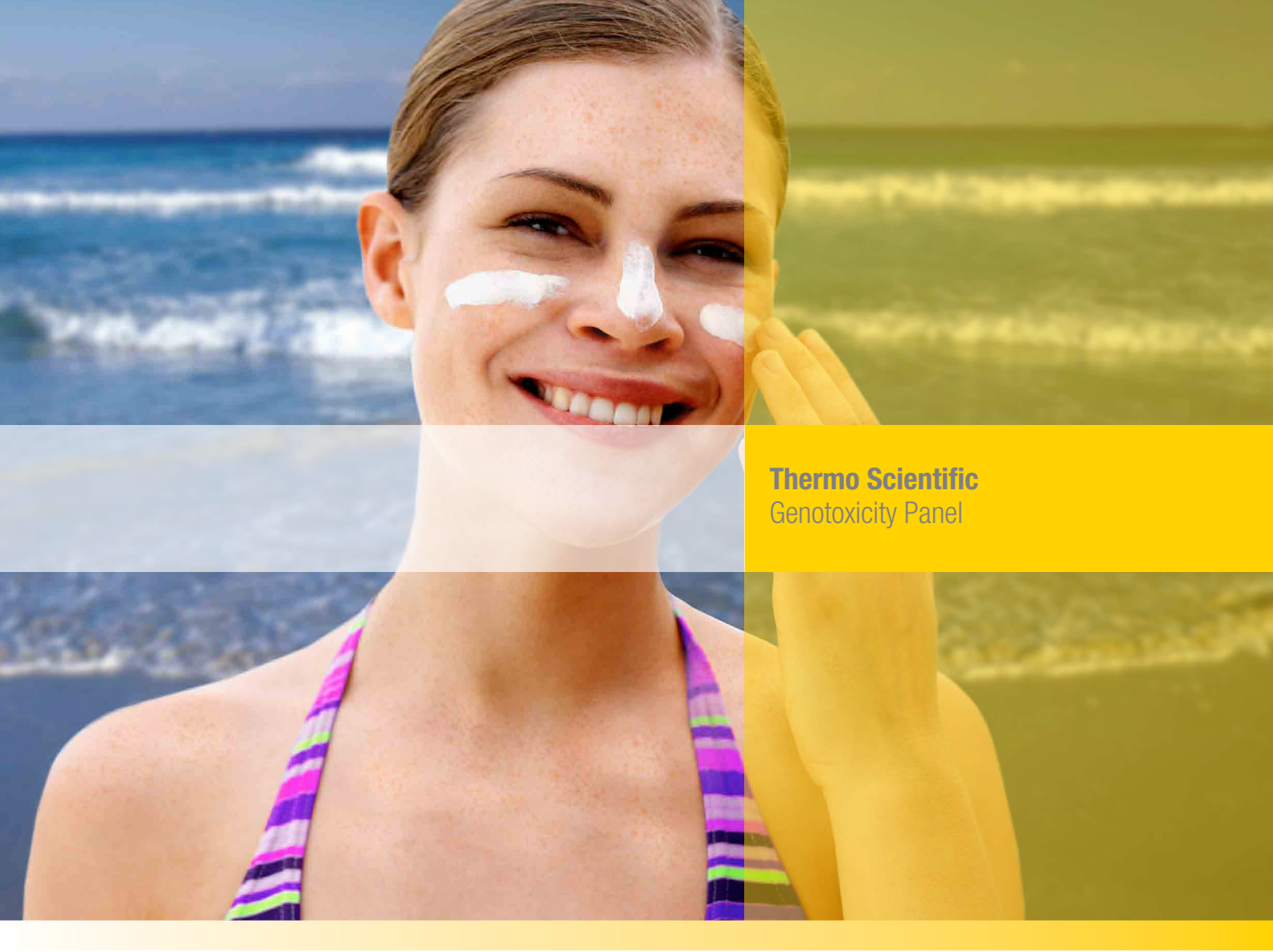


Thermo Scientific
Genotoxicity Panel

automated, animal-free
genotoxicity assessment

- Integrated comet and miscronucleus panel
- OECD test guideline compliant
- Efficent and reproducible

Thermo
SCIENTIFIC

the best of both worlds
at your fingertips

multiparameter, automated screens

The potential for a cosmetic or consumer chemical to cause DNA damage is a primary concern of chemical toxicologists and government regulators. Historically, bacterial assays and rodent micronucleus assays have been used for testing, but these are prohibitively expensive and difficult to scale. They also lacked adequate specificity and predictivity for genotoxicity endpoints. These assays have lost favor under the European Cosmetics Directive.

