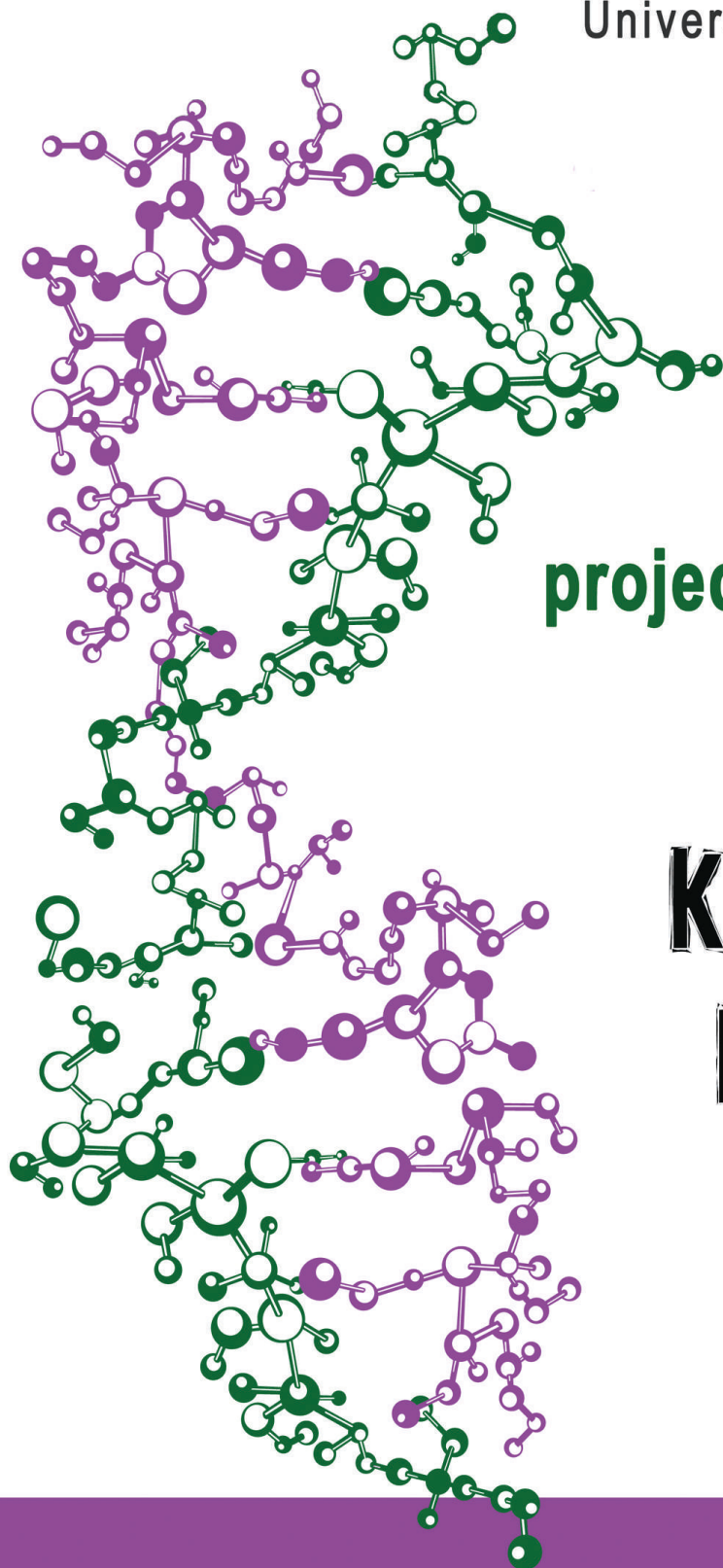


Department of Biotechnology and Biosciences

University of Milano-Bicocca

November 21th, 2018



**the BtBs
project of excellence**

**KICK OFF
MEETING**



Department of Biotechnology and Biosciences

University of Milano-Bicocca

Kick off meeting

The BtBs project of excellence

November 21th, 2018, room "Luisella Sironi" (U4-08)

Piazza della Scienza 4, 20126 Milan

<http://www.btbs.unimib.it/>

The **project of excellence** of the **Department of Biotechnology and Biosciences (BtBs)** focuses on the study of the mechanisms underlying chronic multifactorial diseases (tumors and neurodegenerative diseases) and the aging process that shares many of the intrinsic factors linked to genetics and physiology of individuals, and extrinsic, such as nutrition, lifestyle and environment. These issues are dealt with in terms of pre-clinical research, teaching and interaction with society and relevant stakeholders. **BtBs** intends to propose itself as a reference center for the development of a new systemic vision of the triggering and chronic mechanisms of diseases and senescence in order to design new and more effective prevention and diagnosis strategies.

