researcher c/o INMI “Lazzaro Spallanzani” - I.R.C.C.S., Laboratory of Cellular Immunology. Projects: Emerging infectious diseases; cytokine storm, influenza cross-immunity
- Apr 2006 – Apr 2007: Researcher c/o INMI “Lazzaro Spallanzani” - I.R.C.C.S., Laboratory of Cellular Immunology. Projects: Emerging infectious diseases; cytokine storm, set up diagnostic tests, influenza cross-immunity
- Apr 2005 – Mar 2006: Researcher c/o INMI “Lazzaro Spallanzani” - I.R.C.C.S., Laboratory of Cellular Immunology. Projects: Cross talk between innate and adaptive cells during chronic infections; analysis of immune reconstitution in chronic HIV patients; gammadelta t cell immunity against emerging viruses (SARS-CoV and orthopoxviruses).
- Apr 2004 – Jun 2004: Researcher, temporary staff c/o INMI “Lazzaro Spallanzani” - I.R.C.C.S., Laboratory of Virology. Projects: SARS emergency; Support for SARS emergency diagnostics. Set up of immunological test to evaluate the antigen specific T cell response.
- Jan 2004- Mar 2005: Researcher, INMI “Lazzaro Spallanzani” - I.R.C.C.S., Laboratory of Cellular Immunology. Project: Innate immune response during HCV infection
- Dec 2001 – Dec 2003: Researcher, INMI “Lazzaro Spallanzani” - I.R.C.C.S., Laboratory of Cellular Immunology. European Project: n.QLK2-CT-1999 entitled “TB vaccin cluster”
- Jul 1998 – Nov 2001: Researcher, INMI “Lazzaro Spallanzani” - I.R.C.C.S., Laboratory of Cellular Immunology. Projects: Immune response to chronic viral infections (HIV, HCV), inflammation, innate immunity.
- Nov 1996 – Giu 1998: Researcher, University of Rome “La Sapienza”. Project: Muscarinic receptor characterization on neurons

### Education and training

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- 2023: Member of the Scientific Advisory Board of the Sacro Cuore Don Calabria Institute – IRCCS

- 2022: Member of the PhD program “Innovation in Immuno-mediated and hematological disorder” at the Sapienza University in Rome
- 2022: Attestazione di avvenuto conseguimento dell’Abilitazione Scientifica Nazionale alle funzioni di professore universitario di Prima Fascia nel Settore Concorsuale 06/A2 Patologia Generale e patologia clinica.
- 2022: Attestazione di avvenuto conseguimento dell’Abilitazione Scientifica Nazionale alle funzioni di professore universitario di Seconda Fascia nel Settore Concorsuale 06/A3 – Microbiologia e Microbiologia Clinica
- 2019: Cell Sorting: “MACS-Quant Tyto”- Colonia, Germany
- 2018: Multiparametric flow cytometry: new applications, INMI L Spallanzani
- 2007: Hand-on course for handling class 4 agents, INMI L. Spallanzani - IRCCS
- 2007: International High Containment Biosafety Workshop, Canadian Science Centre for Human and Animal Health, Winnipeg, Manitoba, Canada
- 2007: PhD in Immunology, University of Rome, “Tor Vergata”
- 2003: Specialty degree in Medical Microbiology and Virology – 50/50 e lode Università di Roma “Tor Vergata”
- 1998: Degree in Biology– 110/110 e lode, Università di Roma “La Sapienza”

