

abstract 1

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Human monocytoïd THP-1 cell line versus monocyte-derived human immature dendritic cells as in vitro models for predicting the sensitising potential of chemicals.

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Immature dendritic cells (DCs) modulate differentiation markers following in vitro exposure to chemicals generating contact allergies. THP-1 is a monocytoïd cell line maintaining some differentiating plasticity. In this study, human DCs and THP-1 cells were compared as in vitro models to predict contact sensitisation of chemicals with different sensitising potential. Expression of CD80 and CD86 was assessed by flow cytometry after exposure to subtoxic concentrations of potent (2,4-dinitrochlorobenzene, DNCB and p-phenylenediamine, PPD), strong (thimerosal, TMS), moderate (sodium tetrachloroplatinate, Na₂PtCl₄) sensitising compounds as well as of non-sensitising, irritating sodium dodecyl sulphate (SDS) as compared to a vehicle of sensitising substances (dimethyl sulphoxide, DMSO). Up-regulation of CD86 following in vitro incubation of DCs and THP-1 cells with DNCB, PPD, TMS and Na₂PtCl₄, but not with SDS, was observed. The CD80 membrane marker was up-regulated on DCs following in vitro incubation with DNCB and PPD, but not with TMS, Na₂PtCl₄. and SDS. On THP-1 cells, only DNCB up-regulated CD80 expression. In conclusion, both the cell line THP-1 and DCs are promising in vitro models for assays aiming at predicting the sensitisation potential of chemicals. THP-1 cell line is by far easier to handle and offers relevant advantages from the practical point of view.

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