BtBs intends to propose itself as a reference center for the development of a new systemic vision of the triggering mechanisms and establishment of chronic diseases and senescence in order to design new and more effective prevention and diagnosis strategies. To achieve this goal, the Department will implement new multidisciplinary laboratories, and will acquire new researchers capable of providing innovative skills to achieve the pre-established results. Active exchange with other research centers, interaction with the territory and collaboration with the institutions will guarantee the transfer of knowledge and the exploitation of results with concrete implications on the quality of life.

Today the Project presents the beginning of its activities and focuses - with the contribution of renowned international experts – on some of its key themes.

<i>Chair of the Department</i>	Prof. Marina Lotti
<i>The scientific Committee</i>	Prof. Marco Vanoni
	Prof. Maria Pia Longhese
	Prof. Massimo Labra
	Prof. Davide Prosperi

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Program

- 08:30 Registration
- 09:00 **Marina Lotti & Luca De Gioia** welcome and opening
- 09:30 **Marco Vanoni**,
"The BtBs Department of Excellence Project: aims, strategy and opportunities"
- 10:00 **Hans V. Westerhoff**, SysBA (Systems Biology Amsterdam), Molecular Cell Physiology, VU University Amsterdam
"Eppur si muove: molecular biology does throw dice, with multifactorial disease and ageing ensuing"
- 10:50 Coffee break
- 11:20 **Matteo Moretti**, Cell and Tissue Engineering Laboratory, IRCCS Istituto Ortopedico Galeazzi, via Galeazzi, 4, 20161 Milan, Italy
"Advancing in vitro culture systems by engineering 3D human vascularized models"
- 11:40 **My excellent project:** presentation of PhD and Post Doc projects funded by the department project.
– **Erika Casari**, *"Synthetic cytotoxicity to target DNA repair in cancer"*
– **Carlotta Ciaramelli**, *"NMR-driven dissection of the neuroprotective effects of natural extracts from edible sources and their main constituents: implications for the prevention of neurodegenerative diseases"*
– **Gloria Campioni**, *"Generation of patient-specific laboratory and computational models for breast cancer precision medicine"*
– **Miriam Pagin**, *"Modelling human brain developmental pathology in a dish by differentiation of iPS cells to neural cells and brain organoids"*
- 12:30 Competitions: **Find the title** and **Art and Science**

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Program

- 13:00 Lunch and poster session
- 15:00 Education and training commission, **Paola Branduardi, Marina Lotti, Maurizio Casiraghi and Laura Cipolla**
"The educational activities of the project"
- 15:30 **Poster session Awards**
- 15:40 **Adriana Albini**, Dipartimento di Medicina e Chirurgia, Università degli Studi di Milano-Bicocca
"Pharmacological prevention of complex diseases and the role of food and diet-derived compounds"
- 16:30 **Bruce Beutler, Nobel prize for Medicine**, Director of the Center for the Genetics of Host Defense and holder of the "Raymond and Ellen Willie Distinguished Chair in Cancer Research", University of Texas Southwestern Medical Center, USA
"Using forward genetics to study immunity in mice"
- 17:30 Amazing aperitif...with surprise

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Poster session

P01 - *Caenorhabditis elegans* as a model to study neurodegenerative diseases, aging and nanomaterials toxicity

Amigoni L., Sciandrone B., Palmioli A., Airoidi C., Labra M., Colombo M., Prosperi. D., Tortora P. and Regonesi M. E.

P02 - Convergent technologies in metagenomics: enhancing the available analytical tools

Giulia Agostinetto , Anna Sandionigi, Dario Pescini, Maurizio Casiraghi

P03 - Phage display for brain targeting peptide selection

Josu Andrieu, Laura Russo, Francesco Nicotra

P04 - Mitochondrial proteins in human peripheral blood mononuclear cells (PBMC) as biomarkers of Parkinson's disease

Federica Aprea, Gessica Sala, Paola Paci, Giovanni Mennuni, Chiara Riva, Laura Brighina, Francesca Martorana, Lilia Alberghina, Anna Maria Colangelo, Carlo Ferrarese

P05 - The role of innate immune receptors in *Candida albicans* skin infections

Artuso I., Borriello F., Stamerra G., Orlandi I., Vai M., Zanoni I., Granucci F.

P06 - β 3-adrenergic receptor subtype and Na^+/K^+ -ATPase relationship in catecholamine-induced myocardial remodeling

Beatrice Badone, Gizem Kayki Mutlu, Carlotta Ronchi, Marcella Rocchetti and Antonio Zaza

P07 - The potential role of cadmium on human superoxide dismutase 1

Federica Bovio, Matilde Forcella, Chiara Urani and Paola Fusi

P08 - Drinking water microbiota: changes across drinking water treatments and drinking water distribution

Bruno A., Sandionigi A., Magnani D., Orizio F., Panio A., Casiraghi M.

