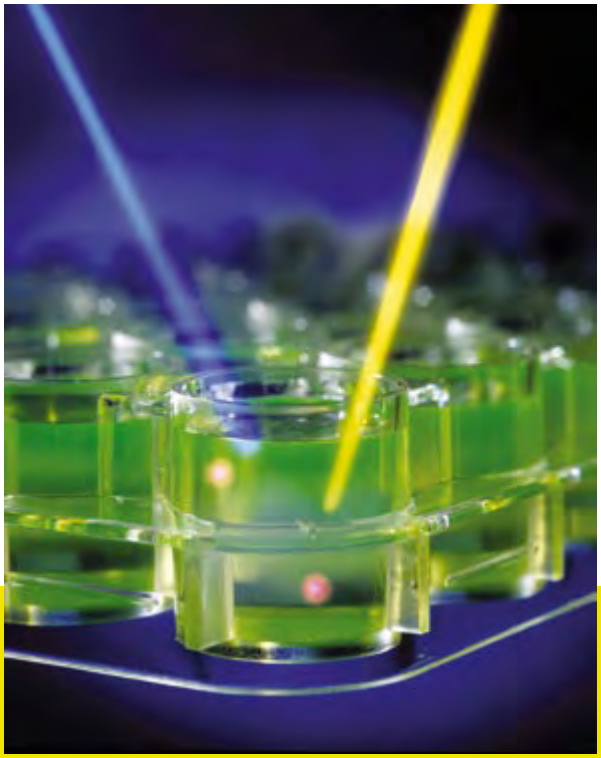
Clever use of color



Under the seventh amendment to the EU cosmetics directive, the cosmetic industry is obliged to phase out most animal experiments for cosmetic ingredients by March 2009. Cosmital SA, a research division of Wella AG and part of Procter & Gamble, is using innovative artificial human skin models to develop and validate new methods with the goal of replacing animal testing, and relies on Tecan's Infinite™ M200 microplate reader for many of its assays.

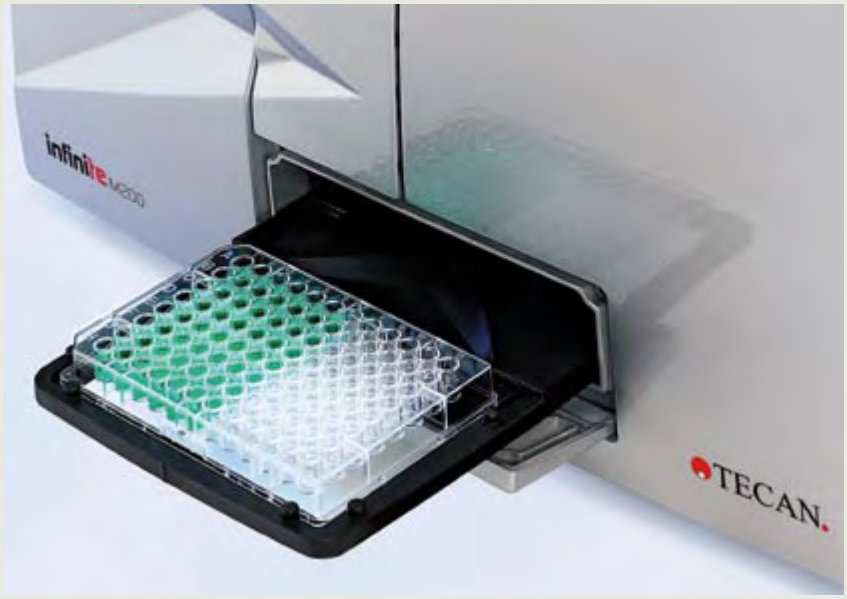
Dr Andreas Zeller, head of the genotoxicity laboratory at Cosmital, explained the impact of this EU directive on Wella's Experimental Product Safety department: "Wella as a company has always avoided animal testing as much as possible and has limited this to rare cases when testing was needed to meet regulatory or safety obligations. We do our best to be prepared for a safety assessment of new ingredients without toxicological data from animal experiments, however, finding and validating new methods before this deadline is a tremendous challenge for the cosmetic industry."

"With regard to detection of cytotoxicity we face many challenges, not least because one of our focus areas is hair dyes – colored chemicals that can interfere with the colorimetric assays usually associated with cytotoxicity measurement. These chemicals are often very reactive and do not wash off completely after incubating with the cells, leaving reactive residues that interfere with the assay and can give false negative or false positive values. Another problem is that the traditional endpoint assays, such as Trypan blue, resazurin or LDH release, often do not have a very broad linear range and so are not suitable for larger numbers of cells."

"We chose the Infinite M200 reader to help us develop and measure all kinds of endpoint reactions, including cytotoxicity assays, and we also use it to quickly and simply get the spectra of the dyes we are using. Previously, we have used two basic spectrophotometers and we wanted to add fluorescence and luminescence to our capabilities. When we saw that an Infinite reader could do all these things and that there was a monochromator option available, it became clear that this would be the ideal choice. Working with all kinds of colors as we do would be completely impractical for filter-based wavelength selection and, at the same time, we have effectively replaced

three readers with just one, saving on laboratory space. However, what I like most about the Infinite M200 reader is its ease of use. Colleagues in neighboring departments use it regularly, for example, for luminometric assays. Our staff rotates around the different areas, so it is essential to have an instrument that is easy to operate. The Infinite M200 really is so easy to use that everybody knows how to operate it after just five minutes of instruction."

At present the department is, among other things, developing a genotoxicity assay based on the reconstructed 3D skin models – a project sponsored by Colipa (the European Cosmetic, Toiletry and Perfumery Association). Dr Zeller added: "We are currently working on a Comet assay with these skin models which should allow the sensitive detection of genotoxic substances without sacrificing specificity. A significant lack of the latter is a big problem in the area of genotoxicity and leads to a huge number of so-called 'irrelevant positives' in *in vitro* testing. Detection of cytotoxicity is an important aspect of this project and the Infinite M200 helps us with this part of the protocol."



Tecan's Infinite M200

Cosmital genotoxicity group (l to r): Céline Procureur, Linda Corbino-Giunta, Dr Andreas Zeller