#### Additional information

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##### Publications

1. Mazzotta V, Lepri AC, Matusali G, Cimini E, Piselli P, Aguglia C, Lanini S, Colavita F, Notari S, Oliva A, Meschi S, Casetti R, Mondillo V, Vergori A, Bettini A, Grassi G, Pinnetti C, Lapa D, Tartaglia E, Galli P, Mondi A, Montagnari G, Gagliardini R, Nicastri E, Lichtner M, Sarmati L, Tamburini E, Mastroianni C, Stingone C, Siddu A, Barca A, Fontana C, Agrati C, Girardi E, Vaia F, Maggi F, Antinori A; Mpox Vaccine Lazio Study Group. Immunogenicity and reactogenicity of modified vaccinia Ankara pre-exposure vaccination against mpox according to previous smallpox vaccine exposure and HIV infection: prospective cohort study. *EClinicalMedicine*. 2024 Jan 12;68:102420. doi: 10.1016/j.eclinm.2023.102420. eCollection 2024 Feb.
2. Grassi G, Notari S, Cicalini S, Casetti R, Cimini E, Bordoni V, Gagliardini R, Mazzotta V, Antinori A, Agrati C, Sacchi A. In cART-Treated HIV-Infected Patients, Immunologic Failure Is Associated With a High Myeloid-Derived Suppressor Cell Frequency. *J Acquir Immune Defic Syndr*. 2024 Feb 1;95(2):185-189.
3. Vergori A, Cozzi-Lepri A, Matusali G, Cicalini S, Bordoni V, Meschi S, Mazzotta V, Colavita F, Fusto M, Cimini E, Notari S, D'Aquila V, Lanini S, Lapa D, Gagliardini R, Mariotti D, Giannico G, Girardi E, Vaia F, Agrati C, Maggi F, Antinori A. Long Term Assessment of Anti-SARS-CoV-2 Immunogenicity after mRNA Vaccine in Persons Living with HIV. *Vaccines (Basel)*. 2023 Nov 22;11(12):1739. doi: 10.3390/vaccines11121739.
4. Picchianti-Diamanti A, Navarra A, Aiello A, Laganà B, Cuzzi G, Salmi A, Vanini V, Maggi F, Meschi S, Matusali G, Notari S, Agrati C, Salemi S, Di Rosa R, Passarini D, Di Gioia V, Sesti G, Conti F, Spinelli FR, Corpolongo A, Chimenti MS, Ferraioli M, Sebastiani GD, Benucci M, Li Gobbi F, Santoro AP, Capri A, Puro V, Nicastri E, Goletti D. Older Age, a High Titre of Neutralising Antibodies and Therapy with Conventional DMARDs Are Associated with Protection from Breakthrough Infection in Rheumatoid Arthritis Patients after the Booster Dose of Anti-SARS-CoV-2 Vaccine. *Vaccines (Basel)*. 2023 Nov 2;11(11):1684. doi: 10.3390/vaccines11111684.
5. Biava M, Notari S, Grassi G, Bordini L, Tartaglia E, Agrati C, Cimini E,

Sberna G, Nicastri E, Antinori A, Girardi E, Vaia F, Maggi F, Lalle E. In Vitro and In Vivo Crosstalk between Type I IFN and IL-8 Responses in SARS-CoV-2 Infection. *Microorganisms*. 2023 Nov 16;11(11):2787. doi: 10.3390/microorganisms11112787.

