Deep-sea fish vision pushing limits of the vertebrate eye

Fact Sheet

Project Information

SensingDEEP

Grant agreement ID: 101122542

DOI
10.3030/101122542

EC signature date
3 April 2024

Start date
1 July 2024

End date
30 June 2029

Funded under
European Research Council (ERC)

Total cost
€ 1 996 250,00

EU contribution
€ 1 996 250,00

Investment in EU policy priorities

Digital agenda	○	Clean air	○
Artificial Intelligence	○	Climate action	●
Biodiversity	◐		

Coordinated by
UNIVERZITA KARLOVA
Czechia

Project description

Exploring whether deep-sea fish can see colours

Deep-sea fish possess remarkable adaptations, including unique sensory systems. Some have developed exceptional vision to perceive colours in the darkness of the deep waters. Unlike other vertebrates, many lack cones, rendering them colour-blind. However, their novel visual system, based on multiple rod opsins, may enable them

to perceive colours. In this context, the ERC-funded SensingDEEP project explores whether deep-sea fish are capable of colour vision. By studying single rod/cone cells in species with multiple rhodopsin visual systems, the project aims to determine their ability to differentiate between colours or perceive the entire light spectrum. SensingDEEP will use genomic tools to explore the boundaries of vertebrate vision through deep-sea fish with extraordinary adaptations.

Fields of science (EuroSciVoc)

medical and health sciences > basic medicine > **anatomy and morphology**

engineering and technology > materials engineering > **colors**

social sciences > sociology > social issues > **social inequalities**

medical and health sciences > clinical medicine > **ophthalmology**

Keywords

vision | deep sea | fish | adaptation | rhodopsin | molecular evolution | gene duplication | rod | cone | retina | extreme environment | deep ocean

Programme(s)

HORIZON.1.1 - European Research Council (ERC) MAIN PROGRAMME

Topic(s)

ERC-2023-COG - ERC CONSOLIDATOR GRANTS

Call for proposal

ERC-2023-COG

See other projects for this call

Funding Scheme

HORIZON-ERC - HORIZON ERC Grants

Host institution

UNIVERZITA KARLOVA

Net EU contribution

€ 1 996 250,00

Total cost

€ 1 996 250,00

Address

OVOCNY TRH 560/5
116 36 Praha 1
Czechia

Region

Česko > Praha > Hlavní město Praha

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Beneficiaries (1)

UNIVERZITA KARLOVA

Czechia

Net EU contribution

€ 1 996 250,00

Address

OVOCNY TRH 560/5
116 36 Praha 1

Region

Česko > Praha > Hlavní město Praha

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

€ 1 996 250,00

Last update: 6 September 2024

Permalink: https://cordis.europa.eu/project/id/101122542