



<b>Job title</b>	Research Associate/Fellow	<b>Job family and level</b>	Research and Teaching Level 4
<b>School/ Department</b>	Life Sciences	<b>Location</b>	Cell Signalling Research Group

## Purpose of role

The role will provide support to an ongoing new MRC programme grant that aims to exploit a novel molecular toolkit to explore cell type specific adenosine receptor pharmacology and regulation at endogenous levels of expression. The successful candidate will join a team of postdocs supporting this programme and will be specifically involved in the study of adenosine A2A receptor pharmacology and dimerization. The work will involve novel fluorescence based assays and state-of-the-art imaging to unravel the interaction of A2A receptors with other cell surface receptors using 3D cell culture models involving multiple cell types, such as endothelial, fibroblasts and cancers cells (for cancer models).

The role holder will work closely with a postdoctoral medicinal chemist and undertake resonance energy transfer measurements (both BRET and TR-FRET), confocal and super-resolution imaging, fluorescence correlation spectroscopy, CRISPR/Cas9 genome editing and complex molecular and cellular biology.

	<b>Main responsibilities</b> (Primary accountabilities and responsibilities expected to fulfil the role)	<b>% time per year</b>
1	<p>Develop and carry out studies directed at determining the pharmacological properties of A2A receptors in different cell types using FRET and BRET and imaging approaches to study ligand binding, signalling and protein-protein interactions. The postholder should have an excellent working knowledge of GPCR pharmacology and be able to conduct laboratory experiments with a good level of independence.</p> <p>Develop and carry out biophysical studies in living cells, using fluorescence correlation spectroscopy and photon counting histogram techniques, directed at investigating the molecular pharmacology of A2A receptors within membrane microdomains and oligomeric complexes. Investigate the effect of different pharmacological agents on these receptors and undertake detailed analysis of the experimental data obtained using curve fitting and statistical analysis.</p> <p>Use CRISPR/Cas9 genome editing to attach tags to endogenous adenosine A2A receptors for the study of ligand-binding and receptor-receptor interactions at native levels of receptor expression.</p> <p>The postholder should have a good background in basic molecular pharmacological, molecular biology and cell biology techniques and be able</p>	70%

	to supervise new staff and project students in related projects. The postholder will have previous experience of imaging- and fluorescence correlation-based approaches to study membrane proteins or receptors.	
2	Report experimental results to the main supervisors and participate in collaborative meetings and research with other members of the team. The Postholder will also be expected to prepare draft manuscripts for publication.	10%
3	Participation in discussions of research projects and present and communicate findings to the scientific community via published papers, oral communications and poster presentations (at both national and international meetings).	10%
4	In addition to the research project, you will be expected to be a reliable team member by supporting some aspects of general day-to-day activities to ensure a smooth-running of the laboratory.	10%

This job description may be subject to revision following discussion with the person appointed and forms part of the contract of employment.

## Person specification

	<b>Essential</b>	<b>Desirable</b>
<b>Skills</b>	<ul style="list-style-type: none"> <li>• Previous research experience of the molecular pharmacological characterisation of G protein coupled receptors (GPCRs).</li> <li>• Previous experience of bioluminescence resonance energy transfer techniques (BRET).</li> <li>• Previous experience of fluorescence correlation spectroscopy and photon counting histogram analysis.</li> <li>• Good experience of cell culture, transfection techniques and cell-base signalling assays.</li> <li>• Possess good written and oral communication skills.</li> <li>• Good record keeping of data.</li> <li>• Good ability to prioritize, set and meet deadlines in relation to experimental protocols, analysis and interpretation of data.</li> <li>• Ability to plan, assemble relevant data and write scientific papers and abstracts for scientific conferences.</li> <li>• Ability to work independently and as part of a team.</li> </ul>	<ul style="list-style-type: none"> <li>• Previous molecular biology experience.</li> </ul>
<b>Knowledge and experience</b>	<ul style="list-style-type: none"> <li>• Good working knowledge of receptor pharmacology, data analysis and intracellular signalling cascades.</li> <li>• A proven track record of research with evidence of publications and communications.</li> </ul>	<ul style="list-style-type: none"> <li>• Experience in biochemistry and cell biology.</li> </ul>
<b>Qualifications, certification and training (relevant to role)</b>	<ul style="list-style-type: none"> <li>▪ PhD (or close to completion) in molecular pharmacology or a relevant subject area.</li> </ul>	<ul style="list-style-type: none"> <li>• Membership of a relevant biological society. E.g. British Pharmacological Society, Biochemical Society.</li> </ul>



The University of Nottingham is focused on embedding equality, diversity and inclusion in all that we do. As part of this, we welcome a diverse population to join our work force and therefore encourage applicants from all communities, particularly those with protected characteristics under the Equality Act 2010.



The University is a signatory of the Declaration on Research Assessment (DORA). As such we commit to focus on the scientific content of publications (where requested or provided as part of the recruitment and selection process) as a basis for review of quality, and consideration of value and impact of research conducted, rather than any proxy measures such as Journal Impact Factor.

## Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

- Valuing people** Is friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
- Taking ownership** Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
- Forward thinking** Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
- Professional pride** Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
- Always inclusive** Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

## Key relationships with others