6. Pinnetti C, Cimini E, Mazzotta V, Matusali G, Vergori A, Mondi A, Rueca M, Batzella S, Tartaglia E, Bettini A, Notari S, Rubino M, Tempestilli M, Pareo C, Falasca L, Del Nonno F, Scarabello A, Camici M, Gagliardini R, Girardi E, Vaia F, Maggi F, Agrati C, Antinori A. Mpox as AIDS-defining event with a severe and protracted course: clinical, immunological, and virological implications. *Lancet Infect Dis*. 2024 Feb;24(2):e127-e135. Piano Mortari E, Pulvirenti F, Marcellini V, Terreri S, Salinas AF, Ferrari S, Di Napoli G, Guadagnolo D, Sculco E, Albano C, Guercio M, Di Cecca S, Milito C, Garzi G, Pesce AM, Bonanni L, Sinibaldi M, Bordoni V, Di Cecilia S, Accordini S, Castilletti C, Agrati C, Quintarelli C, Zaffina S, Locatelli F, Carsetti R, Quinti I. Functional CVIDs phenotype clusters identified by the integration of immune parameters after BNT162b2 boosters. *Front Immunol*. 2023 May 25;14:1194225. doi: 10.3389/fimmu.2023.1194225. eCollection 2023.
7. Ruggieri S, Aiello A, Tortorella C, Navarra A, Vanini V, Meschi S, Lapa D, Haggiag S, Prosperini L, Cuzzi G, Salmi A, Quartuccio ME, Altera AMG, Garbuglia AR, Ascoli Bartoli T, Galgani S, Notari S, Agrati C, Puro V, Nicastri E, Gasperini C, Goletti D. Dynamic Evolution of Humoral and T-Cell Specific Immune Response to COVID-19 mRNA Vaccine in Patients with Multiple Sclerosis Followed until the Booster Dose. *Int J Mol Sci*. 2023 May 10;24(10):8525. doi: 10.3390/ijms24108525.
8. Santoro A, Capri A, Petrone D, Colavita F, Meschi S, Matusali G, Mizzoni K, Notari S, Agrati C, Goletti D, Pezzotti P, Puro V. SARS-CoV-2 Breakthrough Infections According to the Immune Response Elicited after mRNA Third Dose Vaccination in COVID-19-Naïve Hospital Personnel. *Biomedicines*. 2023 Apr 23;11(5):1247. doi: 10.3390/biomedicines11051247.
9. Agrati C, Bartolini B, Bordoni V, Locatelli F, Capobianchi MR, Di Caro A, Castilletti C, Ippolito G. Emerging viral infections in immunocompromised patients: A great challenge to better define the role of immune response. *Front Immunol*. 2023 Mar 9;14:1147871. doi: 10.3389/fimmu.2023.1147871. eCollection 2023.
10. Mastrorosa I, Gagliardini R, Segala FV, Mondi A, Lorenzini P, Cerva C, Taddei E, Bai F, Vergori A, Marcantonio N, Pinnetti C, Cicalini S, Murri R, Mazzotta V, Camici M, Mosti S, Bini T, Maffongelli G, Beccacece A, Milozzi E, Iannetta M, Lamonica S, Fusto M, Plazzi MM, Ottou S, Lichtner M, Fantoni M, Andreoni M, Sarmati L, Cauda R, Girardi E, Nicastri E, D'Arminio Monforte A, Palmieri F, Cingolani A, Vaia F, Antinori A; ESCAPE study group. Sarilumab plus standard of care vs standard of care for the treatment of severe COVID-19: a phase 3, randomized, open-labeled, multi-center study (ESCAPE study). *EClinicalMedicine*. 2023 Mar 10;57:101895. doi: 10.1016/j.eclinm.2023.101895. eCollection 2023 Mar.
11. Montalbano M, Piccolo P, Lionetti R, Visco-Comandini U, Agrati C, Grassi G, Meschi S, Matusali G, Conte F, Angelone F, Ettorre GM, Guglielmo N, Maggi F, Francalancia M, Mereu T, Puro V, Girardi E, D'Offizi G. Third dose of SARS-CoV2 mRNA vaccination produces robust persistent cellular and humoral immune responses in liver transplant recipients. *Liver Int*. 2023 May;43(5):1120-1125. doi: 10.1111/liv.15557. Epub 2023 Apr 1.
12. Bordoni V, Casale M, Pinto VM, Carsetti R, Ganesin B, Gamberini MR, Mazdai L, Barella S, Denotti AR, Colavita F, Perrotta S, Maggio A, Pitrolo L, Quintino S, Caminati M, Mazzi F, Ceolan J, De Franceschi L, Forni GL, Locatelli F, Agrati C. Inflammatory and senescence-associated mediators affect the persistence of humoral response to COVID-19 mRNA vaccination in transfusion-dependent beta-thalassemic patients. *Am J Hematol*. 2023

