

Curriculum Vitae

ALESSIO MONTRESOR, PhD

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PERSONAL INFORMATION

Family name: Montresor

First name: Alessio

Date of birth: July 8 1980

Citizenship: Italian

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EDUCATION

2007 - 2010 PhD in Molecular and Cellular Biology and Pathology

Faculty of Medicine, Department of Pathology, University of Verona, Italy.

Nov 2004 Master's degree in Biological Sciences

Faculty of Biology, University of Padua, Italy.

WORK EXPERIENCE

Current position

Jan 2022 – To date: Research assistant (RTDA) at Department of Medicine, Section of General Pathology, University of Verona, Italy.

Previous positions

Oct 2021 – Dec 2021: Research fellowship for the project entitled: “Monocyte integrin activation as a cystic fibrosis drug evaluation test: validation phase” finanziato dalla Fondazione Fibrosi Cistica (FFC#7/2021). Laboratory of Cell Trafficking and Signal Transduction, Department of Medicine, Section of General Pathology, University of Verona, Italy.

Jan 2021 – Sept 2021: Research fellowship for the project entitled: “Studio dei meccanismi di trasduzione del segnale che regolano l’adesione mediata da chemochine e l’apoptosi delle cellule leucemiche in sindrome di Richter”. Laboratory of Cell Trafficking and Signal Transduction, Department of Medicine, Section of General Pathology, University of Verona, Italy.

Oct 2020 – Dec 2020: Research Fellowship for the project entitled: “Studio dei meccanismi di

trasduzione del segnale che regolano l'adesione mediata da chemochine e l'apoptosi delle cellule leucemiche in sindrome di Richter”, Laboratory of Cell Trafficking and Signal Transduction, Department of Medicine, Section of General Pathology, University of Verona, Italy.

Febr 2020 – Aug 2020: Research fellowship for the project entitled: “Attivazione integrinica monocitaria come test di monitoraggio di farmaci per fibrosi cistica” finanziato dalla Fondazione Fibrosi Cistica (FFC#13/2019). Laboratory of Cell Trafficking and Signal Transduction, Department of Medicine, Section of General Pathology, University of Verona, Italy.

Jan 2019 – Dec 2019: Research Fellowship for the project entitled: “Ruolo della fosfatasi recettoriale PTPRG nella leucemia linfatica cronica (B-CLL)”, Laboratory of Cell Trafficking and Signal Transduction, Department of Medicine, Section of General Pathology, University of Verona, Italy.

Jan 2015 – Dec 2018: Assegnista di ricerca for the project entitled: “Studio del ruolo delle chinasi JAK2 e BTK nella leucemia linfocitica cronica (B-CLL) e caratterizzazione dei loro meccanismi di trasduzione del segnale per l'adesione e la migrazione”, Laboratory of Cell Trafficking and Signal Transduction, Department of Medicine, Section of General Pathology, University of Verona, Italy.

Jan 2014 – Dec 2014: Assegnista di ricerca for the project entitled: “Studio dell'attivazione integrinica in leucociti umani e di ratto e valutazione degli effetti dei nanovettori trojani nella modulazione degli eventi proadesivi, attivati da circolazione extracorporea”, Laboratory of Cell Trafficking and Signal Transduction, Department of Pathology, Section of General Pathology, University of Verona, Italy.

Jan 2013 – Dec 2013: Contratto di collaborazione a progetto Co. Co. Pro. funded by VENETO PHARMA S.R.L., at the Laboratory of Cell Trafficking and Signal Transduction, Department of Pathology, Section of General Pathology, University of Verona, Italy.

Jan 2012 – Dec 2012: Assegnista di ricerca for the project entitled: “Analisi fosfoproteomica e computazionale dei sistemi di trasduzione del segnale in leucemie linfatiche croniche e cellule B (B-CLL)”, Laboratory of Cell Trafficking and Signal Transduction, Department of Pathology, Section of General Pathology, University of Verona, Italy.

Jan 2010 – Dec 2011: Assegnista di ricerca for the project entitled: “Analisi di reti di trasduzione del segnale mediante citofluorimetria quantitativa ad immagine ImageStream™”, Laboratory of Cell Trafficking and Signal Transduction, Department of Pathology, Section of General Pathology, University of Verona, Italy.

