Curriculum vitae

CLAUDIA NASTASI, PhD

Date of Birth: 4th October 1986
Nationality: Italian
Workplace: Mario Negri Institute for Pharmacological Research, Milan
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Scientific experience and education

March 2020 – to present

Senior Researcher

Mario Negri Institute for Pharmacological Research (IRCCS), Milan

Head of Department Maurizio D'Incalci

- *Project: The role of the immune system in bone metastasis.*
- *Bone scaffolds for in vitro studies in collab. with Politecnico di Milano.*

Jan 2019 – Feb 2020

Assistant Professor

LEO Foundation Skin Immunology Research Center, ISIM (Department of Immunology and Microbiology). Mærsk Tårnet, University of Copenhagen.

Chiefs: Niels Ødum and Anders Woetmann

- *Projects: 1. Modulation of T-cells metabolism as potential immunotherapy; 2. Elucidate the etiology and features of Cutaneous T cell lymphoma (CTCL).*

Apr 2015 – Jan 2018

Post-doctoral researcher

University of Copenhagen, Department Immunology and Microbiology (ISIM)

Chiefs: Niels Ødum and Anders Woetmann

- *Projects: 1. Study the effect of microbial metabolites on the immune system; 2. Elucidate the etiology and features of Cutaneous T cell lymphoma (CTCL).*

Apr 2015 – Oct 2015

Visiting Post doc researcher

Herlev Hospital, CCIT, Department of Hematology, Denmark

Head of the group: Mads Hald Andersen

- *Aims: learning immunoassays such as Elispot, DC-T cell co culture, peptide-pulsing*

Jan 2014- April 2015

Guest- PhD student

University of Copenhagen, Department of Immunology and Microbiology

- *Supervisor: Prof. Niels Ødum*
- *Interdisciplinary aim (from microbiology to immunology): studying the effect of the human gut microbiota's metabolites on primary immune cells.*

Jan 2012 – Apr 2015

PhD Student at "Cellular and Molecular biology" School

University of Bologna, Department of Pharmacy and Biotechnology FaBiT and S. Orsola-Malpighi Hospital (Pediatrics Department) (Bologna, Italy).

- Advisor: *Prof. Andrea Pession.* In Collaboration with: *Prof. Patrizia Brigidi* and *Ass. Prof. Marco Candela* - Department of Pharmacology.
- Interdisciplinary PhD thesis: "Interactions between the gut microbiota, short-chain fatty acids and the immune system in pediatric patients undergoing allogeneic Hematopoietic Stem Cell Transplantation".

September 2012

Passed the Italian government exam and licensed as professional qualified Biologist. Final grade: 195/200

Oct 2010 - Jul 2011

Master degree in Cellular and Molecular Biology (LM6) - University of Palermo. Final grade: 110/110 cum laude and honor at Genetics of Microorganisms lab, University of Palermo. Thesis project: "Overexpression of the gene *PEPAmy* of *Amycolatopsis balhimycina* in *E.coli*".

May 2009 - Jul 2009

Bachelor degree in Scienze biologiche - University of Palermo. Final grade: 110/110 cum laude at Genetics lab, University of Palermo. Thesis project: "Optimal conditions for the expression of the gene *rho* in *E.coli*"

Skills & background

Background knowledge	Innate and adaptive Immunity. Mucosal immunity. Immunometabolism. General microbiology, interaction between microbes and the immune system; gut microbiome metabolites. Cutaneous T cell lymphoma.
Technical skills	Molecular biology (RNA isolation, qRT-PCRs by Taqman technology, protein isolation, Western-blot, ELISA and Elispot assays, MSD cytokine multiplex assay). Cellular Biology: cell culture experience with primary cells, immortalized keratinocytes, and cancer cell lines. PBMCs isolation via ficoll gradient, isolation and characterization of leukocytes, dendritic cells and macrophage generation, co-culture of human DC - T cells, T cell cultures, CD8 killing assay, LDH cytotoxicity assay, thymidine incorporation/proliferation assay. Immunohistochemistry. Metabolism: advanced user of Agilent's Seahorse machine XF96, endo-metabolites extraction, good data analyst of cells' metabolome. Flow cytometry (advanced user of BD machines: Canto, LSR, LSRFortessa 3 and 5 lasers; Gallios BC); FlowJo and DIVA software for flow cytometry data.
Animal skills	Passed exam for "Animal care and experimental design" – University of Milan and Mario Negri Institute (September 2020).
Computer skills	Macintosh and Microsoft operating systems; Windows Office; software for the management of bibliographies (EndNote, Mendeley, Zotero), graphical analysis and representation (GraphPad Prism, Adobe Photoshop, Illustrator), and image analysis (ImageJ).
Languages	English (C2-Speaking/Writing/listening/reading), Danish (B1-reading/listening, A2-speaking/writing), Italian (native speaker).
Soft skills	Good communicator, results oriented, committed to work independently and in a multidisciplinary team with a positive and flexible approach if situations require it. Excellent organizational skills with a systematic and rigorous approach to work. Solid decision-making skills and problem-solving skills. Great stress management.