13. Rescigno M, Agrati C, Salvarani C, Giannarelli D, Costantini M, Mantovani A, Massafra R, Zinzani PL, Morrone A, Notari S, Matusali G, Pinter GL, Uccelli A, Ciliberto G, Baldanti F, Locatelli F, Silvestris N, Sinno V, Turola E, Lupo-Stanghellini MT, Apolone G; VAX4FRAIL study Group. Neutralizing antibodies to Omicron after the fourth SARS-CoV-2 mRNA vaccine dose in immunocompromised patients highlight the need of additional boosters. *Front Immunol*. 2023 Jan 27;14:1104124. doi: 10.3389/fimmu.2023.1104124.
14. D'arminio Monforte A, Tavelli A, Sala M, Mondi A, Rusconi S, Antinori S, Puoti M, Celesia BM, Taramasso L, Saracino A, Antinori A, Cozzi-Lepri A; ICONA Foundation Study Group. Long-term outcome of dolutegravir-containing regimens according to sex: data from the ICONA study. *J Antimicrob Chemother*. 2023 Apr 3;78(4):933-945. doi: 10.1093/jac/dkad026.
15. Rosichini M, Bordoni V, Silvestris DA, Mariotti D, Matusali G, Cardinale A, Zambruno G, Condorelli AG, Flamini S, Genah S, Catanoso M, Del Nonno F, Trezzi M, Galletti L, De Stefanis C, Cicolani N, Petrini S, Quintarelli C, Agrati C, Locatelli F, Velardi E. SARS-CoV-2 infection of thymus induces loss of function that correlates with disease severity. *J Allergy Clin Immunol*. 2023 Apr;151(4):911-921. doi: 10.1016/j.jaci.2023.01.022. Epub 2023 Feb 8.
16. Corradini P, Agrati C, Apolone G, Mantovani A, Giannarelli D, Marasco V, Bordoni V, Sacchi A, Matusali G, Salvarani C, Zinzani PL, Mantegazza R, Tagliavini F, Lupo-Stanghellini MT, Ciciri F, Damian S, Uccelli A, Fenoglio D, Silvestris N, Baldanti F, Piaggio G, Ciliberto G, Morrone A, Locatelli F, Sinno V, Rescigno M, Costantini M; VAX4FRAIL Study Group. Humoral and T-cell immune response after three doses of mRNA SARS-CoV-2 vaccines in fragile patients: the Italian VAX4FRAIL study. *Clin Infect Dis*. 2022 May 24:ciac404.
17. Cinicola BL, Piano Mortari E, Zicari AM, Agrati C, Bordoni V, Albano C, Fedele G, Schiavoni I, Leone P, Fiore S, Capponi M, Conti MG, Petrarca L, Stefanelli P, Spalice A, Midulla F, Palamara AT, Quinti I, Locatelli F, Carsetti R. The BNT162b2 vaccine induces humoral and cellular immune memory to SARS-CoV-2 Wuhan strain and the Omicron variant in children 5 to 11 years of age. *Front Immunol*. 2022 Dec 15;13:1094727. doi: 10.3389/fimmu.2022.1094727.
18. Aiello A, Coppola A, Ruggieri S, Farroni C, Altera AMG, Salmi A, Vanini V, Cuzzi G, Petrone L, Meschi S, Lapa D, Bettini A, Haggiag S, Prosperini L, Galgani S, Quartuccio ME, Bevilacqua N, Garbuglia AR, Agrati C, Puro V, Tortorella C, Gasperini C, Nicastri E, Goletti D. Longitudinal characterisation of B and T-cell immune responses after the booster dose of COVID-19 mRNA-vaccine in people with multiple sclerosis using different disease-modifying therapies. *J Neurol Neurosurg Psychiatry*. 2022 Dec 15;jnnp-2022-330175. doi: 10.1136/jnnp-2022-330175.
19. Agrati C, Cossarizza A, Mazzotta V, Grassi G, Casetti R, De Biasi S, Pinnetti C, Gili S, Mondi A, Cristofanelli F, Lo Tartaro D, Notari S, Maffongelli G, Gagliardini R, Gibellini L, Aguglia C, Lanini S, D'Abramo A, Matusali G, Fontana C, Nicastri E, Maggi F, Girardi E, Vaia F, Antinori A. Immunological signature in human cases of monkeypox infection in 2022 outbreak: an observational study. *Lancet Infect Dis*. 2022 Nov 7:S1473-3099(22)00662-4. doi: 10.1016/S1473-3099(22)00662-4.
20. Ciccosanti F, Antonioli M, Sacchi A, Notari S, Farina A, Beccacece A, Fusto M, Vergori A, D'Offizi G, Taglietti F, Antinori A, Nicastri E, Marchioni L, Palmieri F, Ippolito G, Piacentini M, Agrati C, Fimia GM. Proteomic analysis identifies a signature of disease severity in the plasma of COVID-19 pneumonia patients associated to neutrophil, platelet and complement activation. *Clin Proteomics*. 2022 Nov 8;19(1):38. doi: 10.1186/s12014-022-

09377-7.