2007 – 2009: PhD student

The project focused on the characterization of the mechanisms of intracellular signaling, triggered by chemokine, regulating integrin activation and dependent adhesion in chronic lymphocytic leukemia cells. Department of Pathology, Section of General Pathology, University of Verona, Italy.

Supervisor: Prof. C. Laudanna

Apr 2006 – Nov 2006: Research Fellowship for a project entitled “Basi molecolari della regolazione della β -secretasi da ceramide”, at Section of General Pathology, University of Verona, Italy.

Aug 2005 – Mar 2006: Research Fellowship for a project entitled “Studio del meccanismo di neurotossicità degli oligomeri solubili di beta-amiloide. Ruolo protettivo del recettore per neurotrofina p75NTR”, at Section of General Pathology, University of Verona, Italy.

Dec 2004 – June 2005: Research Fellowship for a project entitled “Malattie neurodegenerative: approcci innovativi allo sviluppo dei meccanismi patogenetici, alla diagnosi e al trattamento”, at Section of General Pathology, University of Verona, Italy.

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Experienced in supervising and coaching students: generate ideas and find creative ways to solve problems in pioneering and innovating solutions. Dr. Montresor has a good ability to establish effective and constructive interpersonal relationships.

PARTICIPATION TO FUNDED INTERNATIONAL AND NATIONAL PROJECTS

- 2021-2022, project funded by Fondazione Fibrosi Cistica. Project title: Monocyte integrin activation as a cystic fibrosis drug evaluation test: validation phase. Role in the project: key personnel for research studies and experiments.
- 2019-2020, project funded by Fondazione Fibrosi Cistica. Project title: Monocyte integrin activation as a cystic fibrosis drug evaluation test. Role in the project: key personnel for research studies and experiments.
- 2015-2018, project funded by AIRC. Project title: Protein tyrosine kinases and phosphatases interplay in chemokine-regulated B-Chronic Lymphocytic Leukemia cell adhesion. Role in the project: key personnel for research studies and experiments.
- 2014, project funded by Fondazione Cariverona, Verona Nanomedicine Initiative (WP4). Role in the project: collaborator.
- 2009-2011, project funded by AIRC. Project title: Phosphoproteomics and metabolomics analysis of chemokine-triggered B-Chronic Lymphocytic Leukemia cells. Role in the project: key personnel for research studies and experiments.

SCIENTIFIC ACTIVITY

Dr. Montresor graduated in Biological Sciences (Single cycle master's degree, Faculty of Biology, University of Padua) in November 2004 carrying out a research project in the laboratory of Prof. Filippo Rossi at the University of Verona. The project aimed at studying the role of p75 neurotrophin receptor (p75NTR) in beta-amyloid induced apoptosis in neuroblastoma cell lines.

In 2009, Dr. Montresor obtained a PhD in Molecular and Cellular Pathology at the University of

Verona. During his PhD research program, Dr. Montresor worked in the laboratory of Prof. Carlo Laudanna, studying the signaling mechanisms controlling integrin activation in chronic lymphocytic leukemia (CLL) cells, establishing a stimulating collaboration with the group of Prof. Fabrizio Vinante (Section of Hematology, Department of Medicine, University of Verona).

During his stage in the Laboratory of Cell Trafficking and Signal Transduction led by Prof. Carlo Laudanna, Dr. Montresor acquired an extensive background in general pathology, immunology and mechanisms of signal transduction studying cell trafficking in normal versus leukemic cells; he also acquired broad skills in functional cell assays and biochemical techniques. He became expert in isolation of different subtypes of leukocytes with density gradient or immunomagnetic systems, small interfering RNA (siRNA) technique, in Trojan nanovector technology and in biochemical assays for signaling protein activation studies.

After his PhD period, in 2010 Dr. Montresor worked in the Laboratory of Cell Trafficking and Signal Transduction led by Prof. Carlo Laudanna, investigating the mechanisms of signal transduction in human T- and B-lymphocytes, characterizing the main role of JAKs tyrosine kinases in the regulation of integrin activation.

In 2015, dr. Montresor worked on an innovative project developed by Prof. C. Laudanna, characterizing the PTPRG tyr-phosphatase function as a negative regulator of proadhesive mechanisms in human monocytes. Moreover, he was also involved in a study aimed at investigating the defective adhesion of monocytes isolated from cystic fibrosis (CF) patients.

