

Curriculum Vitae Laura Bianchi

Personal data

Birth date: 01/06/1976

Place of birth: Siena (Italy)

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EDUCATION AND TRAINING

2017: Post-graduate course in vegetarian nutrition - Accredited by the National Continuing Education Commission, Nutrimedifor s.r.l., Florence.

2015-2016: Advanced training course in food science: nutrigenetics, nutrigenomics, nutraceuticals: Department of Experimental and Clinical Biomedical Sciences - University of Florence.

2011: Course of "System Biology: statistics, proteomics, microarrays", Biotechnology Foundation, Turin.

2004: Authorization to practice as a biologist, University of Siena.

2001-2005: PhD student in Biotechnology at the Molecular Biology Department, University of Siena.

1995-2000: Student of Biological Sciences, University of Siena; graduated magna cum laudae.

EMPLOYMENT AND RESEARCH EXPERIENCE

12/2018-to date: Fixed term Assistant Professor (Type B, legge 240/2010-art. 24, comma 3), for the project: "Functional proteomics: bioinformatic analysis of complex proteomic data for the characterization of biological systems and for biomarker identification", Dep. of Life Sciences, Siena University.

2013-2018: Principal Investigator of the Proteomics Unit for the Telethon National Grant "Targeting ER stress to treat osteogenesis imperfecta".

2014-2018: Postdoctoral Researcher for project "Endoplasmic Reticulum stress in osteogenesis imperfecta: a novel potential therapeutic target", Siena University.

2011-2013: Assistant Professor (fixed term) at the Siena University Dep. of Biotechnology, for multivariate biomarker finding in several human conditions, in particular in rare diseases and reproductive impairment.

2009-2010: Laboratory supervisor of the Functional Proteomics Lab. at the Molecular Biology Dep. of Siena University, according to a Coordinated and Continuative Collaboration contract, for the Proteomics Italian-net project: "National-Net for the Study of human Proteomics: investigations in several human physiological and pathological conditions".

2005-2008: Postdoctoral Researcher for the Siena University (2005-2008), working on clinical and pharmacological applications of proteomics.

Laura Bianchi is Assistant Professor (BIO10) in Bioinformatics and Proteome Science at Department of Life Sciences, Siena University. She has always dealt with the characterization of physiological and pathological states, both in men and in model animals, by applying various

proteomic techniques and bioinformatics resources. Over the years, her research activities have mainly focused on the study of rare human disorders, *e.g.* Cornelia de Lange syndrome, cystic fibrosis, Krabbe disease, rare respiratory disorders, multiple sclerosis, Fabry disease and, in particular, various types of dominant and recessive **osteogenesis imperfecta**.

By performing different functional proteomics approaches, Dr. Bianchi delineated several protein profiles and affected molecular pathways in disease. These contributed to the understanding of biochemical and molecular bases of the investigated disorders and allowed the identification of novel pharmacological targets for innovative therapeutic approaches. Dr. Bianchi also contributed to the evaluation of pharmacological treatments, both in oncology and rare diseases, and in the characterization of human germinal material and embryonic tissues for applications in reproductive medicine and *in vitro* fertilization.

Since 2001 she holds teaching activities concerning Biochemistry, Proteomics, and Bioinformatics in several courses of First and Second cycle degrees in Biological Sciences and for the “A. Del Lungo” Master in Bioinformatics, at the University of Siena. She has also taught in several courses of Proteome Science in different Italian Training Schools. She supervised numerous First and Second cycle degrees’ students in Biological Sciences and PhD students in Biotechnology and Life Science.

Since 2002 she is member of Local Organizing Committee of the biennial international conference “Siena Meeting: From genome to proteome”, Siena, Italy. She also contributed to the organization, as member of Local Committee, of the HUPO 10th World Congress “HUPO 2011: Translational Proteomics”, Geneva, Switzerland.

Her scientific production, which includes, in addition to the original peer reviewed scientific publications listed below, some publications on proteomics books, and more than 120 scientific contributions to National and International conferences, underlines her broad interest in proteomics applied to many fields of Life Sciences: from humans to animal models (tissue, body fluids, and cell cultures), as well as from plants to fungi and bacteria.

Moreover, since 2007 she is manuscript reviewer for several scientific Journals, such as Amino Acid, Journal of Proteome Research, Proteome Science, Journal of Proteomics, EuPA Open Proteomics, Electrophoresis, BioPolymers, Journal of Food Technology and Biotechnology, Food Chemistry, Reproduction, Fertility and Development, Journal of assisted reproduction and genetics, Pediatric Health, Medicine and Therapeutics, Molecular and cellular endocrinology, and Annals of Botany.

Since 2003 she is member of Italian Proteomics Associations.

