

Application Note

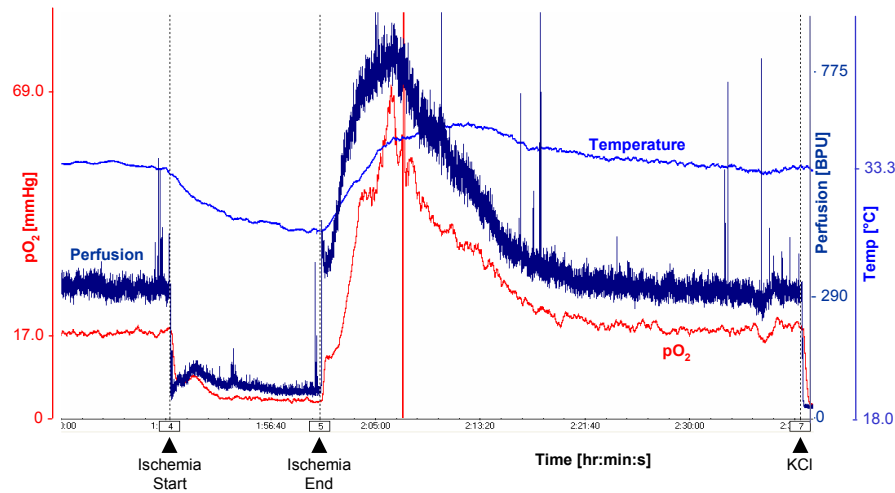


Brain: Global Ischemia and Reperfusion

In the data shown, dual-channel OxyLite™ and OxyFlo™ instruments were used to simultaneously monitor cerebral pO₂, blood perfusion and temperature from a single local region of the left hemisphere (Hippocampus) in an anaesthetised rat model.

Following stereotactic, invasive placement of a combined pO₂/perfusion/temp sensor and a period of baseline stabilisation, global cerebral ischaemia was induced (at the indicated times) by temporary occlusion of both common carotid arteries. The experiment was terminated by fatal IV injection of KCl (as indicated).

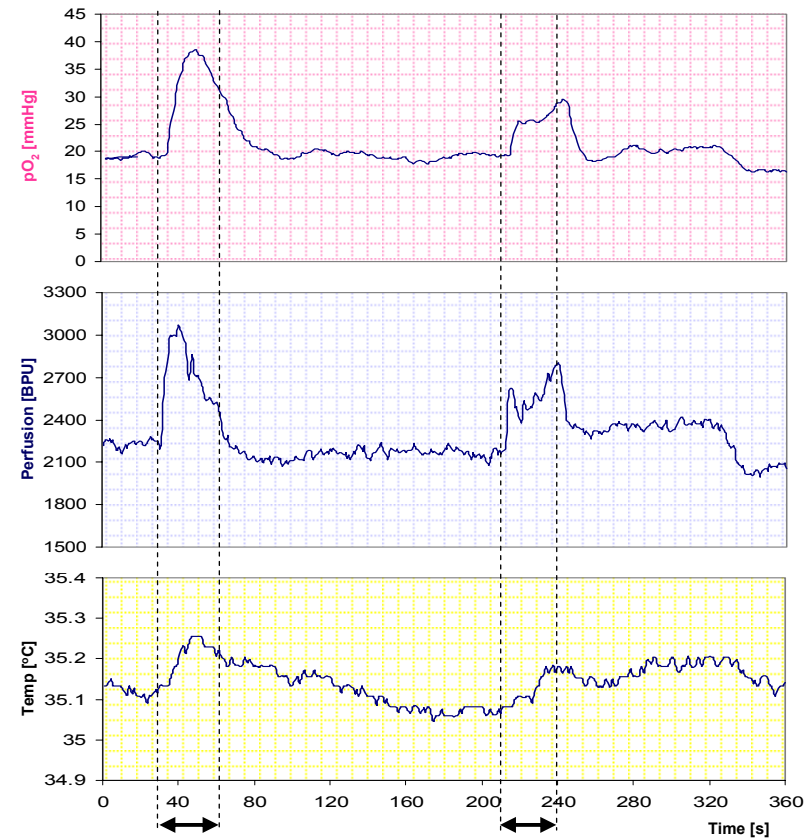
The ability of our monitors and unique multi-modal sensors to directly measure key physiological parameters in real time underscores their value in research models involving cerebral ischemia and neuroprotection.



Brain: A Model of Forepaw Stimulation

In the data shown, a single multi-parameter sensor was used to provide a continuous trace of local cortex ptO₂, blood perfusion and temperature during phases of forepaw stimulation in an anesthetized rat model. The effects of two stimulation events are shown.

Multi-modal, continuous and minimally invasive tissue monitoring provides a highly valuable tool in models of brain function research. Oxford Optronix prides itself in the provision of innovative tissue monitoring technologies coupled with proactive customer service.



Oxford Optronix Ltd. wishes to thank Prof. Wei Chen (University of Minnesota, Minneapolis MN, USA) for permission to reproduce preliminary and unpublished experimental data. (Rev-1, 27/05/2005)

Oxford Optronix Ltd. wishes to thank Dr Hubert Trübel, Dr Peter Herman and Dr Basavaraju G. Sanganahalli (Department of Diagnostic Radiology, Yale University School of Medicine, USA) for permission to reproduce preliminary, unpublished data. (Rev-1, 15/08/2005)

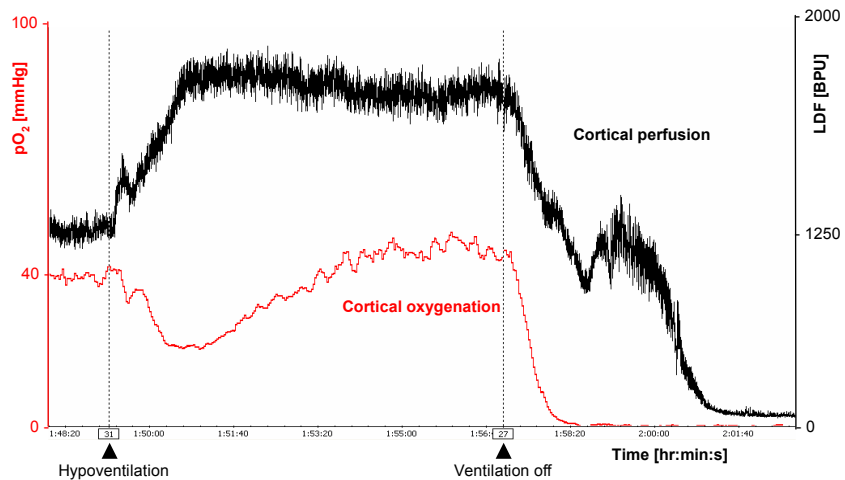
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Brain: Response to Hypoventilation

In the data shown, dual-channel OxyLite™ and OxyFlo™ instruments were used to simultaneously monitor cerebral pO₂ and blood perfusion in an anaesthetised, intubated rat model.

A combined pO₂/perfusion sensor was positioned stereotactically and used to track local tissue pO₂ and blood perfusion in response to ventilation changes as indicated on the figure.

The ability of our monitors and unique multi-modal sensors to directly measure key physiological parameters in real time underscores their value in research models involving cerebral ischemia and in general anesthesiology research.



Oxford Optronix Ltd. wishes to thank Dr. Gregory Hare (University of Toronto, Canada) for permission to reproduce unpublished experimental data. (Rev-1, 27/05/2005)