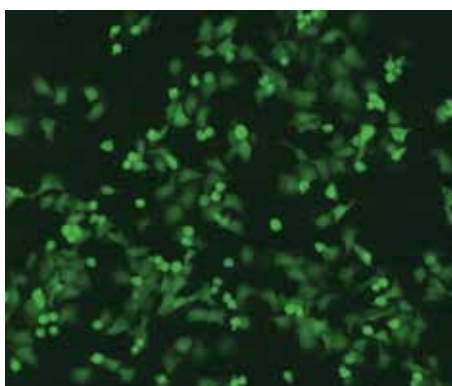
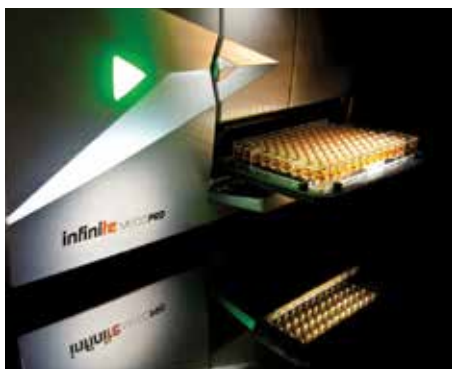


Shining a light on novel cancer drugs

Researchers at the Lyon Neuroscience Research Center are benefitting from the flexibility and user-friendly design of the Infinite® 200 PRO multimode reader, and have developed a unique cell migration assay to help identify novel biotherapeutics for the treatment of glioblastoma.



Human squamous epithelial carcinoma cells



The Infinite 200 PRO is helping research into the treatment of glioblastoma

The Lyon Neuroscience Research Center (Centre de Recherche en Neurosciences de Lyon, CRNL) is a multidisciplinary facility bringing together expertise from across academia, industry and clinical research to provide a greater understanding of brain function and disease. Created in 2011, the CRNL investigates a wide range of basic cognitive functions – including sleep cycles, olfactory processes, nociception, auditory cognition and memory – as well as neurological disorders and diseases, such as epilepsy and cancer.

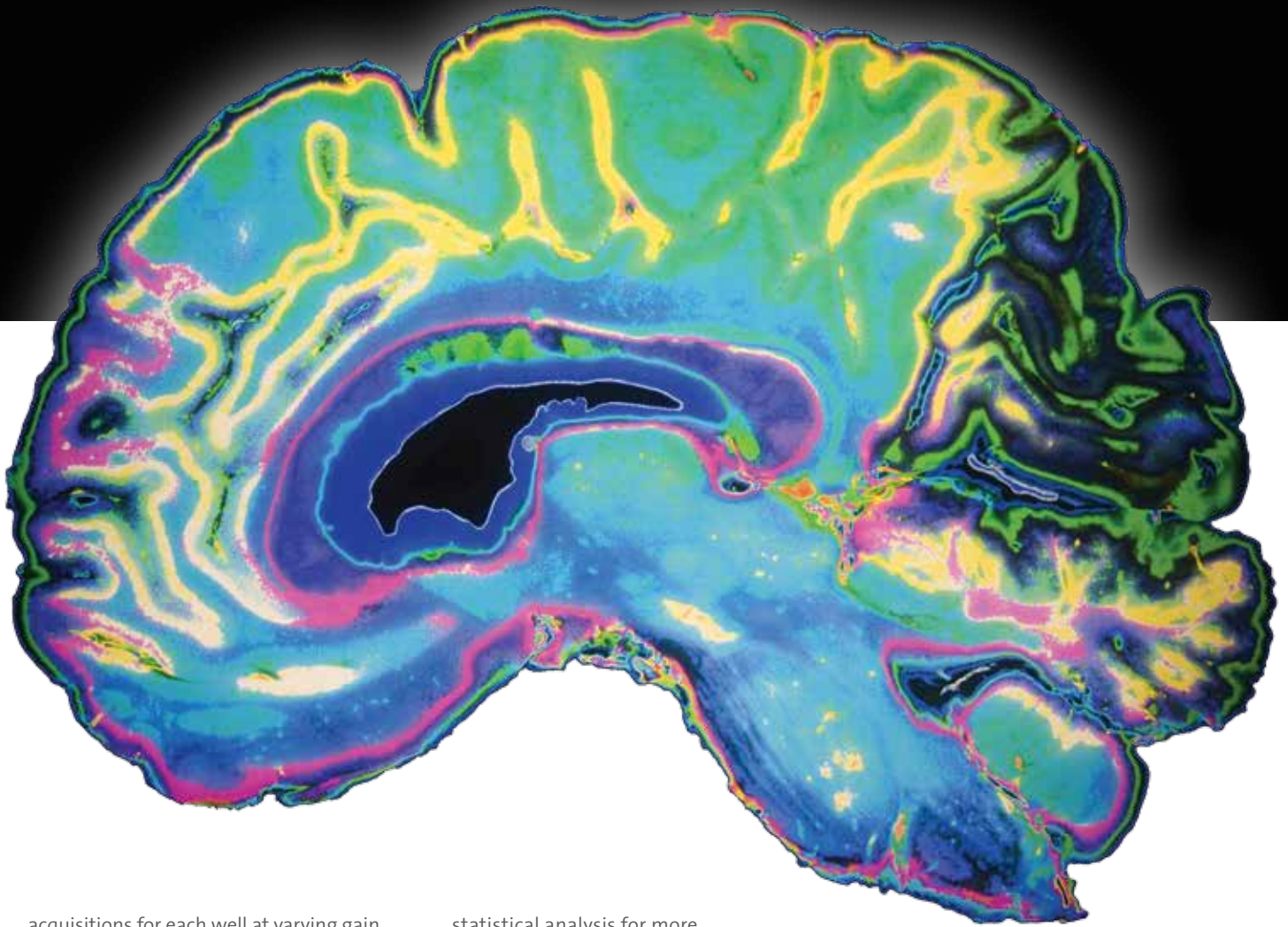
Dr Emmanuel Sotirakis, a researcher in the CRNL's neuro-oncology and neuro-inflammation group, explained: "We have a very strong interaction between academic research, clinical research and industry, gathering expertise from across different research environments to better understand brain-related functions and diseases. Within my group, we are strongly focused on translational research, working closely with local hospitals and drug discovery companies to try and develop new therapeutic agents which will improve the prognosis of glioblastoma patients. This type of malignant tumor is very aggressive, and there is currently a lack of effective therapeutic strategies to improve outcomes for these patients."

