### Invasiveness and the microbiome: gut microbial community dynamics in an invasive-native vertebrate system

**Fact Sheet**

<table>
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<tr>
<th>Project Information</th>
<th>Funded under</th>
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<tr>
<td><strong>InvasOME</strong></td>
<td>Marie Skłodowska-Curie Actions (MSCA)</td>
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<tr>
<td>Grant agreement ID: 101066225</td>
<td>Total cost € 0,00</td>
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<td><strong>DOI</strong></td>
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<td>Coordinated by KOBENHAVNS UNIVERSITET Denmark</td>
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#### Objective

Biological invasions are one of the major threats to biodiversity worldwide, due to the many impacts and rapid spread of invasive alien species (IAS). However, the exact mechanisms underlying invasiveness remain poorly understood. I hypothesise that metagenomic plasticity may be involved in invasions, i.e. IAS may be able to quickly acclimate and adapt to their new environment and oust native species thanks to the higher dynamism of their microbial community structure and/or gene expression patterns. I will study microbiome dynamics in two phylogenetically-close mammals: a successful invader.
grey squirrel, Sciurus carolinensis) and a native species ousted by the former (red squirrel, Sciurus vulgaris), investigating the diverse interplay among their gut microbiome, parasite infection, dietary flexibility and behaviour (individual personality). I will employ an observational approach in a natural experimental setting, comparing variation in the microbiome-phenome dynamics of the two species at both the individual-level (across seasons) and population-level (along a natural-urban gradient). InvasOME will help disclose the mechanisms behind invasiveness and rapid adaptation of IAS, offering useful insights that may prove relevant for the prevention and management of biological invasions. This project is highly multidisciplinary and perfectly integrates several disciplines part of my skill set (invasion ecology, parasitology and behavioural ecology) with state-of-the-art metagenomics in which I will receive advanced training by the proposed host, who has a relevant experience and an innovative and interdisciplinary approach to these fields. I designed this project also to enhance my transferable skills, making the most of the host institution initiatives. I am thus confident that InvasOME will both open an under-explored line of research and at the same time greatly enhance my potential, helping my transition to an independent researcher position.

Fields of science

- medical and health sciences
- health sciences
- parasitology
- natural sciences
- biological sciences
- ecology
- ecosystems
- natural sciences
- biological sciences
- biological behavioural sciences
- behavioural ecology
- natural sciences
- biological sciences
- zoology
- mammalogy
- natural sciences
- biological sciences
- microbiology

Programme(s)

- HORIZON.1.2 - Marie Skłodowska-Curie Actions (MSCA)

Topic(s)

- HORIZON-MSCA-2021-PF-01-01 - MSCA Postdoctoral Fellowships 2021
Call for proposal

HORIZON-MSCA-2021-PF-01

See other projects for this call

Funding Scheme

MSCA-PF - MSCA-PF

Coordinator

KOBENHAVNS UNIVERSITET

Net EU contribution

€ 214,934,40

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Region

Danmark › Hovedstaden › Byen København

Links

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

Other funding

€ 0,00

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