P09 - Fine Feed For Fish and new perspectives in aquaculture: integrating water microbiome analysis and environmental sustainability in the assessment of fish health

Bruno A., Magoni C., Panio A., Orizio F., Magnani D., Labra M.

P10 - Action potential prolongation, β -adrenergic stimulation and angiotensin II as cofactors in sarcoplasmic reticulum instability

Carlotta Ronchi, Beatrice Badone, Joyce Bernardi and Antonio Zaza

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P11 - NMR-based identification of anti-Alzheimer's compounds in coffee extracts

C. Ciaramelli, A. Palmioli, A. De Luigi, L. Colombo, G. Sala, C. Riva, C. P. Zoia, M. Salmona, C. Airoldi

P12 - Linking Sox2 activity to its downstream effectors in glioma maintenance, towards the definition of therapeutic targets

Cristiana Barone, Laura Rigoldi, Rebecca Favaro, Miriam Pagin, Sergio Ottolenghi, Maria Foti, Paolo Malatesta and Silvia Nicolis

P13 - Probiotic-derived products as potential new antimicrobials and their possible effects on human health

A. De Gianj, F. Bovio, P. Fusi, P. Di Gennaro

P14 - Modulation of lipid composition in the oleaginous yeast *Lipomyces starkeyi*

Raffaella Desirè Di Lorenzo, Francesca Martani, Paola Branduardi

P15 - Computational drug design: the case of potential new analogues of palmitoylethanolamide (PEA) for neuroprotective and anti-inflammatory treatment of Alzheimer disease

Federica Arrigoni, Alessia D'Aloia, Jasmine Marciali, Michela Ceriani, Renata Tisi, Laura Cipolla, Barbara Costa, Giuseppe Zampella

P16 - Food traceability: what's on your plate?

Jessica Frigerio, Giulia Agostinetto, Tommaso Gorini, Valerio Mezzasalma, Fabrizio De Mattia, Massimo Labra

P17 - Anti-tumor compounds from NUS: the bioactivity of cowpea (*Vigna unguiculata* L. Walp.)

Lorenzo Guzzetti, Davide Panzeri, Matilde Emma Forcella, Nicola Tommasi, Paola Coccetti, Andrea Galimberti, Maria Elena Regonesi, Paola Fusi, Massimo Labra

P18 - Computational investigation on MRX complex, study of Rad50-A78T variant through molecular dynamics techniques

Jacopo Vertemara, Matteo Bassani, Renata Tisi, Luca De Gioia, Maria Pia Longhese, Giuseppe Zampella

P19 - Long-term graft tolerance induction in NFATc pathway inhibition in innate immune cells

Gornati L., Cigni C., Mingozzi F., Marongiu L., Rotem R., Colombo M., Prosperi D., Zanoni I., Granucci F.

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P20 - Characterization of the role of the Sox2 transcription factor in the development of the hippocampus and the visual system by conditional knock-outs in mice

Linda Serra, Alessia Motta, Lorenzo Gesuita, Chiara Alberti, Luisa Sanchez Arrones, Francesca Inverardi, Benedetta Foglio, Carolina Frassoni, Paola Bovolenta, Silvia Nicolis, Sara Mercurio

P21 - New insight in the modulation of TLR4: agonistic and antagonistic effect of small Molecules

Andrea Luraghi, Fabio Facchini, Florent Cochet, Michela Negri, Jessica Negrini, Alessio Romerio, Francesco Peri

P22 - New 3D printable Extracellular Matrix Mimetics as new bioink for cell microenvironment studies

S. Magli, J. Andrieu, S. Bertini, C. Cosentino, I. Lampedecchia, L. Rabbachin, G. Risi, S. Sampaolesi, G. Stucchi, F. Nicotra, L. Russo

P23 - How do proteins interact with ice?

Marco Mangiagalli, Aleksei Kaleda, Guy Sarusi, Tova Pinsky, Marco Nardini, Ido Braslavsky and Marina Lotti

P24 - Metabolic conversion of IP₃ to IP₄ is required to operate Ca²⁺ entry and NFAT activation in dendritic cells in response to LPS

Laura Marongiu, Francesca Mingozzi, Marco Di Gioia, Laura Sironi, Massimiliano Garrè, Dario Parazzoli, Takashi Morii, Clara Cigni, Roberta Marzi, Rany Rotem, Miriam Colombo, Davide Prosperi, Ivan Zanoni, Francesca Granucci.

