

## *CURRICULUM VITAE*

### *Prof. Alessandro Fanzani*

#### **Personal**

**Name and Surname:** Alessandro Fanzani, born on August 1<sup>st</sup> 1973. Master Degree in Biological Science – Biomolecular field (with full marks) in 1999 by the University of Milan (Italy).

**Career:** Department of Molecular and Translational Medicine, University of Medicine, Brescia, Italy.

2015-present: **Associate Professor** of Biochemistry at the Faculty of Medicine, University of Brescia (Italy).

2005: **Researcher position** at the Faculty of Medicine, University of Brescia (Italy).

2004-2005: **Post-Doc** at the Department of Microbiology by the New York University (USA).

2003 (December 15<sup>th</sup>): **PhD** in “Cellular and Molecular Biotechnologies applied to the Biomedicine” University of Brescia (Italy).

#### **Teaching courses**

Organic Chemistry (Medicine Degree), Chemistry (Sport Science Degree), Metabolic Biochemistry of physical exercise (Sport Science Degree), Nutrition Biochemistry (Sport Science Degree), Biochemistry (Bachelor degree in Technicians for the prevention of environments and workplaces).

#### **Research interests**

Characterization of the role of glycolytic enzymes (sialidases) in differentiation, atrophy and hypertrophy of muscle cells. Cellular and molecular analysis of myoblasts expressing mutated forms of Caveolin-3 involved in muscular dystrophies (Limb Girdle Muscular Dystrophy 1-c). Characterization of myostatin-deficient myoblast lines. Analysis of molecular markers (caveolins, cavins) in myogenic tumors (rhabdomyosarcoma) and adipocytic neoplasms (liposarcoma).

#### **Referent of Research Agencies**

Ministry of Education, University and Research (Italy), Institut Pasteur de Lille (France), WorldWide Cancer Research (UK).

#### **Scientific publications**

Articles in international peer reviewed journals: 44

#### **List of publications**

44. *Animal models of well-differentiated/dedifferentiated liposarcoma: utility and limitations.* Codenotti S, Mansoury W, Pinardi L, Monti E, Marampon F, Fanzani A. *OncoTargets and Therapy* 2019.

43. *P53 mutational status predisposes colorectal cancer cell lines to senescence induced by GLPG1790-mediated ephrin signaling inhibition.* Colapietro A, Gravina GL, Pietrantonio I, Petragnano F, Fasciani I, Scicchitano BM, Del Fattore A, Musio D, De Felice F, Beirinckx F, Pujuguet P, Saniere L, Van der Aar E, Maggio R, Fanzani A, Tombolini V, Marampon F, Festuccia C. *Oncology Reports* 2019.

42. *Urocortin Induces Phosphorylation of Distinct Residues of Signal Transducer and Activator of Transcription 3 (STAT3) via Different Signaling Pathways.* Corsetti G, Yuan Z, Romano C, Chen-Scarabelli C, Fanzani A, Pasini E, Dioguardi FS, Onorati F, Linardi D, Knight R, Patel H, Faggian G, Saravolatz L, Scarabelli TM. *Med Sci Monit Basic Res.* 2019 May 10;25:139-152.

41. *Sulodexide counteracts endothelial dysfunction induced by metabolic or non-metabolic stresses through activation of the autophagic program.* De Felice F, Megiorni F, Pietrantonio I, Tini P, Lessiani G, Mastroiacovo D, Mattana P, Antinozzi C, Di Luigi L, Delle Monache S, Angelucci A, Festuccia C, Fanzani A, Maggio R, Tombolini V, Gravina GL, Marampon F. *Eur Rev Med Pharmacol Sci.* 2019 Mar;23(6):2669-2680.

40. *Caveolin-1 enhances metastasis formation in a human model of embryonal rhabdomyosarcoma through Erk signaling cooperation.* Codenotti S, Faggi F, Ronca R, Chioldelli P, Grillo E, Guescini M, Megiorni F, Marampon F, Fanzani A. *Cancer Letters* 2019 May 1;449:135-144.

