

Research studentships are offered to students wishing to undertake a PhD programme. All studentships are highly competitive and you should ensure (and demonstrate) that there is a good match between your own qualifications and interests and those being sought for the particular studentship.

Research Centre where studentship will be held	School of Life Sciences, Faculty of Natural Sciences, Keele University. Academic registration will be at Keele University throughout the 3 year project.
Studentship reference	FNS GS 2018-09
Web link to any further information (e.g. Research Institute)	Faculty Research Office - http://www.keele.ac.uk/fnsro/
Research topic or field - title	Galactokinase as a novel target to fight leishmaniasis
Research topic or field – full description (or attach document)	See below
Available from (date)	October 2018
Funding support available – Fees, stipend, duration	Self-funded PhD position.
Source of funding	Self-funded
Eligibility criteria	We accept applications from any nationals. MSc in biochemical/ biophysical/ chemical /natural sciences - minimum degree classification 2i or equivalent. An interest in both laboratory and computational work (protein production and biophysical techniques) is essential - full training will be provided.
Terms and conditions of studentship	As per the University Code of Practice
Number of studentships available	1
Application details	go to http://www.keele.ac.uk/pgresearch/studentships/ and click on the "Apply online here" button in this studentship.
Closing date for applications	open ended
Contact for further information and to whom applications will be sent	Informal enquiries about the project should be made to the Project Leads [Anja Winter] and should include a CV and a personal statement. Full applications to: http://www.keele.ac.uk/pgresearch/studentships/

Candidate profile

	Essential	Desirable
Qualifications, Experience and Skills	<p>Masters degree in the biochemical/ / biophysical/ chemical /natural sciences – minimum 2i classification or equivalent.</p> <p>An interest in protein production, enzyme kinetics and analysis using biophysical techniques such as X-ray crystallography. Computer literate.</p>	<p>Previous experience in producing protein in recombinant systems.</p> <p>Previous experience in biophysical techniques or structural biology.</p>
Attitude and Personality	<p>Self-motivation and resilience to undertake advanced research study at PhD level.</p> <p>Excellent communication, interpersonal and organizational skills.</p> <p>The ability to work both independently and as part of a team</p> <p>Natural inquisitiveness and a flair for problem solving. Willingness to learn new practical skills.</p>	<p>Evidence of organizational and time management skills.</p> <p>Evidence of self-motivation and resilience.</p>

Leishmaniasis is a disease caused by parasites of the *Leishmania* type and is spread by the bite of certain types of sandflies. We have identified a putative member of the galactokinase family in the human parasite *Leishmania donovani*. Galactokinase catalyses the second step of the Leloir pathway, a metabolic pathway found in most organisms for the catabolism of β -D-galactose to glucose 1-phosphate. Interestingly, galactokinase from *L. donovani* also appears to phosphorylate N-acetyl-galactosamine. This is unusual for this protein family and warrants more in-depth study, with the aim of evaluating galactokinase as a potential drug target.

In this project, the student will express galactokinase in *E. coli* and purify the enzyme using chromatographic techniques. The purified enzyme will be used in kinetic studies to determine substrate specificity as well as in structural studies (crystallography) to determine its substrate binding mode. Studies will also be carried out *in vivo* using our in-house parasite facilities.

The PhD studentship will be embedded in Keele University's Centre for Applied Entomology and Parasitology (CAEP), an interdisciplinary research centre with collaborative links to Brazil, Burkina Faso and Ghana. We conduct fundamental and applied research on vector-borne parasites and viruses of medical importance, the insect vectors of these pathogens, insect agricultural pests, and fish diseases and immunology.

Applicants should provide a CV, personal statement and two referees.