# PGR Studentship Information Template 2021/22 entry

* Please complete the template with as much information as possible.
* \*fields are essential.
* If you have information that does not have a label, please create a new row in the table for it.

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| **\*Title of studentship** | Taking the STING out of it: novel chemical tools to dissect cancer signalling |
| **Value / what is covered?**  | 3-years (fully funded) |
| **Awarding body** | DfE |
| **Number of studentships** | 1 |
| **\*Summary descriptive text / Example of research project** | The STING (stimulator of interferon genes) signalling cascade is a recently discovered pathway with a unique role in innate immunity. STING signalling controls interferon-β (IFN-β) secretion, and aberrant activation of this pathway has been linked directly to serious disorders, including cancer, autoimmune disorders, and inflammatory conditions. Although the STING pathway has attracted considerable attention as a novel therapeutic target, the molecular mechanisms of this pathway are far from fully understood.The central component of the STING pathway is the adaptor protein STING. The main endogenous ligand of STING is the non-canonical cyclic dinucleotide cGAMP (cyclic GMP-AMP), but the bacterial second messengers cyclic di-GMP and cyclic di-AMP are also recognised as ligands. Upon ligand binding, STING is activated via a complex mechanism, details of which appear to be ligand- and species-dependent. Clinically relevant single point mutations that affect STING activation have also been described.The goal of this interdisciplinary project is the development of novel analogues and mimics of cGAMP to elucidate the mechanistic details of STING activation including the impact of clinically relevant mutations and to study STING signalling in cells. Results from this project will provide important new insights into this unique signalling pathway, and advance the development of novel therapeutics for cancer and inflammatory diseases.The project is ideally suited for applicants with an interest and experience in medicinal/organic chemistry, who want to expand their skills in organic synthesis, and learn new experimental techniques e.g., in cell biology. A strong interest in nucleotide chemistry is an advantage.The position is available immediately and should be taken up no later than January 2022. |
| **\*Supervisor(s)** | Prof Gerd WagnerDr Niamh Buckley |
| **\*Eligibility / residence Status** | UK/EU |
| **Country** | Northern Ireland |
| **\*Start date and duration**  | 1 January 2022 (3 yrs) |
| **\*Faculty** | MHLS |
| **\*Research centre / School** | Pharmacy |
| **Subject area** | Chemistry, Medicinal Chemistry, Organic Chemistry, Chemical Biology, Pharmacy, Pharmaceutical Sciences |
| **Candidate requirements / Key skills required for the post**  | Applicants should have a 1st or 2.1 honours degree (or equivalent) in a relevant subject. Relevant subjects include Chemistry, Chemical Biology, Pharmacy, Pharmaceutical Sciences, or a closely related discipline. Students who have a 2.2 honours degree and a Master’s degree may also be considered, but the School reserves the right to shortlist for interview only those applicants who have demonstrated high academic attainment to date |
| **\*Deadline for applications** | 8 November 2021Applications will be reviewed on a rolling basis and the position may close early once a suitable candidate has been identifiedInterviews are expected to take place w/c 15 November |
| **\*How to apply / contacts** | Applications must be submitted electronically via the Queen’s Direct Applications Portal, including ALL required supporting documents, by the closing date.<https://dap.qub.ac.uk/portal/user/u_login.php> Informal enquiries should be directed to g.wagner@qub.ac.ukThe title of the studentship should be referenced in all correspondence. |
| **Relevant links / more information**  | <http://go.qub.ac.uk/GerdWagner>[http://go.qub.ac.uk/NiamhBuckley](https://eur02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fgo.qub.ac.uk%2FNiamhBuckley&data=04%7C01%7Cn.obrien%40qub.ac.uk%7C5c15cf45c7b641993b3908d98d7f72ca%7Ceaab77eab4a549e3a1e8d6dd23a1f286%7C0%7C0%7C637696400939380843%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=McqjwrrLafnCWVBj9rUJOT2U7CRn20GGkDcO5zPUYCE%3D&reserved=0) |
| **Keywords for search filters** | chemical biology, organic synthesis, medicinal chemistry, nucleotides, nucleosides, drug discovery, interdisciplinary, signalling, STING |
| **Training provided through the research project** | The student will receive in-depth training in a broad range of experimental techniques in medicinal chemistry and chemical biology, including the rational design of chemical probes and ligands, advanced organic synthesis (e.g., nucleotide synthesis), and *in vitro* assays. He/she will be primarily based in the John King Laboratory in the School of Pharmacy at QUB, but also have the opportunity to experience different research environments through collaboration with the group of Dr Niamh Buckley and external partners. The project will also provide an ideal opportunity to acquire transferable and generic skills in time and project management, science outreach, and knowledge transfer and commercialisation. |
| **Expected impact activities** | It is anticipated that probes and ligands developed in this project will create opportunities for knowledge transfer, translation, and commercialisation in the areas of drug development for chronic airways diseases. The project will also offer an opportunity for the student to contribute to a range of outreach activities such as the regular delivery of science workshops for school children and lay audiences. |