

ANZMAG NEWS – JANUARY 2024

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Dear all,

Welcome to January 2024 edition of ANZMAG News. I hope you have all had a great start to the year and have a great 2024.

AUSTRALIA DAY HONOURS FOR CHEMISTS

2024 got off to a great start for several Chemists who were recognised in the [2024 Australia Day Honours list](#). Congratulations to Em/Prof. Hilton J Kobus AM (ACT), Dr. John A. Ramshaw AM (VIC), Prof. Elizabeth J. New - OAM (NSW), Prof. Debbie S. Silvester-Dean - OAM (WA), Fernando Ferrante - OAM (WA), Gary M. Golding - OAM (QLD), and to anyone I missed out.

Anyone can nominate someone to be recognised. So, if you would like to nominate a deserving scientist for the next honours list (the Kings Birthday honours I think) please see <https://www.qg.gov.au/australian-honours-and-awards/nominate-someone-award> for details. It is not that onerous, you essentially need to make a good case for your nominee and have good referrers who will also make a strong case when asked.

AWARDS

- You can nominate someone for the [2024 Prime Minister's Prizes for Science](#) until 8th February 2024. Last year ANZMAG's Glenn King was recognised. It would be great to get some more magnetic resonance people on the list and you can nominate in 5 easy steps at <https://www.industry.gov.au/news/how-nominate-prime-ministers-prizes-science-5-easy-steps>
- The [International Council on Magnetic Resonance in Biological Systems \(ICMRBS\)](#) invites nominations for outstanding young magnetic resonance spectroscopists for the 2024 Founders' Medal, See <https://icmrbs.ws.gc.cuny.edu/founders-medal/>
- The [Australian Academy of Health and Medical Sciences Outstanding Female Researcher Medal](#) is open for applications. Details at <https://aahms.org/programs/awards/outstanding-female-researcher/> nominations are due by 1st March 2024.
- The [Metabolomics Society](#) has a call for nominations out for honorary fellows and early and mid career medals. See <https://metabolomicsociety.org> and click the relevant link at the top of the page.

NEW WEBSITE

Thanks to the heroic efforts of the [ANZMAG website committee](#), Gareth Nealon, Vanessa Morris, Ana Kwan, Marc Sani, and Horst Schirra, the new ANZMAG website www.anzmag.com.au is live and working. All ANZMAG members are encouraged to register and use the site and provide feedback. Questions on content and/or can go to Gareth.Nealon@uwa.edu.au. You can even see a collection of previous ANZMAG newsletters on the site.

Thanks to the whole committee for this.

JOBS

- The [University of Queensland](https://www.nature.com/naturecareers/job/12811754/director-national-biologics-facility-nbf-and-senior-group-leader/) is looking for a Director of the National Biologics Facility (NBF) and Senior Group Leader - <https://www.nature.com/naturecareers/job/12811754/director-national-biologics-facility-nbf-and-senior-group-leader/>
- More jobs at www.naturejobs.com

BRUKER ANNOUNCES THE FIRST 1.2 GHZ NMR INSTALLATION IN THE USA

Prepare to be at least a little bit envious as Bruker announces the first 1.2 GHz NMR Installation in the United States at The Ohio State University with and funding from the National Science Foundation recently. See https://ir.bruker.com/press-releases/press-release-details/2023/Bruker-Announces-First-1.2-GHz-NMR-Installation-in-the-United-States-at-The-Ohio-State-University---Funded-by-the-U.S.-National-Science-Foundation/default.aspx?utm_source=Email&utm_medium=Enews&utm_campaign=BBIO-AcaGov-MRS-NMR-Topic_Enews_January-Q1-2024

According to Bruker Europe leads the way in high-field NMR with, eight 1.2 GHz NMRs installed and four more on order. In the Asia-Pacific the Korea Basic Science Institute (KBSI) has taken the lead with a 1.2 GHz on order, while Riken in Japan already has the first single-story 1.0 GHz NMR installed. The USA also has 3, 1.1 GHz instruments. Maybe a LIEF grant waiting to happen here in Australia?

PAPER OF THE MONTH

This month's Paper of the Month was published at the end of last year in Nature Communications no less. It is from Prof Paul Gooley's lab at the University of Melbourne. It is by Asadollahi et al., and the title is "*Unravelling the mechanism of neurotensin recognition by neurotensin receptor 1*". The science behind this that conformational ensembles of G protein-coupled receptors (GPCRs) include both inactive and active states. NMR and other techniques have shown that ligands shift the ensemble toward specific states depending on the pharmacological efficacy of the ligand. However, how receptors recognize ligands and the kinetic mechanism underlying this population shift is poorly understood. In this paper the authors investigate the kinetic mechanism of neurotensin recognition by neurotensin receptor 1 (NTS1) using a combination of ¹⁹F-NMR, and the less exciting hydrogen-deuterium exchange mass spectrometry and stopped-flow fluorescence spectroscopy ;-). The results indicate slow-exchanging conformational heterogeneity on the extracellular surface of ligand-bound NTS1. Subsequent numerical analysis of the kinetic data of neurotensin binding shows that ligand recognition follows an induced-fit mechanism, in which conformational changes occur after neurotensin binding. This approach is applicable to other GPCRs and could provide insight into the kinetic regulation of ligand recognition by GPCRs. Great work Paul and team. Read more at <https://www.nature.com/articles/s41467-023-44010-7>

STORIES FROM THE WEB

- <https://www.labmate-online.com/news/mass-spectrometry-and-spectroscopy/41/edinburgh-instruments-ltd/electron-spin-resonance-esr-spectroscopy-extends-to-1-thz-range/41943> - Electron Spin Resonance (Spectroscopy Extends to 1 THz Range)
- <https://physicsworld.com/a/mri-keeps-proton-beam-therapy-on-target-new-technique-tracks-bacteria-motion/> An interesting podcast about the use of MRI and guide proton beam therapy.
- <https://www.azom.com/article.aspx?ArticleID=23232> How can NMR help improve battery production and performance? Find out at this link

For those that read this far here is NMR News years resolution cartoon. It's an old one but still good (well at least I think so) see <http://nmr.binghamton.edu/comics/NMRresolution.jpg>