

Proposal Outline

Topic	Progressing Marine Biodiscovery in Ireland
Research Theme	Bioresources – High Value Products
Background and Rationale	<p>Marine biodiscovery looks to the vast diversity of organisms in the marine environment for bioactive compounds that could be commercialised to confront some of our most pressing challenges in human and environmental health. Market reports point to the increasing use of naturally sourced materials and the use of marine bioresources in multiple industry sectors, with the global market for marine biotechnology enabled products set to reach €7 billion by 2025. Pharmaceuticals, biomaterials, food, functional foods, cosmetics and agricultural products derived from marine bioresources represent significant growth opportunities for Ireland.</p> <p>The Centre for Marine Biodiscovery (established in 2009) has been a successful collaboration between the Marine Institute and the Higher Education Sector in Ireland. One of the key achievements of this research has been the development of a functioning marine biorepository at the Marine Institute, with associated well-equipped laboratory facilities to facilitate the systematic archiving, and processing of samples from the marine environment for novel chemicals that could be tested for bioactivity.</p>
Scope of Research (Scientific/ Technical Challenge)	<p>This fellowship will further develop the bioactivity testing applications conducted at the Marine Institute, and further facilitate the operations of the national marine biorepository.</p> <p>It will further build a programme of biodiscovery research that will derive benefit from, and add value to, the existing work programmes of the Marine Institute in the fields of biotoxins, seafood safety, fish health, environmental chemistry and toxicology, and the marine bioeconomy.</p> <p>The fellow would ideally have a background in natural products chemistry, biochemistry, and marine biology, with technical capacities in conducting a range of bioactivity assays.</p>
Expected Impact	Peer reviewed papers would be expected to follow from this research, but the fellow would also be encouraged to facilitate collaborations with commercial entities engaged in leveraging outputs from marine biodiscovery research into commercial products, and leverage research outputs into additional grant funding.
Specific Collaboration	Marine Environment & Food Safety Services, Marine Institute

Location of Fellow	Post-Doctoral Fellow will be based full-time in the National Biodiscovery Laboratory, Marine Institute HQ
Duration and Funding Available	<p>3-5 years</p> <p>€100,000 per annum maximum (e.g. €400,000 for 4 years duration)</p> <p>Note: Reduced overheads rate of 15% as based in the Marine Institute</p>
References	<p>Marine Biotechnology Task Force Report (2017)</p> <p>Marine Biotechnology Strategic Research and Innovation Roadmap (2016)</p> <p>The marine biodiscovery pipeline and ocean medicines of tomorrow Marcel Jaspars et al Journal of the Marine Biological Association, UK Vol 96 Special Issue 1 (2016) DOI: https://doi.org/10.1017/S0025315415002106</p> <p>Emerging Strategies and Integrated Systems Microbiology Technologies for Biodiscovery of Marine Bioactive Compounds Rocha-Martin, J.; Harrington, C.; Dobson, A.D.; O'Gara, F Mar. Drugs 2014, 12, 3516-3559 (2014)</p> <p>Access to and use of marine genetic resources: understanding the legal framework Laura E. Lallier et al Nat. Prod. Rep., 2014, 31, 612-616 DOI: 10.1039/C3NP70123A (2014)</p> <p>Bioactive Natural Substances from Marine Sponges: New Developments and Prospects for Future Pharmaceuticals Stamatios Perdicaris et al., Nat Prod Chem Res 2013, 1:3 DOI: 10.4172/2329-6836.1000114 (2013)</p>