Recently, Dr. Montresor concluded an important study on the role of PTPRG tyrosine phosphatase in CLL, demonstrating the main role of PTPRG as a negative regulator of leukemic cell adhesion and, of great interest, of cell survival. Moreover, dr. Montresor has an ongoing collaboration with Prof. Tiziana Vaisitti e Prof. Silvia Deaglio (University of Turin), in a study aimed at characterizing the signaling mechanisms regulating integrin-mediated cell adhesion cells and the proapoptotic role of the PTPRG phosphatase in Richter's syndrome (RS) cells.

Very recently, he collaborated with Prof. R. Alon (Weizmann Institute of Science, Rehovot, Israel) on a project aiming at defining the signaling function of microvilli, and with the group of Prof. E. Hirsch, at the University of Turin, to study the effects of PI3K γ mimetic peptides, based on the Trojan nanovector technology, in neutrophil adhesion and migration.

Finally, Dr. Montresor is involved in a project funded by Fondazione Fibrosi Cistica (Project FFC#7/2021, PI Prof. Laudanna, Title: "Monocyte integrin activation as a cystic fibrosis drug evaluation test: validation phase"), in collaboration with Prof. Claudio Sorio (Department of Medicine, University of Verona) and Dr. Paola Melotti (Centro Fibrosi Cistica, Azienda Ospedaliera Universitaria Integrata di Verona, Verona), focused on correction of monocyte integrin activation in CF patients during pharmacological therapies (TRIKAFTA and SYMKEVI).

PUBLICATIONS AND BIBLIOMETRY

- International peer-reviewed publications: 18 (6 as first author)
- Number of citations: 865 (tracked by Scopus Nov 21st 2021)

— Scopus h-index (2011-2021): 13

PUBLICATION IN INTERNATIONAL JOURNALS

1. CCR7 signalosomes are preassembled on tips of lymphocyte microvilli in proximity to LFA-1. Ghosh S, Feigelson SW, Montresor A, Shimoni E, Roncato F, Legler DF, Laudanna C, Haran G, Alon R. *Biophys J.* 2021;120:1-11. DOI: 10.1016/j.bpj.2021.08.014. PMID: 34411577
2. Activation of Protein Tyrosine Phosphatase Receptor Type γ Suppresses Mechanisms of Adhesion and Survival in Chronic Lymphocytic Leukemia Cells. Montresor A, Toffali L, Fumagalli L, Constantin G, Rigo A, Ferrarini I, Vinante F, Laudanna C. *J Immunol.* 2021;207(2):671-84. DOI: 10.4049/jimmunol.2001462. PMID: 34162728
3. Monocyte-to-macrophage switch reversibly impaired by Ibrutinib. Ferrarini I, Rigo A, Montresor A, Laudanna C, Vinante F. *Oncotarget.* 2019;10(20):1943-56. DOI: 10.18632/oncotarget.26744. PMID: 30956776
4. CXCR4- and BCR-integrin activation in chronic lymphocytic leukemia cells depends on JAK2-activated Bruton's tyrosine kinase. Montresor A, Toffali L, Rigo A, Ferrarini I, Vinante F, Laudanna C. *Oncotarget.* 2018;9(80):35123-40. DOI: 10.18632/oncotarget.26212 . PMID: 3041668
5. Efficient lysis of B-chronic lymphocytic leukemia cells by the plant-derived sesquiterpene alcohol α -bisabolol, a dual proapoptotic and antiautophagic agent. Rigo A, Ferrarini I, Bonalumi A, Tecchio C, Montresor A, Laudanna C, Vinante F. *Oncotarget.* 2018;9(40):25877-90. DOI: 10.18632/oncotarget.25398. PMID: 29899828
6. SOS1, ARHGEF1 and DOCK2 rho-GEFs mediate JAK-dependent LFA-1 activation by chemokines. Toffali L, Montresor A, Mirenda M, Scita G, Laudanna C. *J Immunol.* 2017;198(2):708-17. DOI: 10.4049/jimmunol.1600933. PMID: 27986909
7. Mutations of cystic fibrosis transmembrane conductance regulator (CFTR) gene cause a monocyte-selective adhesion deficiency. Sorio C, Montresor A, Bolomini-Vittori M, Calderer S, Rossi B, Angiari, Johansson J, Vezzalini M, Leal T, Calcaterra E, Baroukh A, Melotti P, Laudanna C. *AJRCCM.* 2016;193(10):1123-33. DOI: 10.1164/rccm.201510-1922OC. PMID: 26694899
8. JAK2 tyrosine kinase mediates integrin activation induced by CXCL12 in B-cell chronic lymphocytic leukemia. Montresor A, Toffali L, Mirenda M, Rigo A, Vinante F, Laudanna C. *Oncotarget.* 2015;6(33):34245-57. DOI: 10.18632/oncotarget.5196. PMID: 26413812
9. Neutrophils promote Alzheimer's disease-like pathology and cognitive decline via LFA-1 integrin. Zenaro E, Pietronigro E, Della-Bianca V, Piacentino G, Marongiu L, Budui S, Turano E,