21. Di Cosimo S, Lupo-Stanghellini MT, Costantini M, Mantegazza R, Ciceri F, Salvarani C, Zinzani PL, Mantovani A, Ciliberto G, Uccelli A, Baldanti F, Apolone G, Delcuratolo S, Morrone A, Locatelli F, Agrati C, Silvestris N. Safety of third dose of COVID-19 vaccination in frail patients: Results from the prospective Italian VAX4FRAIL study. *Front Oncol*. 2022 Oct 20;12:1002168. doi: 10.3389/fonc.2022.1002168. eCollection 2022.
22. Farroni C, Aiello A, Picchianti-Diamanti A, Laganà B, Petruccioli E, Agrati C, Garbuglia AR, Meschi S, Lapa D, Cuzzi G, Petrone L, Vanini V, Salmi A, Altera AMG, Repele F, Grassi G, Bettini A, Vita S, Mariano A, Damiani A, Infantino M, Grossi V, Manfredi M, Niccoli L, Puro V, Rosa RD, Salemi S, Sesti G, Scolieri P, Bruzzese V, Benucci M, Cantini F, Nicastri E, Goletti D. Booster dose of SARS-CoV-2 messenger RNA vaccines strengthens the specific immune response of patients with rheumatoid arthritis: A prospective multicenter longitudinal study. *Int J Infect Dis*. 2022 Dec;125:195-208. doi: 10.1016/j.ijid.2022.10.035. Epub 2022 Nov 1.
23. Pulvirenti F, Mortari EP, Putotto C, Terreri S, Fernandez Salinas A, Cinicola BL, Cimini E, Di Napoli G, Sculco E, Milito C, Versacci P, Agrati C, Marino B, Carsetti R, Quinti I. COVID-19 Severity, Cardiological Outcome, and Immunogenicity of mRNA Vaccine on Adult Patients With 22q11.2 DS. *J Allergy Clin Immunol Pract*. 2023 Jan;11(1):292-305.e2. doi: 10.1016/j.jaip.2022.10.010. Epub 2022 Oct 21.
24. Agrati C, Castilletti C, Battella S, Cimini E, Matusali G, Sommella A, Sacchi A, Colavita F, Contino AM, Bordoni V, Meschi S, Gramigna G, Barra F, Grassi G, Bordi L, Lapa D, Notari S, Casetti R, Bettini A, Francalancia M, Ciufoli F, Vergori A, Vita S, Gentile M, Raggioli A, Plazzi MM, Bacchieri A, Nicastri E, Antinori A, Milleri S, Lanini S, Colloca S, Girardi E, Camerini R, Ippolito G, Vaia F, Folgori A, Capone S. Safety and immune response kinetics of GRAd-COV2 vaccine: phase 1 clinical trial results. *NPJ Vaccines*. 2022 Sep 24;7(1):111. doi: 10.1038/s41541-022-00531-8.
25. Bordoni V, Mariotti D, Matusali G, Colavita F, Cimini E, Ippolito G, Agrati C. SARS-CoV-2 Infection of Airway Epithelium Triggers Pulmonary Endothelial Cell Activation and Senescence Associated with Type I IFN Production. *Cells*. 2022 Sep 17;11(18):2912. doi: 10.3390/cells11182912
26. Cimini E, Agrati C.  $\gamma\delta$  T Cells in Emerging Viral Infection: An Overview. *Viruses*. 2022 May 27;14(6):1166. doi: 10.3390/v14061166. PMID: 35746638 Free PMC article. Review. (Quartile Q2).
27. D'Abramo A, Vita S, Maffongelli G, Beccacece A, Agrati C, Cimini E, Colavita F, Giancola ML, Cavasio A, Nicastri E; Spallanzani COVID-19 Case Investigation Team. Clinical Management of Patients With B-Cell Depletion Agents to Treat or Prevent Prolonged and Severe SARS-CoV-2 Infection: Defining a Treatment Pathway. *Front Immunol*. 2022 May 27;13:911339. doi: 10.3389/fimmu.2022.911339. eCollection 2022. (Quartile Q1).
28. Pinnetti C, Cimini E, Vergori A, Mazzotta V, Grassi G, Mondi A, Forbici F, Amendola A, Grisetti S, Baldini F, Candela C, Casetti R, Campioni P, Capobianchi MR, Agrati C, Antinori A. Use of Pembrolizumab for Treatment of Progressive Multifocal Leukoencephalopathy in People Living with HIV. *Viruses*. 2022 May 5;14(5):970. doi: 10.3390/v14050970. (Quartile Q2).
29. Corradini P, Agrati C, Apolone G, Mantovani A, Giannarelli D, Marasco V, Bordoni V, Sacchi A, Matusali G, Salvarani C, Zinzani PL, Mantegazza R, Tagliavini F, Lupo-Stanghellini MT, Ciceri F, Damiani S, Uccelli A, Fenoglio D, Silvestris N, Baldanti F, Piaggio G, Ciliberto G, Morrone A, Locatelli F, Sinno V, Rescigno M, Costantini M; VAX4FRAIL Study Group. Humoral and T-cell immune response after three doses of mRNA SARS-CoV-2 vaccines in fragile patients: the Italian VAX4FRAIL study. *Clin Infect Dis*. 2022 May

