

COST Action BM1005

Gasotransmitters: from basic science to therapeutic applications

2011 | 2015

Objectives

- Formation of a European network that collates scattered knowledge, resources and expertise on gaseous mediators
- Encourage the dissemination of innovation
- Boost collaborations and increase the European competitiveness in the field of NO, CO and H₂S research
- Accelerate translational research in inflammation, cardiovascular disease and CNS disorders

Main Achievements

- **Scientific outputs obtained due to networking:**
 - Identification of novel pathways implicated in gasotransmitter signaling
 - Importance of cross-talk between gasotransmitters
 - New gasotransmitter donor/inhibitor molecules
 - 3 common publications in high impact peer-reviewed journals in the first year
- **Capacity building due to networking:**
 - Interdisciplinary approach to address critical and hard –to-solve scientific questions
 - More competitive applications for national/international funding
 - Accessibility to reagents, methodologies and expertise
 - Reduction of cost for expensive research projects (transgenic mice) through cost-sharing

www.cost.eu/bmbs**Biomedicine and Molecular Biosciences (BMBS)**

Participating countries

AT, BE, DE, DK, EL, ES, FR, HU, IT, NL, NO, PL, PT, RS, SK, TR, UK

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Working Group activities

Working Group 1

- Cross-talk between NO and H₂S
- Regulation of NO production by phosphorylation
- Role of soluble guanylyl cyclase in the pharmacological effects of CO-releasing molecules
- Non-NO endogenous activators of cGMP signaling

Working Group 2

- H₂S in inflammation
- Gasotransmitters in heart disease
- CO and heme oxygenases in physiology and pathology

Working Group 3

- Design, synthesis and pharmacological characterization of novel H₂S inhibitors.
- Design, synthesis and pharmacological characterization of selective CSE and CBS inhibitors
- Design, synthesis and pharmacological characterization of novel CO-releasing molecules

Working Group 4

- Gasotransmitter therapies in pulmonary hypertension
- NOX inhibitors in cerebrovascular disease
- Importance of basal vs stimulated sGC activity in physiology and disease
- sGC activators in COPD

Industry participation

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