PEER REVIEWED SCIENTIFIC PUBLICATIONS

Venosi S, Ceccarelli G, de Angelis M, Laghi L, **Bianchi L**, Martinelli O, Maruca D, Cavallari EN, Toscanella F, Vassalini P, Trinchieri V, Oliva A, d’Ettore G. Infected Chronic Ischemic Wound Topically Treated With a Multi-Strain Probiotic Formulation: A Novel Tailored Treatment Strategy. *J Transl Med.* 2019 Nov 9;17(1):364. doi: 10.1186/s12967-019-2111-0.

Bianchi L, Laghi L, Correani V, Schifano E, Landi C, Uccelletti D, Mattei B. A Combined Proteomics, Metabolomics and In Vivo Analysis Approach for the Characterization of Probiotics in Large-Scale Production. *Biomolecules.* 2020 Jan 18;10(1):157. doi: 10.3390/biom10010157.

Landi C*, Luddi A*, **Bianchi L***, Pannuzzo G, Pavone V, Piomboni P, Bini L. Proteostasis network alteration in lysosomal storage disorders: insights from the mouse model of Krabbe disease. *J Neurosci Res*. 2020 Apr;98(4):718-733. doi: 10.1002/jnr.24558.

De Pasquale V, Costanzo M, Siciliano RA, Mazzeo MF, Pistorio V, **Bianchi L**, Marchese E, Ruoppolo M, Pavone LM, Caterino M. Proteomic analysis of Mucopolysaccharidosis IIIB mouse brain. *Biomolecules*. 2020 Feb 26;10(3):355. doi: 10.3390/biom10030355.

Landi C, Santinelli L, **Bianchi L**, Shaba E, Ceccarelli G, Cavallari EN, Borrazzo C, Pinacchio C, Scagnolari C, Vullo V, Bini L, d'Ettore G. Cognitive impairment and CSF proteome modification after oral bacteriotherapy in HIV patients. *J Neurovirol*. 2020 Feb;26(1):95-106. doi: 10.1007/s13365-019-00801-7.

Landi C, Bargagli E, Carleo A, Refini RM, Bennett D, **Bianchi L**, Cillis G, Prasse A, Bini L, Rottoli P. Bronchoalveolar lavage proteomic analysis in pulmonary fibrosis associated with systemic sclerosis: S100A6 and 14-3-3 ϵ as potential biomarkers. *Rheumatology*. In press (accettato in data 20 Giugno 2018).

Luddi A, Gori M, Marrocco C, Capaldo A, Pavone V, **Bianchi L**, Boschi L, Morgante G, Piomboni P, de Leo V. Matrix metalloproteinases and their inhibitors in human cumulus and granulosa cells as biomarkers for oocyte quality estimation. *Fertil Steril*. 2018 May;109(5):930-939.e3. doi:10.1016/j.fertnstert.2018.01.030.

Ontañón OM, Landi C, Carleo A, Gagliardi A, **Bianchi L**, González PS, Agostini E, Bini L. What makes *A. guillouiae* SFC 500-1A able to co-metabolize phenol and Cr(VI)? A proteomic approach. *J Hazard Mater*. 2018 Jul 15;354:215-224. doi: 10.1016/j.jhazmat.2018.04.068.

Bianchi L§, Carnemolla C, Viviani V, Landi C, Pavone V, Luddi A, Piomboni P, Bini L. Soluble protein fraction of human seminal plasma. *J Proteomics*. 2018 Mar 1;174:85-100. doi: 10.1016/j.jprot.2017.12.015.

Puglia M, Landi C, Gagliardi A, Breslin L, Armini A, Brunetti J, Pini A, **Bianchi L**, Bini L. The proteome speciation of an immortalized cystic fibrosis cell line: New perspectives on the pathophysiology of the disease. *J Proteomics*. 2018 Jan 6;170:28-42. doi: 10.1016/j.jprot.2017.09.013.

D'Anna C, Cigna D, Di Sano C, Di Vincenzo S, Dino P, Ferraro M, Bini L, **Bianchi L**, Di Gaudio F, Gjomarkaj M, Pace E. Exposure to cigarette smoke extract and lipopolysaccharide modifies cytoskeleton organization in bronchial epithelial cells. *Exp Lung Res*. 2017 Nov - Dec;43(9-10):347-358. doi: 10.1080/01902148.2017.1377784.

Gagliardi A, Besio R, Carnemolla C, Landi C, Armini A, Aglan M, Otaify G, Temtamy SA, Forlino A, Bini L, **Bianchi L**§. Cytoskeleton and nuclear lamina affection in recessive osteogenesis imperfecta: A functional proteomics perspective. *J Proteomics*. 2017 Sep 7;167:46-59. doi:10.1016/j.jprot.2017.08.007.

Bianchi L, Gagliardi A, Landi C, Focarelli R, De Leo V, Luddi A, Bini L, Piomboni P. Protein pathways working in human follicular fluid: the future for tailored IVF? *Expert Rev Mol Med*. 2016 May 6;18:e9. doi:10.1017/erm.2016.4. Review.

