

# Stressing the importance of quality assays

The Department of Psychology at TU Dresden is taking advantage of the quality and reproducibility of various IBL International immunoassays – including the Cortisol Saliva Luminescence Immunoassay – to investigate the link between steroid hormones and stress.

Researchers in the Department of Psychology at Germany's Technische Universität Dresden (TU Dresden) have been at the forefront of stress research for over 30 years. The department uses a broad range of techniques – from 'question and answer' and paper-based testing through to brain imaging and biochemical assays – to investigate the effects of both acute and chronic stress on the body. Professor Clemens Kirschbaum explained: "Psychology has come a long way since the days of simple 'pencil and paper' testing, with many research centers now routinely employing electroencephalography (EEG) and functional magnetic resonance imaging (fMRI), but there are still only a limited number of wet labs looking into the biochemical changes associated with psychological profiling."

"Steroid hormones are a key area of interest for us; any deviation from the physiological 'normal' levels of biomarkers such as cortisol can be used as indicators of acute or chronic stress conditions. However, unlike most clinical biomarker testing – which uses

blood, urine or cerebrospinal fluid – we need non-invasive testing methods to avoid skewing results, and so have developed a range of techniques based on saliva or hair extract analysis."

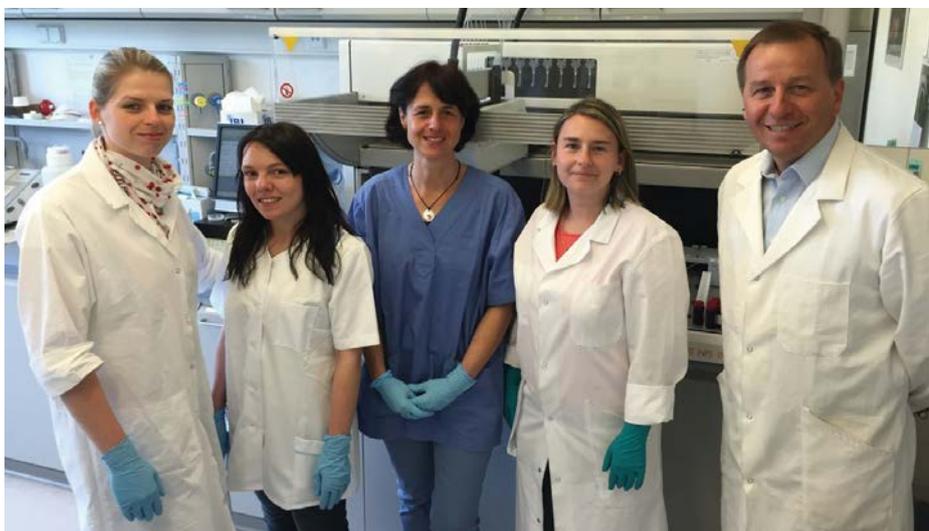
"The measurement of cortisol in saliva is one of our most commonly performed assays, and we first developed a microplate-based chemiluminescent immunoassay for this application in 1986. As study sizes grew bigger and bigger – many individual studies in this area now comprise more than 10,000 individual samples – our in-house assay became impractical in terms of the labor involved in hand-coating the plates, as well as the batch-to-batch reproducibility and long-term stability. It was clear that commercially produced assay plates, with the associated quality control measures, were a more practical option. We switched to IBL International's assay in 2001, and have been very happy with our decision ever since."

"We are quite active in supporting laboratories and research groups around

"We switched to IBL International's reagents in 2001, and have been very happy with our decision ever since."

the world, receiving samples from across Europe, almost every state in the USA, Australia, New Zealand, Japan, Peru and many other countries, and perform many thousands of tests a year for the cortisol assay alone. As most of these groups are academic researchers, the cost of testing is an important consideration, especially with so many samples per study. Combining the IBL assay kits with our Tecan liquid handling workstations certainly helps us to efficiently process the samples in a time- and cost-effective manner, enabling us to check every result to ensure high quality datasets for our colleagues and collaborators."

"Unlike a contract testing laboratory, we have a real interest in our partners' research. With over 25 years of experience performing this type of assay, as well as designing and running studies ourselves, our collaborators trust us to provide a high quality service. Offering this testing service also gives us unprecedented access to datasets from studies around the world, all processed in exactly the same way. For these reasons, our reputation is very important to us, making it essential to have a long-term partner we can trust and work with to expand and improve the quality of our testing. IBL International is exactly this, and the company has always been very responsive to our needs. We have a very good relationship with the Hamburg team; they are always keen to help us as quickly as they can and we regularly share data and ideas on the development of new or improved assays."



Members of the Department of Psychology wet lab team with one of the department's Tecan liquid handling workstations



“Alongside our immunoassay testing, techniques such as LC-MS are becoming increasingly prevalent for biomarker analysis, and we are also using our Tecan liquid handling workstations to automate sample preparation for some of these other modalities, for example, we are now performing liquid-liquid extractions on the platforms. IBL International becoming part of the Tecan Group offers the potential for further collaborations, allowing us to further benefit from our long-term relationship and contribute towards future developments in this exciting area.”

To find out more about IBL International's range of saliva diagnostic kits, visit [www.ibl-international.com/en/saliva-diagnostics](http://www.ibl-international.com/en/saliva-diagnostics)

To learn more about the Department of Psychology at TU Dresden, go to <http://biopsychologie.tu-dresden.de>