Patrick F Connolly

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Major fields of interest

Pharmacology, biochemistry, toxicology, cell biology, biotechnology

Education

2012 to Present:

Currently engaged in a four year Ph.D. in Pharmacology at the National University of Ireland, Galway. I am currently writing my thesis and plan to submit by September 2016. I will be available to begin new projects by year's end. During this PhD, I have worked with a large degree of independence, as my supervisor has been on a research sabbatical for the final year. I have also had experience managing, mentoring and training groups of undergraduate and MSc students for extended periods.

2008 to 2012:

B.Sc. in Biotechnology from Dublin City University, Ireland. I graduated with an upper second-class honours degree. Major fields studied: Biochemistry, microbiology, industrial bioprocessing, genetic engineering, cell culture.

Publications, Conferences and Talks

Patrick F. Connolly and Howard O. Fearnhead (2014). *DNA-PK is required for myogenic differentiation.* FEBSJ (in second-round review as of 31-May-2016)

Patrick F. Connolly, Richard Jäger, and Howard O. Fearnhead (2014). *New roles for old enzymes: killer caspases as the engine of cell behavior changes.* Frontiers in Physiology, vol. 5.

Poster presentation: Irish Association of Cancer Research Conference. *EGFR blockade and the inhibition of muscle regeneration in vitro: perspectives for cancer-associated cachexia*. Connolly, Fearnhead. Limerick, Ireland, 2015.

Poster presentation: European Cell Death Organization Conference. *DNA-PK inhibitor Nu-7441 blocks caspase-dependent myogenic differentiation.* Connolly, Fearnhead. Geneva, Switzerland, 2015.

Scheduled to give the following oral presentation: Irish Cell Death Society conference. *DNA-PK activity is required for caspase-dependant myogenic differentiation*. Cork, Ireland, June 2016.

Projects

Novel kinases involved in myogenic fusion. (September 2012 to present)

This is the main project in my PhD. I have screened large compound libraries to identify novel kinases that play a role in myogenic fusion, with particular interest in kinases which interact with cell death or DNA damage response machinery. From these screens, I have identified several putative novel kinases essential for myogenic fusion (one publication in peer review, addressing reviewer's comments as of May-1-2016, another manuscript in preparation). Through this screening project, I have also uncovered potential side-activities of some commonly used clinical chemotherapeutic drugs (manuscripts in preparation).

Discovery of novel glycan-binding proteins in Serratia marcescens. (January 2012 to April 2012)

Glycosylation is a post-translation modification which is, in many circumstances, essential for the normal structure and functioning of a protein. To ensure that correctly gylcosylated proteins are produced, tools must be developed to selectively purify the correct glyco-isoform.

Lectins are proteins which recognize and bind different sugar moieties, and can be used in affinity chromatography. An incomplete roster of lectins is currently

available, particularly ones targeting asialofetuin, the terminal sugar residue on mammalian antibody glycans.

The goal of this project was to screen extracts from the microbe S. marcescens for proteins which can selectively bind asialofetuin-terminating glycans (ATG). Through this work I discovered a putative new ATG-binding protein.

Specific skills and experience

I am proficient and experienced in the following areas:
Pharmacology; biochemistry; working in GMP and GLP environments; drug screening; drug toxicology; target validation; recombinant protein production and purification; DNA sequencing and analysis; bioinformatics; ELISA; whole cell assays (proliferation, viability, survival); pharmacokinetics and pharmacodynamics; glycosylation and glycobiology; mammalian cell culture; bacterial cell culture; insect cell culture; fluorescence microscopy; chromatography; primary cell culture; haematology, histology and cytology staining; genetic engineering; flow cytometry and FACS; AKTA; SOP formulation; cDNA library creation; hit compound validation; viral culture and viral vector transduction; antibody titre and quality analysis; cryopreservation; immunofluorescence and confocal microscopy; RNA interference methods (siRNA and shRNA); PCR (real-time; multiplex; etc); quality control; bioreactor operation; membrane filtration; assay development; data processing and analysis; statistical methods.

Personal

***Nationality*:**

Irish

***Date of Birth*:**

April 1990

***Languages*:**

English (Native proficiency)

Irish (Limited working proficiency)

Dutch (Elementary proficiency)

French (Limited working proficiency)

Hobbies and Interests:

Writing, travel, photography, hiking , camping.