39. *Nrf2 orchestrates the "Redox Resetting" process in Rhabdomyosarcoma cells permitting to overcome radiation induced oxidative stress mediated toxicity.* Marampon F, Codenotti S, Fanzani A, Megiorni F, Del Fattore A, Camero S, Gravina GL, Festuccia C, Musio D, De Felice F, Nardone V, Santoro AN, Pirtoli L, Tombolini V, Fioravanti A, Cheleschi S, Tini P. *Journal of Cancer Research and Clinical Oncology* 2019 Apr;145(4):881-893.
38. *Histone deacetylase inhibitor ITF2357 (Givinostat) reverts transformed phenotype and counteracts stemness in in vitro and in vivo models of human glioblastoma.* Marampon F, Leoni F, Mancini A, Pietrantonio I, Codenotti S, Ferella L, Megiorni F, Porro G, Galbiati E, Pozzi P, Mascagni P, Budillon A, Maggio R, Tombolini V, Fanzani A, Gravina GL, Festuccia C. *Journal of Cancer Research and Clinical Oncology* 2019 Feb;145(2):393-409.
37. *Cell growth potential drives ferroptosis susceptibility in rhabdomyosarcoma and myoblast cell lines.* Codenotti S, Poli M, Asperti M, Zizioli D, Marampon F, Fanzani A. *Journal of Cancer Research and Clinical Oncology* 2018 Sep;144(9):1717-1730.
36. *Cavin-2 is a specific marker for detection of well-differentiated liposarcoma.* Codenotti S, Vezzoli M, Poliani PL, Cominelli M, Monti E, Fanzani A. *Biochem Biophys Res Commun.* 2017 Aug 30.
35. *Iron, Oxidative Damage and Ferroptosis in Rhabdomyosarcoma.* Fanzani A, Poli M. *Int J Mol Sci.* 2017 Aug 7;18(8).
34. *Focus on the role of Caveolin and Cavin protein families in liposarcoma.* Codenotti S, Vezzoli M, Monti E, Fanzani A. *Differentiation Journal*, 2017. Mar – Apr;94:21-26.
33. *Caveolin-1, Caveolin-2 and Cavin-1 are strong predictors of adipogenic differentiation in human tumors and cell lines of liposarcoma.* Codenotti S, Vezzoli M, Poliani PL, Cominelli M, Bono F, Kabbout H, Faggi F, Chiarelli N, Colombi M, Zanella I, Biasiotto G, Montanelli A, Caimi L, Monti E, Fanzani A. *Eur. J. Cell Biology* 2016.
32. *Melatonin action in tumor skeletal muscle cells: an ultrastructural study.* Burattini S, Battistelli M, Codenotti S, Falcieri E, Fanzani A, Salucci S. *Acta Histochem.* 2016 Apr;118(3):278-85. doi: 10.1016/j.acthis.2016.02.004.
31. *Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition).* Klionsky DJ, et al. *Autophagy.* 2016 Jan 2;12(1):1-222.
30. *Uncovering metabolism in rhabdomyosarcoma.* Monti E, Fanzani A. *Cell Cycle.* 2016 Jan 17;15(2):184-95.
29. *MURC/cavin-4 Is Co-Expressed with Caveolin-3 in Rhabdomyosarcoma Tumors and Its Silencing Prevents Myogenic Differentiation in the Human Embryonal RD Cell Line.* Faggi F, Codenotti S, Poliani PL, Cominelli M, Chiarelli N, Colombi M, Vezzoli M, Monti E, Bono F, Tulipano G, Fiorentini C, Zanola A, Lo HP, Parton RG, Keller C, Fanzani A. *PLoS One.* 2015 Jun 18;10(6):e0130287.
28. *Melatonin decreases cell proliferation, impairs myogenic differentiation and triggers apoptotic cell death in rhabdomyosarcoma cell lines.* Codenotti S, Battistelli M, Burattini S, Salucci S, Falcieri E, Rezzani R, Faggi F, Colombi M, Monti E, Fanzani A. *Oncol Rep.* 2015 Jul;34(1):279-87.
27. *Cavin-1 and Caveolin-1 are both required to support cell proliferation, migration and anchorage-independent cell growth in rhabdomyosarcoma.* Faggi F, Chiarelli N, Colombi M, Mitola S, Ronca R, Madaro L, Bouche M, Poliani PL, Vezzoli M, Longhena F, Monti E, Salani B, Maggi D, Keller C, Fanzani A. *Lab Invest.* 2015 Jun;95(6):585-602.
26. *Phosphocaveolin-1 enforces tumor growth and chemoresistance in rhabdomyosarcoma.* Faggi F, Mitola S, Sorci G, Riuzzi F, Donato R, Codenotti S, Poliani PL, Cominelli M, Vescovi R, Rossi S, Calza S, Colombi M, Penna F, Costelli P, Perini I, Sampaolesi M, Monti E, Fanzani A. *PLoS One* 2014 Jan 10; 9(1): e84618.
25. *Muscular dystrophies share pathogenetic mechanisms with muscle sarcomas.* Fanzani A, Monti E, Donato R, Sorci G. *Trends Mol Med.* 2013 Sep;19(9):546-54.
24. *Cobalt triggers necrotic cell death and atrophy in skeletal C2C12 myotubes.* Rovetta F, Stacchiotti A, Faggi F, Catalani S, Apostoli P, Fanzani A, Aleo MF. *Toxicol Appl Pharmacol.* 2013 Sep 1;271(2):196-205.
23. *Autophagic degradation contributes to muscle wasting in cancer cachexia.* Penna F, Costamagna D, Pin F, Camperi A, Fanzani A, Chiarpotto EM, Cavallini G, Bonelli G, Baccino FM, Costelli P. *Am J Pathol.* 2013 Apr;182(4):1367-78.