Carleo A, Bargagli E, Landi C, Bennet D, **Bianchi L**, Gagliardi A, Carnemolla C, Perari M, Cillis G, Armini A, Bini L, Rottoli P. Comparative proteomic analysis of bronchoalveolar lavage of familial and sporadic cases of Idiopathic Pulmonary Fibrosis. *J Breath Res*. 2016 Apr 15;10(2):026007. doi:10.1088/1752-7155/10/2/026007.

Gistelincx C, Gioia R, Gagliardi A, Tonelli F, Marchese L, **Bianchi L**, Landi C, Bini L, Huysseune A, Witten PE, Staes A, Gevaert K, De Rocker N, Menten B, Malfait F, Leikin S, Carra S, Tenni R, Rossi A, De Paepe A, Coucke P, Willaert A, Forlino A. Zebrafish Collagen Type I: Molecular and Biochemical Characterization of the Major Structural Protein in Bone and Skin. *Sci Rep*. 2016 Feb 15;6:21540. doi:10.1038/srep21540.

Gagliardi A, Lamboglia E, **Bianchi L**, Landi C, Armini A, Ciolfi S, Bini L, Marri L1. Proteomics analysis of a long-term survival strain of *Escherichia coli* K-12 exhibiting a growth advantage in stationary-phase (GASP) phenotype. *Proteomics*. 2016 Mar;16(6):963-72. doi:10.1002/pmic.201500314.

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Bianchi L, Gagliardi A, Maruelli S, Besio R, Landi C, Gioia R, Kozloff KM, Khoury BM, Coucke PJ, Symoens S, Marini JC, Rossi A, Bini L, Forlino A. Altered cytoskeletal organization characterized lethal but not surviving *Brtl*^{+/-} mice: insight on phenotypic variability in osteogenesis imperfecta. *Hum Mol Genet*. 2015 Nov 1;24(21):6118-33. doi:10.1093/hmg/ddv328.

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Angeloni C, Turroni S, **Bianchi L**, Fabbri D, Motori E, Malaguti M, Leoncini E, Bini L, Brigidi P, Hrelia S. Novel targets of sulforaphane in primary cardiomyocytes identified by proteomic analysis. *PLoS One*. 2013 Dec 11;8(12):e83283. doi:10.1371/journal.pone.0083283.

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Cigna D, D'Anna C, Zizzo C, Francofonte D, Sorrentino I, Colomba P, Albeggiani G, Armini A, **Bianchi L**, Bini L, Duro G. Alteration of proteomic profiles in PBMC isolated from patients with Fabry disease: preliminary findings. *Mol Biosyst*. 2013 Jun;9(6):1162-8. doi:10.1039/c3mb25402j.

Gimigliano A*, Mannini L*, **Bianchi L**, Puglia M, Deardorff MA, Menga S, Krantz ID, Musio A, Bini L. Proteomic Profile Identifies Dysregulated Pathways in Cornelia de Lange Syndrome Cells with Distinct Mutations in SMC1A and SMC3 Genes. *J Proteome Res*. 2012 Dec 7;11(12):6111-23. doi:10.1021/pr300760p.

Gamberi T, Puglia M, **Bianchi L**, Gimigliano A, Landi C, Magherini F, Guidi F, Ranaldi F, Armini A, Cipriano M, Gagliardi A, Modesti A, Bini L. Evaluation of SCO1 deletion on *Saccharomyces cerevisiae* metabolism through a proteomic approach. *Proteomics*. 2012 Jun;12(11):1767-80. doi:10.1002/pmic.201100285.

Lescuyer P, **Bianchi L**, Hochstrasser D, Bini L, Sanchez JC. Translational proteomics. *J Proteomics*. 2012 Aug 3;75(15):4571-2. doi:10.1016/j.jprot.2012.06.018.

Bianchi L, Gagliardi A, Gioia R, Besio R, Tani C, Landi C, Cipriano M, Gimigliano A, Rossi A, Marini JC, Forlino A, Bini L. Differential response to intracellular stress in the skin from osteogenesis imperfecta *Brtl* mice with lethal and non-lethal phenotype: a proteomic approach. *J Proteomics*. 2012 Aug 3;75(15):4717-33. doi:10.1016/j.jprot.2012.01.038

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Nicolardi V, Cai G, Parrotta L, Puglia M, **Bianchi L**, Bini L, Gaggi C. 2011. The adaptive response of lichens to mercury exposure involves changes in the photosynthetic machinery. *Environ Pollut* 160:1-10. doi:10.1016/j.envpol.2011.09.015.

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D'Anna C, Cascio C, Cigna D, Galizzi G, Deidda I, **Bianchi L**, Russo D, Passantino R, Bini L, Guarnieri P. 2011. A retinal proteomics based study identifies alpha-A-crystallin as a sex steroid regulated protein. *Proteomics* 11:986-990. doi:10.1002/pmic.201000561.

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() Autori che hanno contribuito alla realizzazione del lavoro in ugual misura.*

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