- 24:ciac404. doi: 10.1093/cid/ciac404. Online ahead of print. (Quartile Q1).
30. Grassi G, Notari S, Gili S, Bordoni V, Casetti R, Cimini E, Tartaglia E, Mariotti D, Agrati C, Sacchi A. Myeloid-Derived Suppressor Cells in COVID-19: The Paradox of Good. *Front Immunol.* 2022 Apr 27;13:842949. doi: 10.3389/fimmu.2022.842949. eCollection 2022. (Quartile Q1).
31. Mazzotta V, Cozzi-Lepri A, Colavita F, Lanini S, Rosati S, Lalle E, Mastrorosa I, Cimiglia C, Vergori A, Bevilacqua N, Lapa D, Mariano A, Bettini A, Agrati C, Piselli P, Girardi E, Castilletti C, Garbuglia AR, Vaia F, Nicastri E, Antinori A. Emulation of a Target Trial From Observational Data to Compare Effectiveness of Casirivimab/Imdevimab and Bamlanivimab/Etesevimab for Early Treatment of Non-Hospitalized Patients With COVID-19. *Front Immunol.* 2022 Apr 20;13:868020. doi: 10.3389/fimmu.2022.868020. eCollection 2022. (Quartile Q1).
32. Agrati C, Castilletti C, Goletti D, Sacchi A, Bordoni V, Mariotti D, Notari S, Matusali G, Meschi S, Petrone L, Aiello A, Najafi Fard S, Farroni C, Colavita F, Lapa D, Leone S, Agresta A, Capobianchi M, Ippolito G, Vaia F, Puro V; INMI COVID-19 Vaccine Study Group. Persistent Spike-specific T cell immunity despite antibody reduction after 3 months from SARS-CoV-2 BNT162b2-mRNA vaccine. *Sci Rep.* 2022 Apr 23;12(1):6687. doi: 10.1038/s41598-022-07741-z. PMID: 35461335 Free PMC article.
33. Mondi A, Pinnelli C, Lorenzini P, Plazzi MM, Abbate I, Camici M, Agrati C, Grilli E, Gili F, Esvan R, Orchi N, Rozera G, Amendola A, Forbici F, Gori C, Gagliardini R, Bellagamba R, Ammassari A, Cicalini S, Capobianchi MR, Antinori A. Virological and Immunological Outcomes of an Intensified Four-Drug versus a Standard Three-Drug Antiretroviral Regimen, Both Integrase Strand Transfer Inhibitor-Based, in Primary HIV Infection. *Pharmaceuticals (Basel)*. 2022 Mar 26;15(4):403. doi: 10.3390/ph15040403. PMID: 35455400 Free PMC article.
34. Antinori A, Cicalini S, Meschi S, Bordoni V, Lorenzini P, Vergori A, Lanini S, De Pascale L, Matusali G, Mariotti D, Cozzi Lepri A, Galli P, Pinnelli C, Gagliardini R, Mazzotta V, Mastrorosa I, Grisetti S, Colavita F, Cimini E, Grilli E, Bellagamba R, Lapa D, Sacchi A, Marani A, Cerini C, Candela C, Fusto M, Puro V, Castilletti C, Agrati C, Girardi E, Vaia F; HIV-VAC Study Group. Humoral and cellular immune response elicited by mRNA vaccination against SARS-CoV-2 in people living with HIV (PLWH) receiving antiretroviral therapy (ART) according with current CD4 T-lymphocyte count. *Clin Infect Dis.* 2022 Apr 2:ciac238. doi: 10.1093/cid/ciac238. Online ahead of print. PMID: 35366316 Free PMC article.
35. Gagliardini R, Vergori A, Lorenzini P, Cicalini S, Pinnelli C, Mazzotta V, Mondi A, Mastrorosa I, Camici M, Lanini S, Fusto M, Paulicelli J, Plazzi MM, Marchioni L, Agrati C, Garbuglia AR, Piselli P, Nicastri E, Taglietti F, Palmieri F, D'Offizi G, Girardi E, Vaia F, Antinori A. Characteristics and Outcomes of COVID-19-Related Hospitalization among PLWH. *J Clin Med.* 2022 Mar 11;11(6):1546. doi: 10.3390/jcm11061546. PMID: 35329872 Free PMC article.