Publishing field Guest editor for "Pathogens" (ISSN 2076-0817, MDPI) special issue 2020: "New Tools in 3D Host-pathogen Interactions"

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Teaching

Lecturer at the Faculty of Health and Medical sciences:

- Master of sciences: "**Immunology and Inflammation**", "**Human Biology**" for the courses Advanced Basic Immunology, Human Immunology, Immunology and Microbiology [lectures about Innate Immunity (from 2018 to 2020), Mucosal Immunity (from 2016 to 2018), Immunometabolism (2017-2018)].
- Master degree of **"Medicine"**, for the course Immunology (3° year): "Innate Immunity" (from 2018 to 2020).

Awards & Grants

- (*March 2020*): Beppe e Nuccy Angiolini Foundation for bone metastasis research (3 years fellowship).
- *(May 2018):* BEST YOUNG ITALIAN RESEARCHER IN DANMARK (BIRD) award 2018 given by *Ministero degli Affari Esteri e della Cooperazione Internazionale*- Italian Embassy in Danmark.
- *(January 2017):* Dyssegaards Fonds' grant (30.000dkk) for the attendance to international conferences and advanced courses.
- *(September 2014):* Copenhagen University grant (40.000 dkk).
- *(November 2014*): Marco Polo Fellowship for abroad stage (Jan 2014- Aug 2014)
- *(August 2013):* University of Bologna fellowship (august 2013-august 2014).

Conferences attendance & contributions

- Immunometabolism 2020 Mini-Symposia Series (May-June 2020, Vanderbilt Center for Immunobiology, online https://www.vumc.org/vci/immunometabolism-2020-symposia).
- Seminar at Istituto di ricerche farmacologiche Mario Negri - 17th October 2019 "Exo- and endo-metabolites: their role in immunity" (invited speaker).
- World Immune Regulation Meeting XIII, Davos 6-9 April 2019 (poster).
- Keystone symposium "Integrating metabolism and immunity" May 29th – 2nd June, 2017, Royal Dublin Society • Dublin, Ireland.

- The Copenhagen Workshop on Cutaneous T Cell Lymphoma - Copenhagen 22nd - 25th August 2016 (oral presentation).
- Midwinter congress - Seedfeld, Tyrol 17th – 21th January 2015 (poster).
- AIEOP IN LAB, 8-9th October 2013, Pavia, Italy (poster).
- FEMS Microbiology congress 2013 – 21st -25th July 2013 - Liepzig, Germany (poster);
- XXXVIII Congresso Nazionale AIEOP 9-11th June 2013 - Rome, Italy (poster);
- The microbiota and the immunity in human diasease Symposium - Children's Hospital Bambino Gesù – 3rd -4th May 2013 - Rome, Italy (poster);
- EBMT 2013, 9-11th April 2013 – London (poster);
- SIMGBM 29° National meeting"- Pisa 21st -23th September 2011 (poster);
- European Summer School of Biological chemistry and Advanced Biotechnology- 5-7th September 2011 – Berlin.

Publications list

H-index 12, 475 citations (source Scopus)

1. **Nastasi C.,** Willerslev-Olsen A, Dalhoff K, Ford SL, Østergaard Gadsbøll AS, Buus TB, Gluud M, Danielsen M, Litmann T, Bonefeld CM, Geisler C, Ødum, N, Woetmann A.- Succinate dehydrogenase activity is pivotal for human T cell activation and function (Sci.Rep. 2020, *accepted*).