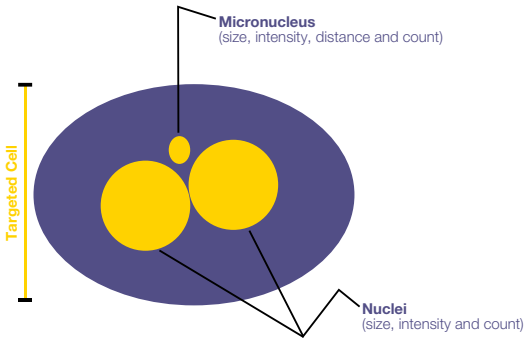
Completion of the Organization of Economic Cooperation and Development (OECD) test guideline for *in vitro* micronucleus has resulted in wide adoption of this labor-intensive procedure for primary genotoxicity evaluation. Without an automated solution, only a few chemicals can be evaluated per week at a very high cost using manual microscopic evaluation. The Thermo Scientific™ High Content platforms automate the process of micronucleus evaluation, achieving 20 chemicals analyzed per week at one-tenth the cost.

The accuracy of *in vitro* assays relies on results from redundant multiple tests. The Thermo Scientific™ Genotoxicity Panel features both the *in vitro* micronucleus assay and analytical tools for examining comet formation using current state-of-the-art assay preparation tools. The result is a simple and time- and money-saving platform that enables precise genetic toxicity determinations.

Micronucleus
Validation of the cytokinesis block method was used for both the presence and absence of S9 microsomes in OECD-accepted CHO-K1 cells for both clastogen and aneugen identification.

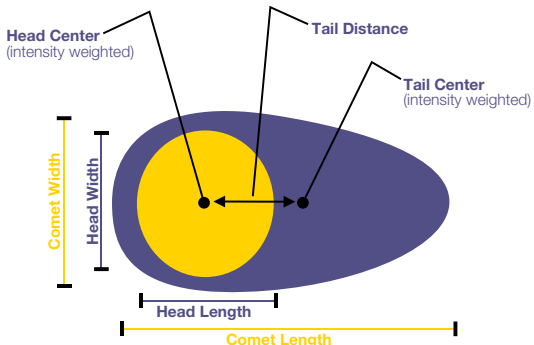
Micronucleus
OECD TG487 guidelines concerning proper nuclear count, size and intensity, and micronuclei characteristics are used within the software. Full evaluation of four substances with positive control(s) can be completed in four to five hours.

Micronucleus
The frequency of micronuclei, cell count and nuclei classification, and toxicity measurements are reported in the software and template and by providing corollary images.



Comet
Comet is the preferred method for primary genotoxicity assessment on non-dividing primary cells of the liver and skin. One chemical is analyzed in five minutes versus 1.5 hours using manual scoring.

Comet
Single-cell electrophoresis using Thermo Scientific™ or third-party products produces comets that are automatically measured for DNA distribution (head and tail), olivetail moment, and normal/abnormal phenotypes.



trust your *in vitro* toxicity testing
to the leader in high content

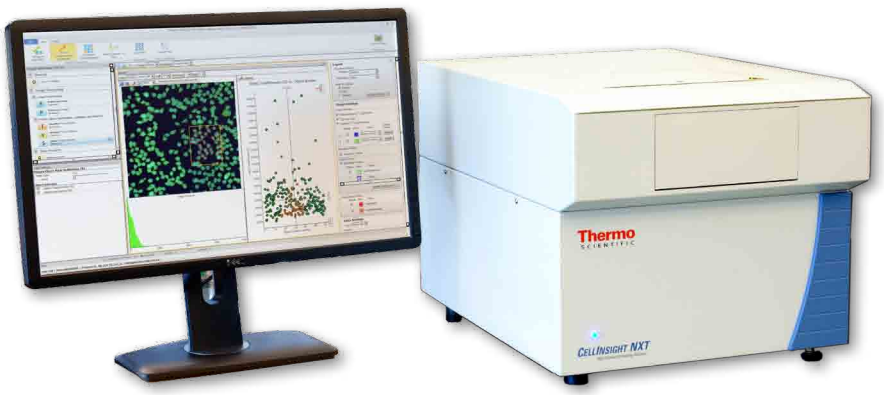
www.thermoscientific.com/highcontent

The Genotoxicity Panel is designed to run on the Thermo Scientific High Content platforms. The platforms offer a predictive, high content approach to evaluate overall genotoxicity between compounds in question.

- The automated, bench-top, easy-to-use platform enables a researcher to increase productivity by applying a high-throughput pre-screen for dose selection and research prioritization, replacing the *in vivo* equivalent assays.
- The Genotoxicity Panel offers an in-depth solution for companies needing to comply with regulatory testing requirements for *in vitro* genotoxicity studies.
- Both templates are fully validated with necessary biological protocols, providing a higher throughput and less expensive way to adopt these assays in your organization.

Thermo Scientific™ High Content products offer intuitive software, reagents and protocols, and easy-to-interpret data analysis tools. The detailed quantitative High Content data acquired by multi-channel fluorescent imaging of cells *in vitro* allows analysis on a cell-by-cell basis, providing immediate phenotypic results that cannot be obtained by traditional biochemical assays.

an innovative powerful tool
for high-throughput toxicity testing



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