36. Farroni C, Picchianti-Diamanti A, Aiello A, Nicastri E, Laganà B, Agrati C, Castilletti C, Meschi S, Colavita F, Cuzzi G, Casetti R, Grassi G, Petrone L, Vanini V, Salmi A, Repele F, Altera AMG, Maffongelli G, Corpolongo A, Salemi S, Di Rosa R, Nalli G, Sesti G, Vaia F, Puro V, Goletti D. Kinetics of the B- and T-Cell Immune Responses After 6 Months From SARS-CoV-2 mRNA Vaccination in Patients With Rheumatoid Arthritis. *Front Immunol.* 2022 Feb 28;13:846753. doi: 10.3389/fimmu.2022.846753.
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- Locatelli F, Perno CF, Zaffina S, Carsotti R. Persistent B cell memory after SARS-CoV-2 vaccination is functional during breakthrough infections. *Cell Host Microbe*. 2022 Mar 9;30(3):400-408.e4. doi: 10.1016/j.chom.2022.01.003.
38. Bordoni V, Matusali G, Mariotti D, Antonioli M, Cimini E, Sacchi A, Tartaglia E, Casetti R, Grassi G, Notari S, Castilletti C, Fimia GM, Capobianchi MR, Ippolito G, Agrati C. The interplay between SARS-CoV-2 infected airway epithelium and immune cells modulates regulatory/inflammatory signals. *iScience*. 2022 Feb 18;25(2):103854. doi: 10.1016/j.isci.2022.103854.
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- Projects GRANTS**
- 2024: PNRR. PI of the project "Impact of postbiotic administration on the immune-reconstitution and clinical outcome of bone marrow transplantation: a double-blind randomized interventional study".
  - 2020: Multicentric Project "VAX4FRAIL study National Project on Vaccines, COVID and frail patients. A multicentric observational prospective study to assess the immune response of COVID-19 vaccination in frail patients" (funded by Ministero della Salute), Principal Investigator.
  - 2020: Grant COVID-19 COVID-2020-12371735 "The double-edged role of innate immunity in SARS-CoV-2 infection: Dissecting new potential therapeutic targets", Principal Investigator of Operative Unit
  - 2018: Grant "EXO-DAA" (funded by Regione Lazio), Principal Investigator
  - 2018: European Union's Horizon 2020 nell'ambito delle azioni Marie Skłodowska-Curie. "BE a citizEn Scientis", Principal Investigator of Operative Unit
  - 2016: European Union's Horizon 2020: "European HIV Alliance (EHVA)", key personnel
  - 2010: Ricerca Finalizzata (RF-2010 – 2310899, UO 3): "Campylobacter, L. monocytogenes ed E. coli produttori di Verocitotossine (VTEC) in Italia: un approccio di epidemiologia molecolare per identificare le fonti di infezione e i fattori di rischio per l'esposizione umana", Principal Investigator of Operative Unit
  - 2003: Ricerca Finalizzata (UO 7): "Alterazioni linfomonocitarie indotte dal SARS coronavirus) in seno al progetto Aspetti diagnostici, patogenetici ed epidemiologici delle infezioni virali del tratto respiratorio", Principal Investigator of Operative Unit
  - 2003: Ricerca Finalizzata (RF03.120, UO 3): "Interazione immunità naturale-specifica nell'infezione da HCV: ricerca di nuovi bersagli terapeutici", Principal Investigator of Operative Unit