Rossi B, Angiari S, Dusi S, Montresor A, Carlucci T, Nanì S, Tosadori G, Calciano L, Catalucci D, Berton G, Bonetti B, Constantin G. *Nat Med.* 2015;21(8):880-6. DOI: 10.1038/nm.3913. PMID: 26214837.

10. Oxygenator Is the Main Responsible for Leukocyte Activation in Experimental Model of Extracorporeal Circulation: A Cautionary Tale. Rungatscher A, Tessari M, Stranieri C, Solani E, Linardi D, Milani E, Montresor A, Salvetti B, Menon T, Faggian G. *Mediators Inflamm.* 2015;484979. DOI: 10.1155/2015/484979. PMID: 26063972

11. Protein tyrosine phosphatase receptor type γ is a JAK phosphatase and negatively regulates leukocyte integrin activation. Mirenda M, Toffali L, Montresor A, Scardoni G, Sorio C, Laudanna C. *J Immunol.* 2015;194(5):2168-79. DOI: 10.4049/jimmunol.1401841. PMID: 25624455

12. Node Interference and Robustness: Performing Virtual Knock-Out Experiments on Biological Networks: The Case of Leukocyte Integrin Activation Network. Scardoni G, Montresor A, Laudanna C. *PLOS One.* 2014;9(2):e88938. DOI: 10.1371/journal.pone.0088938. PMID: 24586448

13. JAK Tyrosine Kinases Promote Hierarchical Activation of Rho and Rap Modules of Integrin Activation. Montresor A, Bolomini-Vittori M, Toffali L, Rossi B, Constantin G, Laudanna C. *J Cell Biol.* 2013;203(6):1003-19. DOI: 10.1083/jcb.201303067. PMID: 24368807

14. Chemokines and the signaling modules regulating integrin affinity. Montresor A, Toffali L, Constantin G, Laudanna C. *Front Immunol.* 2012;3:127. DOI: 10.3389/fimmu.2012.00127. PMID: 22654882

15. Comparative analysis of normal versus CLL B-lymphocytes reveals patient-specific variability in signaling mechanisms controlling LFA-1 activation by chemokines. Montresor A, Bolomini-Vittori M, Simon SI, Rigo A, Vinante F, Laudanna C. *Cancer Res.* 2009;69(24):9281-90. DOI: 10.1158/0008-5472.CAN-09-2009. PMID: 19934331

16. Lymphocyte crawling and transendothelial migration require chemokine triggering of high-affinity LFA-1 integrin. Shulman Z, Shinder V, Klein E, Grabovsky V, Yeger O, Geron E, Montresor A, Bolomini-Vittori M, Feigelson SW, Kirchhausen T, Laudanna C, Shakhar G, Alon R. *Immunity.* 2009;30(3):384-96. DOI: 10.1016/j.jimmuni.2008.12.020. PMID: 19268609

17. Regulation of conformer-specific activation of the integrin LFA-1 by a chemokine-triggered Rho signaling module. Bolomini-Vittori M, **Montresor A**, Giagulli C, Staunton D, Rossi B, Martinello M, Constantin G, Laudanna C. *Nat Immunol.* 2009;10(2):185-94. DOI: 10.1038/ni.1691. PMID: 19136961

18. The expression of p75 neurotrophin receptor protects against the neurotoxicity of soluble oligomers of beta-amyloid. Costantini C, Della-Bianca V, Formaggio E, Chiamulera C, Montresor A, Rossi F. *Exp Cell Res.* 2005;311(1):126-34. DOI: 10.1016/j.yexcr.2005.09.004. PMID: 16223482