P25 - Improving the stress tolerance of the oleaginous yeast *Lipomyces starkeyi* for biotechnological applications

Francesca Martani, Letizia Maestroni, Paola Branduardi, Danilo Porro

P26 - Chasing sustainability with a molecular net: a tale of Bees, plants and management

Nicola Tommasi, Paolo Biella, Lorenzo Guzzetti, Andrea Tapparo, Davide Magnani, Massimo Labra, Andrea Galimberti, Maurizio Casiraghi

P27 - Vegetable and waste cooking oils as biomasses for biorefineries

Stefano Bertacchi, Nadia Maria Berterame, Diletta Ami, Paola Branduardi

P28 - Synthetic production of the unnatural polymers Poly D-and Poly L-lactic acid by engineered *Saccharomyces cerevisiae* cells

Nadia Maria Berterame, Stefano Bertacchi, Danilo Porro, Paola Branduardi

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P29 - A platform-based model for Induced Pluripotent Stem Cell-Derived Cardiomyocytes to study cardiac senescence

Alessandra Maria Lodrini, Edoardo Lazzarini, Claudia Altomare, Sara Bolis, Lucio Barile & Marcella Rocchetti

P30 - Membrane stress caused by short chain fatty acids in *Saccharomyces cerevisiae*

Luís Ferraz, Nadia Maria Berterame, Paola Branduardi

P31 - Identification and functional characterization of Sox2-target genes involved in the self-renewal and differentiation of neural stem cells cultured from the mouse brain

Miriam Pagin, Simone Giubolini, Rebecca Favaro, Gaia Sambruni, Cristiana Barone, Sara Mercurio, Chia-Lin Wei, Giulio Pavesi, Sergio Ottolenghi, Silvia K. Nicolis

P32 - Combining NMR and UPLC-HR-MS to identify natural bioactive compounds: the example of *Peucedanum ostruthium* anti-A β activity

Alessandro Palmioli, Sara Bertuzzi, Ada De Luigi, Laura Colombo, Barbara La Ferla, Mario Salmona, Ivano De Noni, Cristina Airoidi

P33 - K-ras affects metabolism and sensitivity to the hexosamine pathway inhibition in pancreatic cancer cells

Palorini Roberta, Bergamaschi Laura, Ricciardiello Francesca and Chiaradonna Ferdinando

P34 - Enhancing organic acid tolerance in the yeasts *Z. (para)bailii* and *K. marxianus*

Pooja Jayaprakash, Francesca Martani, Paola Branduardi

P35 - A novel purification procedure of the vault nanoparticle and the characterization of its endocytic uptake

M. Pozzi, P. Tortora, E. Galbiati

P36 - Metal ion doped iron oxide nanoparticle-based theranostic for magnetic resonance imaging and hyperthermia therapy of cancer

Pradip Das, Laura Calderan and Davide Proserpi

P37 - Chitosan-PGA based Nanoparticles for multimodal diagnosis in type I diabetes study

Linda Rabbachin, Lorenzo Rossi, Laura Russo, Eszter Prépost, Krisztina Kerekes, Zoltan Körhegyi, Magdolna Bodnar, Francesco Nicotra

P38 - New methods for liposomes Glycofunctionalization and Glycan Detection / Quantification

Rana Edwards; Beatrice Formicola; Roberta Dal Magro; Francesca Re; Anna Degrassi; Laura Russo; Francesco Nicotra

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P39 - Analysis of metabolic rewiring induced by genetic and nutritional perturbations: a top-down approach

R. Milanesi, L. Lombardi, F. Tripodi, P. Coccetti

P40 - FR054, a novel Hexosamine Biosynthetic Pathway inhibitor, induces cell death in pancreatic cancer models

Francesca Ricciardiello, Roberta Palorini, Marco Giampà, Francesca Tinelli, Antonio Castagna, Barbara La Ferla, Ferdinando Chiaradonna

P41 - An integrative computational/experimental approach to unravel new functions of Neurofibromin 1

Fabio Rizza, Raffaele Iannuzzi, Elena Sacco, Renata Tisi

P42 - Bioprintable elastin based hybrid hydrogels for 3D cell model and tissue engineering applications

S. Sampaolesi, S. Facchetti, I. Lampedecchia, S. Magli, G. Risi, C. Cosentino, S. Bertini, F. Nicotra, L. Russo

P43 - Nutrition and longevity: Resveratrol supplementation at the diauxic shift increases oxidative stress and reduces yeast Chronological LifeSpan

Giulia Stamerra, Ivan Orlandi and Marina Vai

P44 - Relationship between osteoarthritis and hyperglycemia and changes on cartilage tissue associated with diabetes

S. Stucchi, A. D'Aloia, L. Cipolla, B. Costa and M. Ceriani

P45 - Three-dimensional culture methods for the study of triple negative breast cancer

Valentina Pasquale, Elena Sacco, Marco Vanoni

P46 - NATURHA: Natural Actives and Technologies Under Research for Healthy Aging

Z. Zeaiter, M. Labra, M.E. Regonesi, P. Di Gennaro

P47 - Genome-based analysis of *Rhodococcus* strains to identify genes and biodegradative functions for soil quality evaluation

J. Zampolli, A. Di Canito, G. Genini, P. Di Gennaro

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