

## Metals and membranes in neuroscience

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The redox active transition metals  $\text{Cu}^{2+}$  and  $\text{Fe}^{3+}$  have been proposed as important factors in the neuropathology of Alzheimer's disease (AD) and other neurodegenerative diseases. Although there is much experimental evidence on various aspects of the interaction between these metals and the molecular and supramolecular components of the neuropil, including the membranes, the structural biology of metal binding is very much a work in progress. The Australian Society for Biophysics (ASB) organized a one-day symposium on "Metals and membranes in neuroscience" as a satellite to the Seventh International Brain Research Organization (IBRO) World Congress of Neuroscience, held in Melbourne, Australia, in July 2007. Such a meeting in Australia was considered opportune with major new facilities coming on line, including expansion of the advanced EPR instrumentation at the Centre for Magnetic Resonance, University of Queensland; biological solid-

state NMR at the Bio21 NMR Facility, University of Melbourne; neutron diffraction, scattering and reflectometry at the Bragg Institute associated with the new research reactor at the Australian Nuclear Science and Technology Organisation, Sydney; and XAFS, X-ray diffraction and X-ray scattering at the new Australian Synchrotron in Melbourne. Although the topic was treated from a biophysical viewpoint, the speakers had diverse backgrounds, ranging from neurobiology through quantum chemistry to molecular biology. The speakers, who are amongst the leading pioneers of metallo-neurobiology, have stimulated the interest of many biophysicists and structural biologists in the area and have contributed to this special issue of the European Biophysics Journal.

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