2. **Nastasi C**, Mannarino L, D'Incalci M. - DNA damage and immune system response (2020). DNA Damage Response and Immune Defense. International journal of molecular sciences, vol. 21, ISSN: 1422-0067, doi: 10.3390/ijms21207504

3. Stolearenco V, Levring TB, Nielsen HM, Lindahl L, Fredholm S, Kongsbak-Wismann M, Willerslev-Olsen A, Buus TB, **Nastasi C**, Hu T, Gluud M, Côme CRM, Krejsgaard T, Iversen L, Bonefeld CM, Grønbæk K, Met Ö, Woetmann A, Ødum N, Geisler C. - The Thioredoxin-Interacting Protein TXNIP Is a Putative Tumour Suppressor in Cutaneous T-Cell Lymphoma. Dermatology. 2020 Aug 14:1-8. doi: 10.1159/000509159 (Online ahead of print).

4. Willerslev-Olsen, A., Buus, T.B., **Nastasi, C.**, Blümel, E., Gluud, M., Bonefeld, C.M., Geisler, C., Lindahl, L.M., Vermeer, M., Wasik, M.A., Iversen, L., Becker, J.C., Andersen, M.H., Gjerdrum, L.M.R., Litvinov, I.V., Litman, T., Krejsgaard, T., Woetmann, A., Ødum, N. - Staphylococcus aureus enterotoxins induce FOXP3 in neoplastic T cells in Sézary syndrome (2020) Blood Cancer Journal, 10 (5), art. no. 57. DOI: 10.1038/s41408-020-0324-3.

5. Hu, T., Krejsgaard, T., **Nastasi, C.**, Buus, T.B., Nansen, A., Hald, A., Spee, P., Nielsen, P.R., Blümel, E., Gluud, M., Willerslev-Olsen, A., Woetmann, A., Bzorek, M., Eriksen, J.O., Ødum, N., Gjerdrum, L.M.R. Expression of the Voltage-Gated Potassium Channel Kv1.3 in Lesional Skin from Patients with Cutaneous T-Cell Lymphoma and Benign Dermatitis (2020) Dermatology, 236 (2), pp. 123-132. DOI: 10.1159/000502137.

6. Gluud, M., Fredholm, S., Blümel, E., Willerslev-Olsen, A., Buus, T.B., **Nastasi, C.**, Krejsgaard, T., Bonefeld, C.M., Woetmann, A., Iversen, L., Litman, T., Geisler, C., Ødum, N., Lindahl, L.M. MicroRNA-93 Targets p21 and Promotes Proliferation in Mycosis Fungoides T Cells (2020) Dermatology, DOI: 10.1159/000505743.

7. Blümel, E., Munir Ahmad, S., **Nastasi, C.**, Willerslev-Olsen, A., Gluud, M., Fredholm, S., Hu, T., Surewaard, B.G.J., Lindahl, L.M., Fogh, H., Koralov, S.B., Rahbek Gjerdrum, L.M., Clark, R.A., Iversen, L., Krejsgaard, T., Bonefeld, C.M., Geisler, C., Becker, J.C., Woetmann, A., Andersen, M.H., Buus, T.B., Ødum, N. - Staphylococcus aureus alpha-toxin inhibits CD8+ T cell-mediated killing of cancer cells in cutaneous T-cell lymphoma (2020) OncoImmunology, 9 (1), art. no. 1751561, DOI: 10.1080/2162402X.2020.1751561.

8. Blümel, E., Willerslev-Olsen, A., Gluud, M., Lindahl, L.M., Fredholm, S., **Nastasi, C.**, Krejsgaard, T., Surewaard, B.G.J., Koralov, S.B., Hu, T., Persson, J.L., Bonefeld, C.M., Geisler, C., Iversen, L., Becker, J.C., Andersen, M.H., Woetmann, A., Buus, T.B., Ødum, N. - Staphylococcal alpha-toxin tilts the balance between malignant and non-malignant CD4+ T cells in cutaneous T-cell lymphoma (2019) OncoImmunology, 8 (11), art. no. e1641387, DOI: 10.1080/2162402X.2019.1641387