"We work closely with a local industry partner that specializes in drug discovery for cancers. We develop a range of assays to characterize the effect of these novel therapeutics on glioma cells, and one of the studies we were interested in performing was a cell migration assay. Traditional manual methods

for performing this type of investigation are laborious and time consuming, requiring complex cell handling and fluorescence microscopy techniques. We wanted to develop a more automated technique that would allow higher throughput. We began looking at microplate-based assays using FluoroBlok™ cell culture inserts and, as a very new center, we had the advantage of being able to choose a microplate reader to suit our assay requirements."

"It was vital for the system to have bottom reading optics for the cell migration assay, and sensitivity was also a major consideration. We looked at multimode readers from several manufacturers, and the Infinite 200 PRO seemed the best match for our needs. We also wanted a system capable of performing everything from basic colorimetric or fluorimetric measurements to ELISAs and rapid kinetic assays. All of our cell-based assays use the system's temperature control function to avoid causing unnecessary stress to the cells during data acquisition. We also use the injector module for a number of kinetic studies, particularly calcium signaling assays."

"For the cell migration assay using the FluoroBlok inserts, we have been able to achieve very good results for both dye-stained and GFP-tagged cell lines, thanks to the system's excellent signal-to-noise ratio and adjustable z-focus. A single 96-well plate can be scanned in under two minutes, minimizing the time the cells spend out of the incubator. Alternatively, for experiments where the maximum signal output is unknown, we can perform multiple



acquisitions for each well at varying gain settings, then identify the optimal gain setting once the experiment is complete. This is a great time-saving feature, and still takes less than five minutes for a 96-well plate.”

“Because we needed a system that could be used across multiple projects, flexibility was a key factor, and my colleagues have been very happy with the versatility and ease-of-use of the Tecan instrument. The system’s dual software packages are also well suited to our needs. i-control™ allows rapid data acquisition and export, while Magellan™ provides advanced data interpretation and

statistical analysis for more advanced users. Data security is also an important consideration, as we work with a number of industrial partners, and the ability to control access and permissions gives us complete peace of mind. Finally, the support of Tecan’s applications team has been a real benefit. When we first looked at investing in a reader, our local representative was very helpful in ensuring we got the best system for our needs, and the Tecan team has always been available to answer our questions and provide expert support for specific applications.”

To find out more on Tecan’s Infinite 200 PRO, visit www.tecan.com/infinite200pro

To learn more about CRNL, go to crnl.univ-lyon1.fr

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