22. *Implications for the mammalian sialidases in the physiopathology of skeletal muscle.* Fanzani A, Zanola A, Faggi F, Papini N, Venerando B, Tettamanti G, Sampaolesi M, Monti E. *Skelet Muscle.* 2012 Nov 1;2(1):23.
21. *Guidelines for the use and interpretation of assays for monitoring autophagy.* Klionsky DJ and 1269 others. *Autophagy.* 2012 Apr;8(4):445-544.
20. *Molecular and cellular mechanisms of skeletal muscle atrophy: an update.* Fanzani A, Conraads VM, Penna F, Martinet W. *J Cachexia Sarcopenia Muscle.* 2012 Sep;3(3):163-79.
19. *Rhabdomyosarcomas: an overview on the experimental animal models.* Zanola A, Rossi S, Faggi F, Monti E, Fanzani A. *J Cell Mol Med.* 2012 Jul;16(7):1377-91.
18. *Caveolins in rhabdomyosarcoma.* Rossi S, Poliani PL, Missale C, Monti E, Fanzani A. *J Cell Mol Med.* 2011 Dec;15(12):2553-68.
17. *Differentiation of human rhabdomyosarcoma RD cells is regulated by reciprocal, functional interactions between myostatin, p38 and extracellular regulated kinase signalling pathways.* Rossi S, Stoppani E, Puri PL, Fanzani A. *Eur J Cancer.* 2011 May;47(7):1095-105.
16. *Point mutated caveolin-3 form (P104L) impairs myoblast differentiation via Akt and p38 signalling reduction, leading to an immature cell signature.* Stoppani E, Rossi S, Meacci E, Penna F, Costelli P, Bellucci A, Faggi F, Maiolo D, Monti E, Fanzani A. *Biochim Biophys Acta.* 2011 Apr;1812(4):468-79.
15. *Caveolin 1 is a marker of poor differentiation in Rhabdomyosarcoma.* Rossi S, Poliani PL, Cominelli M, Bozzato A, Vescovi R, Monti E, Fanzani A. *Eur J Cancer.* 2011 Mar;47(5):761-72.
14. *Cisplatin triggers atrophy of skeletal C2C12 myotubes via impairment of Akt signalling pathway and subsequent increment activity of proteasome and autophagy systems.* Fanzani A, Zanola A, Rovetta F, Rossi S, Aleo MF. *Toxicol Appl Pharmacol.* 2011 Feb 1;250(3):312-21.
13. *Muscle wasting and impaired myogenesis in tumor bearing mice are prevented by ERK inhibition.* Penna F, Costamagna D, Fanzani A, Bonelli G, Baccino FM, Costelli P. *PLoS One.* 2010 Oct 27;5(10):e13604.
12. *Characterization of the AP-1  $\mu$ A and  $\mu$ B adaptins in zebrafish (*Danio rerio*).* Zizioli D, Forlanelli E, Guarienti M, Nicoli S, Fanzani A, Bresciani R, Borsani G, Preti A, Cotelli F, Schu P. *Dev Dyn.* 2010 Sep;239(9):2404-12.
11. *L6E9 myoblasts are deficient of myostatin and additional TGF-beta members are candidates to developmentally control their fiber formation.* Rossi S, Stoppani E, Gobbo M, Caroli A, Fanzani A. *J Biomed Biotechnol.* 2010;2010:326909.
