



What is BMBS?

Biomedicine and Molecular Biosciences

BMBS covers all areas of medicine as practiced in Europe and basic, preclinical and clinical medical research developed to materialise the “bench to bedside” concept.

In Detail

The following examples illustrate actual research within this Domain. The scope of the Domain is not restricted to these activities.

- **Molecular biosciences** covers all areas of genomics, proteomics and metabolomics. They are not limited to research in humans, but may also concern research in plants, viruses, micro-organisms, and animals. Basic and applied biomolecular research is addressed, issues connected with forestry and agriculture included.

BMBS research also includes issues of genome, proteins (structures and functions), lipids, study of the central nervous system and neuronal connections, cognitive neuroscience, immune system, cell migration, cell dysfunctions (cancer), cellular mechanisms of diseases, contagious diseases (animals to humans transmissible diseases included), tropical diseases.

- **Biomedicine and specific technologies:** some of the related BMBS research areas include advanced imaging and treatment techniques (basic research, diagnosis and treatment procedures), medical devices and new medicines, advanced medical research on biomaterials.
- **Micro and nanomedicine** (including nanotechnologies), biomedicine/molecular bioscience and pharmacology in extreme conditions such as climate change, and outer space conditions.
- **Interdisciplinary issues** includes research in fields such as bioinformatics, biomedical engineering, medical physics and chemistry, mathematical models in medicine. Therefore, new ideas and initiatives are welcome as well as those with high interdisciplinary elements, a high degree of innovation and close links and overlaps with other Domains

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Running COST Actions within the BMBS Domain:

- **BM0904** HDL - From Biological Understanding to Clinical Exploitation
- **BM0905** European Network for the Study of Gilles de la Tourette Syndrome
- **BM0907** European Network for Transnational Immunology Research and Education (ENTIRE): From Immunomonitoring to Personalized Immunotherapy
- **BM1001** ECMNet: Brain Extracellular Matrix in Health and Disease
- **BM1002** NANONET - Nanomechanics of intermediate filament networks
- **BM1003** Microbial cell surface determinants of virulence as targets for new therapeutics in Cystic Fibrosis
- **BM1004** ESSEA – Enhancing the Scientific Study of Early Autism
- **BM1005** ENOG – European Network on Gasotransmitters: from basic science to therapeutic applications
- **BM1006** Next Generation Sequencing Data Analysis Network
- **BM1007** Mast Cells and Basophils – Targets for Innovative Therapies
- **BM1101** European Network for the Study of Dystonia Syndromes
- **BM1102** Ciliates as Model Systems to Study Genome Evolution, Mechanisms of non-Mendelian
- **BM1103** Arterial spin labelling Initiative in Dementia (AID)
- **BM1104** Mass Spectrometry Imaging: New Tools for Healthcare Research inheritance, and their roles in environmental adaptation
- **BM1105** GnRH deficiency: Elucidation of the neuroendocrine control of human reproduction
- **BM1106** The Genes in Irritable Bowel Syndrome Research Network Europe (GENIEUR)
- **BM1201** Developmental Origins of Chronic Lung Disease
- **BM1202** European Network on Microvesicles and Exosomes in Health and Disease (ME-HAD)
- **BM1203** EU-ROS
- **BM1204** An integrated European platform for pancreas cancer research: from basic science to clinical and public health interventions for a rare disease
- **BM1205** European Network for Skin Cancer Detection using Laser Imaging
- **BM1206** Cooperation Studies on Inherited Susceptibility to Colorectal Cancer
- **BM1207** Networking towards clinical application of antisense-mediated exon skipping
- **BM1208** European Network for Human Congenital Imprinting Disorders
- **BM1209** Regenerative Sphincter Therapy (ReST)
- **BM1301** Aldosterone and mineralocorticoid receptor: Pathophysiology, clinical implication and therapeutic innovations (ADMIRE)
- **BM1302** Joining Forces in Corneal Regeneration Research
- **BM1303** A systematic elucidation of differences of sex development (DSDnet)
- **BM1304** Applications of MR imaging and spectroscopy techniques in neuromuscular disease: collaboration on outcome measures and pattern recognition for diagnostics and therapy development
- **BM1305** Action to Focus and Accelerate Cell-based Tolerance-inducing Therapies (A FACTT)
- **BM1306** Better Understanding the Heterogeneity of Tinnitus to Improve and Develop New Treatments (TINNET)
- **BM1307** European network to integrate research on intracellular proteolysis pathways in health and disease (PROTEOSTASIS)
- **BM1308** Sharing Advances on Large Animal Models (SALAAM)
- **BM1309** European network for innovative uses of EMFs in biomedical applications (EMF-MED)

- **TD1002** European network on applications of Atomic Force Microscopy to NanoMedicine and Life Sciences acronym: AFM4NanoMed&Bio
- **TD1006** European Network on Robotics for NeuroRehabilitation
- **TD1101** A Collaborative European Network on Rabbit Genome Biology (RGB-NET)
- **TD1104** European network for development of electroporation-based technologies and treatments Acronym – EP4Bio2Med
- **TD1205** European Network for Skin Cancer Detection using Laser Imaging

Success Stories

COST Action B26 has built a network of specialists to prepare guidelines for diagnosing and treating sleep apnoea. They have also defined recommendations for driving licences and road safety. This has led to the development of the European Union's Directorate of Transport agreement to address sleep apnoea in the regulations for Driving Licences Annex III.

COST Action BM0803 engaged in a collaborative exercise aiming to map European populations sharing similar genes that set the stage for the introduction of new standards in molecular biology and immunogenetics.

The Action was also instrumental in revealing how diverse populations from different European regions are in terms of HLA. The identified, genetically overlapping, regional groups confirm there is no so-called Caucasian 'race'. They also reveal that Europe was populated during migrations expanding in a Southeast-Northwest direction, similar to the ones in the Neolithic age.

How to join a COST Action

Scientists interested in joining an ongoing COST Action should contact the Action Chair and the COST National Coordinator in their member country: www.cost.eu/cnc.

To propose a new Action, visit: www.cost.eu/opencall. COST assesses new proposals two times a year.



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