### **Scientific profile:**

Dr. Chiara Agrati has a PhD in Immunology and she is specialized in Microbiology and Virology. Since 2016, Chiara Agrati is the head of the Cellular Immunology Laboratory at INMI Lazzaro Spallanzani in Rome where she is in charge of diagnostic and research activity on immune response to viral diseases. She has a longstanding experience (more than 25 years) in the study of the immune response to chronic (HIV, HCV infection) and emerging pathogens (SARS-CoV, Ebbole, pandemic flu, SARS-CoV2). Her research activities are mainly focused to the analysis of the protection/pathogenetic mechanisms driven by innate immune response to viral infection as well as to the dissection of the cross-talk between innate and adaptive immune responses.

In chronic infections, she described the impairment of  $\gamma\delta$  T cells during HIV infection, she identified the mechanisms responsible for this immunological defect and she was involved in defining the possible use of  $\gamma\delta$  T cells as a target in immunotherapy for HIV infection. She identified a functional marker of CD4 T cells associated with a worse immune-recovery and she described the main role of cross-talk among dendritic cells and  $\gamma\delta$  T cells in the generation of a protective immunity.

Moreover, Dr Agrati was involved in several projects on emerging viral infections. She identified gammadelta T cells as main actor in shaping the protective immune response to SARS-CoV infection, and she described their ability to kill cells infected with SARS-CoV, orthopoxvirus as well as with Zika virus. During the emergence related to Ebola infection, she participated to the task force of clinicians and researchers and she described a dramatic impairment of adaptive T cell response during acute Ebola infection, resulting in the reactivation of herpesvirus. She has a good experience in working in BSL3/4 laboratory.

Since 2020 he coordinates several projects on the ongoing immune response of COVID-19 aimed to identify protection profiles, mechanisms of pathogenesis and response to vaccination in healthy and frail populations. It demonstrated a role of inflammation in severe infections, associated with a reduction of the cytotoxic compartment and the expansion of suppressor cells able to dampen the immune response and to predict a fatal outcome. She coordinated the immunological study of the immunogenicity of vaccination in frail populations within a multicenter national project. In 2022, she moved to the Bambino Gesù children's hospital to lead the Unit of Pathogen Specific Immunity in the Department of Hematology and Oncology. In the last year, she is working on the identification of new strategies to boost the antiviral immune response in immunocompromised children.

She has a good experience in working in BSL3/4 laboratory.

She successfully administered scientific projects and is authors of more than 200 peer-reviewed publications indexed on PubMed, cited on ISI Web of Knowledge

**Memberships** Ordine Nazionale dei Biologi (numero d'ordine: 050846 dal 30.05.01).

**Other Relevant Information** From 2023 she is involved in the Technical-Scientific committee of the Ospedale Pediatrico Bambino Gesù

From 2019 she is involved in the Technical-Scientific committee of the INMI L Spallanzani

From 2017, she is involved in the scientific organization of the congress ICAR