10. *Defective myogenic differentiation of human rhabdomyosarcoma cells is characterized by sialidase Neu2 loss of expression.* Stoppani E, Rossi S, Marchesini S, Preti A, Fanzani A. *Cell Biol Int.* 2009 Sep;33(9):1020-5.
9. *The cytosolic sialidase Neu2 is degraded by autophagy during myoblast atrophy.* Rossi S, Stoppani E, Martinet W, Bonetto A, Costelli P, Giuliani R, Colombo F, Preti A, Marchesini S, Fanzani A. *Biochim Biophys Acta.* 2009 Aug;1790(8):817-28.
8. *The enzymatic activity of sialidase Neu2 is inversely regulated during in vitro myoblast hypertrophy and atrophy.* Fanzani A, Giuliani R, Colombo F, Rossi S, Stoppani E, Martinet W, Preti A, Marchesini S. *Biochem Biophys Res Commun.* 2008 May 30;370(2):376-81.
7. *Phenotypic behavior of C2C12 myoblasts upon expression of the dystrophy-related caveolin-3 P104L and TFT mutants.* Fanzani A, Stoppani E, Gualandi L, Giuliani R, Galbiati F, Rossi S, Fra A, Preti A, Marchesini S. *FEBS Lett.* 2007 Oct 30;581(26):5099-104.
6. *Hypertrophy and atrophy inversely regulate Caveolin-3 expression in myoblasts.* Fanzani A, Musarò A, Stoppani E, Giuliani R, Colombo F, Preti A, Marchesini S. *Biochem Biophys Res Commun.* 2007 May 25;357(1):314-8.
5. *Clozapine-induced alteration of glucose homeostasis in the rat: the contribution of hypothalamic-pituitary-adrenal axis activation.* Tulipano G, Rizzetti C, Bianchi I, Fanzani A, Spano P, Cocchi D. *Neuroendocrinology.* 2007;85(2):61-70.
4. *Insulin-like growth factor 1 signaling regulates cytosolic sialidase Neu2 expression during myoblast differentiation and hypertrophy.* Fanzani A, Colombo F, Giuliani R, Preti A, Marchesini S. *FEBS J.* 2006 Aug;273(16):3709-21.

3. *Design and optimization of lentiviral vectors for transfer of GALC expression in Twitcher brain.* Dolcetta D, Perani L, Givogri MI, Galbiati F, Amadio S, Del Carro U, Finocchiaro G, Fanzani A, Marchesini S, Naldini L, Roncarolo MG, Bongarzone E. *J Gene Med.* 2006 Aug;8(8):962-71.
2. *Cytosolic sialidase Neu2 upregulation during PC12 cells differentiation.* Fanzani A, Colombo F, Giuliani R, Preti A, Marchesini S. *FEBS Lett.* 2004 May 21;566(1-3):178-82.
1. *Overexpression of cytosolic sialidase Neu2 induces myoblast differentiation in C2C12 cells.* Fanzani A, Giuliani R, Colombo F, Zizioli D, Presta M, Preti A, Marchesini S. *FEBS Lett.* 2003 Jul 17;5.