9. Lindahl, L.M., Willerslev-Olsen, A., Gjerdrum, L.M.R., Nielsen, P.R., Blümel, E., Rittig, A.H., Celis, P., Herpers, B., Becker, J.C., Stausbøl-Grøn, B., Wasik, M.A., Gluud, M., Fredholm, S., Buus, T.B., Johansen, C., **Nastasi, C.**, Peiffer, L., Kubat, L., Bzorek, M., Eriksen, J.O., Krejsgaard, T., Bonefeld, C.M., Geisler, C., Mustelin, T., Langhoff, E., Givskov, M., Woetmann, A., Kilian, M., Litman, T., Iversen, L., Odum, N. Antibiotics inhibit tumor and disease activity in cutaneous T-cell lymphoma (2019) Blood, 134 (13), pp. 1072-1083, DOI: 10.1182/blood.2018888107.

10. Hu, T., Buus, T.B., Krejsgaard, T., Nansen, A., Lundholt, B.K., Spee, P., Fredholm, S., Petersen, D.L., Blümel, E., Gluud, M., Monteiro, M.N., Willerslev-Olsen, A., Andersen, M.H., Straten, P.T., Met, Ö., Stolearenco, V., Fogh, H., Gniadecki, R., **Nastasi, C.**, Litman, T., Woetmann, A., Gjerdrum, L.M., Ødum, N. Expression and function of Kv1.3 channel in malignant T cells in Sézary syndrome (2019) Oncotarget, 10 (47), pp. 4894-4906.

11. Buus, T.B., Willerslev-Olsen, A., Fredholm, S., Blümel, E., **Nastasi, C.**, Gluud, M., Hu, T., Lindahl, L.M., Iversen, L., Fogh, H., Gniadecki, R., Litvinov, I.V., Persson, J.L., Bonefeld, C.M., Geisler, C., Christensen, J.P., Krejsgaard, T., Litman, T., Woetmann, A., Ødum, N. Single-cell heterogeneity in Sézary syndrome (2018) Blood Advances, 2 (16), pp. 2115-2126. DOI: 10.1182/bloodadvances.2018022608

12. Fredholm, S., Willerslev-Olsen, A., Met, Ö., Kubat, L., Gluud, M., Mathiasen, S.L., Friese, C., Blümel, E., Petersen, D.L., Hu, T., **Nastasi, C.**, Lindahl, L.M., Buus, T.B., Krejsgaard, T., Wasik, M.A., Kopp, K.L., Koralov, S.B., Persson, J.L., Bonefeld, C.M., Geisler, C., Woetmann, A., Iversen, L., Becker, J.C., Ødum, N. SATB1 in Malignant T Cells (2018) Journal of Investigative Dermatology, 138 (8), pp. 1805-1815. DOI: 10.1016/j.jid.2018.03.1526

13. Woetmann A, Alhede M, Dabelsteen S, Bjarnsholt T, Rybtke M, **Nastasi C**. et al-Interleukin-26 (IL-26) is a novel anti-microbial peptide produced by T cells in response to staphylococcal enterotoxin.

Oncotarget. 2018 Apr 13;9(28):19481-19489. doi: 10.18632/oncotarget.24603. eCollection 2018 Apr 13.

14. Fredholm S, Willerslev-Olsen A, Met Ö, Kubat L, Gluud M, Mathiasen SL, Friese C, Blümel E, Petersen DL, Hu T, **Nastasi C**. et al. -Special AT rich-binding1 protein (SATB1) in malignant T cells. J Invest Dermatol. 2018 May 8. pii: S0022 202X(18)31956-0. doi: 10.1016/j.jid.2018.03.1526.

15. Ahmad SM, Martinenaite E, Holmström M, Jørgensen MA, Met Ö, **Nastasi C.** et al.- The inhibitory checkpoint, PD-L2, is a target for effector T cells: Novel possibilities for immune therapy. Oncoimmunology. 2017 Nov 1;7(2):e1390641. doi: 10.1080/2162402X.2017.1390641. eCollection 2018.

16. **Nastasi C**, Fredholm S, Willerslev-Olsen A, Hansen M, Bonefeld CM, Geisler C, Andersen MH, Ødum N, Woetmann A. - Butyrate and propionate inhibit antigen-specific CD8+ T cell activation by suppressing IL-12 production by antigen-presenting cells. Sci Rep. 2017 Nov 6;7(1):14516. doi: 10.1038/s41598-017-15099-w.

