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Biosensor nanoarrays for environmental monitoring

Fact Sheet

Project Information

BIOMONAR

Grant agreement ID: 244405

[Project website](#) 

Project closed

Start date

1 April 2010

End date

31 March 2014

Funded under

Specific Programme "Cooperation": Food, Agriculture and Biotechnology

Total cost

€ 3 912 456,00

EU contribution

€ 2 997 486,00

Coordinated by

SYDDANSK UNIVERSITET



Denmark

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Objective

BIOMONAR develops multiplexed nanoarray biosensors for environmental targets, i.e. pollutants and pathogens. The innovative approach engineers three sensor platforms (surface, liposomal, living cell) which exploit a panel of periplasmic binding proteins (PBPs) as the common selective element. The nanoarrays are integrated into a microfluidics system for in-situ monitoring. The strategy allows for selective and sensitive detection of target compounds in complex environmental mixtures. The sensor platforms probe different aspects in the 'exposure to effect' chain of processes: each responds to a certain proportion of the total target concentration and has a characteristic dynamic window. The sensor signals are quantitatively interpreted and represented in terms of the spectra of reactivities and fluxes of the target compounds. This level of sophistication, coupled with the common PBP selective component, allows a coherent elucidation of the link between dynamic target speciation and predicted ecotoxicological impact. The optimisation and dedication of the sensors for environmental monitoring inherently involves physicochemical characterisation of the various bio/nonbio and bio/bio interfacial processes at nanoscale. The ensuing knowledge on the interaction of nanostructured surfaces with biological systems facilitates design of sensors for new targets, thus providing technical opportunities for the biosensor industry.

Fields of science (EuroSciVoc)

[natural sciences](#) > [physical sciences](#) > [classical mechanics](#) > [fluid mechanics](#) > **[microfluidics](#)**

[engineering and technology](#) > [electrical engineering, electronic engineering, information engineering](#) > [electronic engineering](#) > [sensors](#) > **[biosensors](#)**

[natural sciences](#) > [biological sciences](#) > [biochemistry](#) > [biomolecules](#) > **[proteins](#)**



Programme(s)

[FP7-KBBE - Specific Programme "Cooperation": Food, Agriculture and Biotechnology](#)

Topic(s)

[KBBE-2009-3-6-03 - Nanobiotechnology: bio-interfaces for environmental applications](#)

Call for proposal

FP7-KBBE-2009-3

[See other projects for this call](#)

Funding Scheme

[CP-FP - Small or medium-scale focused research project](#)

Coordinator



SYDDANSK UNIVERSITET

EU contribution

€ 508 558,00

Total cost

No data

Address

CAMPUSVEJ 55

5230 Odense M

 **Denmark** 

Region

Danmark > Syddanmark > Fyn

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Participants (9)



UNIVERSITE DE LAUSANNE

 **Switzerland**

EU contribution

€ 471 561,00

Address

QUARTIER UNIL CENTRE - BATIMENT UNICENTRE
1015 LAUSANNE 

Region

Schweiz/Suisse/Svizzera > Région lémanique > Vaud

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



JRC -JOINT RESEARCH CENTRE- EUROPEAN COMMISSION

 Belgium

EU contribution

€ 278 556,00

Address

Rue de la Loi 200
1049 Bruxelles / Brussel 

Region

Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest > Région de Bruxelles-Capitale/ Brussels Hoofdstedelijk Gewest > Arr. de Bruxelles-Capitale/Arr. Brussel-Hoofdstad

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



WAGENINGEN UNIVERSITY

 Netherlands

EU contribution

€ 462 954,00

Address

DROEVENDAALSESTEEG 4

6708 PB Wageningen 

Region

Oost-Nederland > Gelderland > Veluwe

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



THE HEBREW UNIVERSITY OF JERUSALEM

 Israel

EU contribution

€ 343 759,00

Address

EDMOND J SAFRA CAMPUS GIVAT RAM

91904 Jerusalem 

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS

 France

EU contribution

€ 393 078,00

Address

RUE MICHEL ANGE 3

75794 Paris 

Region

Ile-de-France > Ile-de-France > Hauts-de-Seine

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



CORNELL UNIVERSITY

 United States

EU contribution

€ 156 779,00

Address

PINE TREE ROAD 373

14850 Ithaca Ny 

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



LIONIX BV

 Netherlands

EU contribution

€ 235 491,00

Address

HENGELLOSESTRAAT 500

7521 AN ENSCHEDE 

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



MICRODISH BV

 Netherlands

EU contribution

€ 106 750,00

Address

SCHIPHOLWEG 275

1171 PK BADHOEVEDORP 

Region

West-Nederland > Noord-Holland > Groot-Amsterdam

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



METROHM-APPLIKON

 Netherlands

EU contribution

€ 40 000,00

Address

De Brauwweg 13

3125AE Schiedam 

Region

West-Nederland > Zuid-Holland > Groot-Rijnmond

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data

Last update: 16 July 2019

Permalink: <https://cordis.europa.eu/project/id/244405>

European Union, 2025