Neuroanatomical substrates of social deficit in a mouse model of 22q11 deletion syndrome

Fact Sheet

Project Information

SOCIALBRAINCIRCUITS

Grant agreement ID: 796244

Project website

DOI
10.3030/796244

Project closed

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28 March 2018

Start date
1 September 2018

End date
31 August 2020

Funded under
EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost
€ 168 277,20

EU contribution
€ 168 277,20

Coordinated by
FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA
Italy

Objective

Also known as velocardiofacial or DiGeorge syndrome, 22q11.2 deletion syndrome (22q11.2DS) is currently considered as the highest genetic-based vulnerability factor for neuropsychiatric disorders, such as autism spectrum disorder, attention deficit hyperactivity disorder, anxiety disorders and schizophrenia. Noteworthy, this microdeletion leads to a wide range of peripheral and central symptoms, including severe deficits in face memory and social cognition, which remain incurable to date.

Thus, the present proposal aims at delineating the neuroanatomical substrates of social behavior in order to identify new therapeutic avenues for social deficit in velocardiofacial syndrome and its associated neuropsychiatric disorders. To this purpose, we will use a very solid murine model of 22q11.2DS the LgDel+/- mouse, which similarly displays deficits in social interaction, to investigate the respective interventions of the oxytocin (OT) and the dopamine (DA) system in the implementation of normal versus altered social behavior, at critical time periods (first post-natal days and adolescence). Specifically, preliminary findings from the host laboratory suggest that early alterations of the OT system, by preventing proper GABA switch in the medial prefrontal cortex (mPFC), leads to abnormal mPFC regulation of DA function in the nucleus accumbens and/or amygdala, and subsequent social deficits at adulthood in LgDel+/- mice. We will address this hypothesis by using a multidisciplinary strategy encompassing genetics, molecular biology, biochemistry, tracing methods, cell culture, as well as viral and behavioral approaches.
The originality of the present project, which resides in our will to identify the developmental trajectories of social behavior, together with a reciprocal transfer of theoretical, practical and transferrable skills between the host laboratory and me, will allow me to develop independent research projects and a competitive research career.

Fields of science (EuroSciVoc)

natural sciences > biological sciences > **biochemistry**

natural sciences > biological sciences > **genetics**

medical and health sciences > clinical medicine > psychiatry > **schizophrenia**

medical and health sciences > clinical medicine > psychiatry > **anxiety disorders**

natural sciences > biological sciences > **molecular biology**

Programme(s)

H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions MAIN PROGRAMME

H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

Topic(s)

MSCA-IF-2017 - Individual Fellowships

Call for proposal

H2020-MSCA-IF-2017

See other projects for this call

Funding Scheme

MSCA-IF-EF-ST - Standard EF

Coordinator

FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA

Net EU contribution

€ 168 277,20

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Region

Nord-Ovest > Liguria > Genova

Activity type

Research Organisations

Links

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

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