17. Lauenborg B, Litvinov IV, Zhou Y, Willerslev-Olsen A, Bonefeld CM, **Nastasi C.** et al. – Malignant T cells activate endothelial cells via IL17F. Blood Cancer J. 2017 Jul 21;7(7):e586. doi: 10.1038/bcj.2017.64.

18. Del Bel Belluz, L., Guidi, R., Pateras, I.S., Levi, L., Mihaljevic, B., Rouf, S.F., Wrande, M., Candela, M., Turroni, S., **Nastasi, C.**, Consolandi, C., Peano, C., Tebaldi, T., Viero, G., Gorgoulis, V.G., Krejsgaard, T., Rhen, M., Frisan, T - The Typhoid Toxin Promotes Host Survival and the Establishment of a Persistent Asymptomatic Infection (2016) PLoS Pathogens, 12 (4), art. no. e1005528, 25 p. DOI: 10.1371/journal.ppat.1005528.

19. Willerslev-Olsen A., Krejsgaard T., Lindahl, L.M., Litvinov I.V., Fredholm S., Petersen D.L., **Nastasi C**. et al.- Staphylococcus aureus enterotoxin A (SEA) stimulates STAT3 activation and IL-17 expression in cutaneous T-cell lymphoma. Blood 01/2016; 127(10). DOI:10.1182/blood-2015-08-66235.

20. Fredholm S, Livinov I, Mongan NP, Schiele S, Willerslev-Olsen A, Petersen DL, Krejsgaard T, Sibbesen N, **Nastasi C**, et al.- The Expression of IL-21 Is Promoted by MEKK4 in Malignant T Cells and Associated with Increased Progression Risk in Cutaneous T-Cell Lymphoma. Journal of Investigative Dermatology 01/2016; 136(4). DOI:10.1016/j.jid.2015.12.03

21. Lindahl LM, Fredholm S, Joseph C, Nielsen BS, Jønson L, Willerslev-Olsen L, Gluud M, Blümel M, Petersen DL, Sibbesen N, Hu T, **Nastasi C** et al.- STAT5 induces miR-21 expression in cutaneous T cell lymphoma. Oncotarget 06/2016; 7(29). DOI:10.18632/oncotarget.10160

22. **Nastasi C**, Candela M, Bonefeld CM, Geisler C, Hansen M, Krejsgaard M, Biagi E, Andersen MH, Brigidi P, Ødum N, Litman T, Woetmann T: The effect of short-chain fatty acids on human monocyte-derived dendritic cells. Scientific Reports 11/2015; 5. DOI:10.1038/srep16148.

23. Sibbesen N, Kopp LA, Litvinov I, Jønson L, Willerslev-Olsen L, Fredholm S, Petersen DL, **Nastasi C**, et al.- Jak3, STAT3, and STAT5 inhibit expression of miR-22, a novel tumor suppressor microRNA, in cutaneous T-Cell lymphoma. Oncotarget 05/2015; 6(24). DOI:10.18632/oncotarget.4111.

24. Biagi, E., Zama, D., **Nastasi, C.,** Consolandi, C., Fiori, J., Rampelli, S., Turroni, S., Centanni, M., Severgnini, M., Peano, C., De Bellis, G., Basaglia, G., Gotti, R., Masetti, R., Pession, A., Brigidi, P., Candela, M. Gut microbiota trajectory in pediatric patients undergoing hematopoietic SCT (2015) Bone Marrow Transplantation, 50 (7), pp. 992-998. DOI: 10.1038/bmt.2015.16

25. Bagdonaite, I., Wandall, H.H., Litvinov, I.V., **Nastasi, C.**, Becker, J.C., Dabelsteen, S., Geisler, C., Bonefeld, C.M., Zhang, Q., Wasik, M.A., Zhou, Y., Sasseville, D., Ødum, N., Woetmann, A. Ectopic expression of a novel CD22 splice-variant regulates survival and proliferation in malignant T cells from cutaneous T cell lymphoma (CTCL) patients (2015) Oncotarget, 6 (16), pp. 14374-14384. DOI: 10.18632/oncotarget.3720.

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