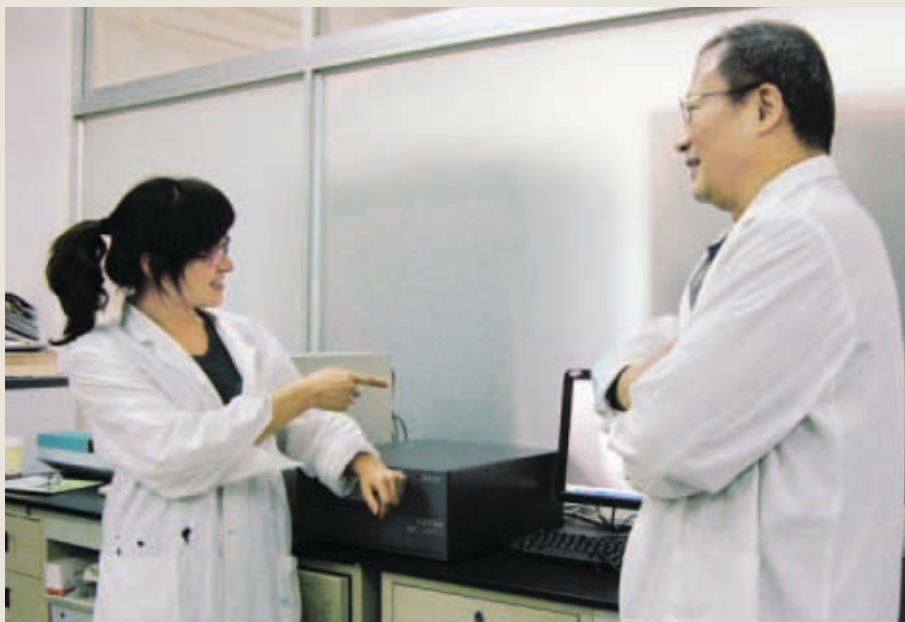


Living in harmony is probably the best medicine you will need

Researchers at The Institute of Traditional Chinese Medicine and Natural Products, Jinan University, China, are using a Tecan multimode microplate reader to investigate the mechanism of immunosuppression caused by stress, aiming to discover effective natural solutions.



Miss Yifang Li (left) and Dr Hiroshi Kurihara (right) with the Tecan reader

The Institute of Traditional Chinese Medicine and Nature Products at Jinan University is one of the leading institutes for Chinese medicine and natural products, with more than 100 full-time researchers and a considerable number of postgraduate students. For many years Dr Kurihara, a Professor and Deputy Director of the Institute, has focused his research on investigation into stress, discovering numerous interesting relationships between stress and a person's health. A respected expert in the field, Dr Kurihara believes that stress not only makes a person more susceptible to health problems, but is the cause, either directly or indirectly, of some diseases.

A team of researchers at the Institute, led by Dr Kurihara, is currently investigating the mechanism of immunosuppression caused by stress, attempting to discover effective natural remedies which can restore the immune system to a normal level. Dr Kurihara explained: "Our studies found a correlation between immune response and antioxidant capacity in immunocytes. We have developed a cheap, efficient assay to monitor the concentration of free radicals in a cell, and use it as an important indicator of a cell's health status; stress-induced immunosuppression will lower metabolic activity and raise the concentration of free radicals and, as a consequence, the cell – and subsequently the patient – becomes more susceptible to disease."

"Our assay relies on two fluorescent dyes which can be bleached by free radicals. When developing the assay, the dyes were carefully selected such that one was distributed within the cell and the other outside the cell, monitoring intra- and extra-cellular activity respectively. The assay requires kinetic measurement of fluorescence intensity for at least two hours, and we rely on Tecan's GENios™ multimode microplate reader for this."

Dr Kurihara continued: "Natural products and extracts with the ability to restore the altered immune system are also screened using the GENios reader; application of the compound or extracts reduces the rate at which the dye is bleached, partially restoring fluorescence in proportion to the product's

ability to scavenge free radicals. The combination of a simple, cost-effective assay and the flexible and reliable GENios reader provides researchers with a powerful and economical screening platform.”

One of Tecan’s selling points has always been the robustness and longevity of its instruments. Although the GENios reader is an older generation instrument that can no longer be purchased, it clearly demonstrates the durability of Tecan equipment, continuing to perform well and proving a real asset to the Institute. “We have had the GENios reader in our laboratory for over five years, and it is usually in operation seven or eight hours a day, five days a week. It has proved very reliable, which is crucial to our work, as we operate to very tight schedules and cannot imagine what would happen if the instrument failed. In addition, being able to perform the assay in a microplate format keeps costs very low, almost negligible. Tecan’s local partner, Eastwin, provides impressive customer service, responding very quickly to any queries and helping us to plan our instrument maintenance, ensuring that its performance always meets specification.”

Dr Kurihara concluded: “We have a good relationship with Tecan and are pleased to have had the GENios reader in our department for so long. With multimode microplate readers becoming ever more essential for life science applications, it really is hard to imagine our laboratory without one.”



Tecan GENios multimode reader

To find out more on Tecan’s detection solutions, visit www.tecan.com/detection