

## Genotoxic evaluation of essential oils: comparison between classical and automated micronucleous *in vitro* assay

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To assess the genotoxic effects of cosmetic ingredients it is well-established the use of the OECD 487 (OECD, 2010) micronucleous (MN) *in vitro* assay. This test requires greater time and highly skilled technician; therefore it is necessary to search for alternative methods. The goal of this study was to evaluate the genotoxic potential of *Minthostachys setosa* (Ms), *Pimenta pseudocaryophyllus* (Pp) and *Drimys brasiliensis* (Db) essential oils comparing the classical method to cytometer method. The automated assay was conducted in a similar way to the standard manual *in vitro* MN test, with the main difference being the scoring of the cells (Diaz et al., 2007). The essential oils were extracted by hydrodistillation and its dispersion was evaluated in culture medium. The test was evaluated using one concentration of each oil, S9 metabolic system and clastogenic and aneugenic controls. The flow cytometer method was adapted from Bryce et al (Bryce et al., 2007) procedure that incorporates an ethidium monoazide bromide staining step in order to label the chromatin of necrotic and mid/late stage apoptotic cells. The results obtained in both micronucleus tests using the CHO-K1 cell line were similar and both showed no genotoxic potential for Ms, Pp and Dbessential oils.

### References

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