

COST Action no. BM1002

NANONET - Nanomechanics of intermediate filament networks

2010 | 2014

Objectives

- Main objective: to establish a scientific platform to take full advantage of the emerging knowledge on intermediate filaments and novel developments in cell biology, molecular biology, (bio)chemistry, engineering, mathematics and physics in appropriate commercial and medical applications.

Main Achievements

- **Scientific outputs obtained due to networking:**
- NANONET participated in the European Conference on Intermediate Filaments in Health and Disease. Poster abstracts are published on the NANONET website.
- 4 early stage researchers have visited labs within the NANONET network with an STSM. The scientific results of these exchanges will be further examined and published in due time. The research topics were:
 - Passive microgeology has been used to investigate the properties of the intermediate filament network.
 - mRNAs of LMNA, FACE1, PPARG and related genes have been studied in lipodistrophy and senescent cells.
 - Intranuclear localization of phospholipids relative to intermediate filament network has been studied.
 - The Role of LAP2alpha in the Assembly of Lamin A has been investigated.
- **Capacity building due to networking:**
- 4 early stage researchers have visited labs within NANONET with an STSM.
- Belgium, Italy, Czech Republic and Poland joined NANONET.
- One combined IF / MC meeting was organized, which was attended by about 100+ researchers. 15 early stage researchers and 2 external experts were funded by NANONET.

www.cost.eu/bmbs



Biomedicine and Molecular Biosciences (BMBS)

Participating countries

AT, BE, CZ, DE, DK, EL, ES, FI, FR, IE, IL, IT, NL, PL, SI, SK, SE, UK

Contact details

Chair of the Action

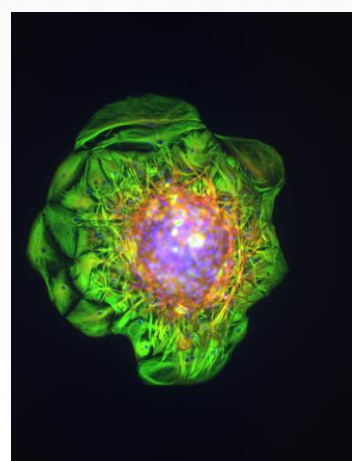
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Neural stem cells isolated from post-mortem human brains expressing intermediate filaments



COST is supported by the EU RTD Framework Programme



ESF provides the COST Office through a European Commission contract



Working Group activities

Mechanotransduction and cell signalling

- Meeting - Role of intermediate filaments in mechanotransduction, Paris, France 10 October 2011; 17 participants and 6 researchers were reimbursed by NANONET.

Nanomechanical properties and impact on cell mechanics

- Meeting – Mechanical properties of intermediate filaments, Heidelberg, Germany, 18 November 2011; 30 participants and 8 researchers were reimbursed by NANONET.
- Meeting – Mechanical properties of intermediate filaments, Göttingen, Germany, 20 February 2012; 20 participants and 4 researchers were reimbursed by NANONET

Translation to bio-inspired materials

- No meeting yet. Planned for 2012

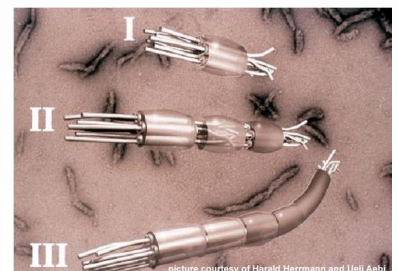
Intermediate filaments in health and disease

- Meeting - The role of notch signaling, intermediate filaments and cell vesicle trafficking in cell differentiation, and beyond. Säröhus, Sweden, 7-8 February 2011; 21 participants and 8 researchers were reimbursed by NANONET.
- Meeting - Cross-striated Muscle in Health and Disease, Bonn, Germany, 18-20 May 2011; 112 participants and 7 researchers were reimbursed by NANONET.

All workgroups participated in the Intermediate Filament meeting organized in Mykonos, Greece on June 16th-19th 2012. More than 100 researchers from Europe, United States and Singapore participated in this meeting.

Industry participation

No industrial partner



Intermediate filament building blocks.



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