In Vitro Study of Cell Differentiation by Two Type Mouse Embryo Stem Cells on the Dental Adhesives

Koichi IMAI¹, Kazuhiko SUESE², ³, Yoshitomo HONDA⁴, Tsubasa SHIRAI⁵, Fumiya OGAWA⁶, Hirofumi SAWAI⁷, Muneyasu SHIDA⁸ and Hiromasa TAKASHIMA⁹

¹ Department of Biomaterials, ² Department of Esthetic Dentistry, ³ Osaka Dental University, School of Dental Technician and Hygienist, ⁴ Institute of Dental Research, ⁵ Graduate School of Dentistry (Biomaterials), ⁶ Department of Postgraduate Clinical Training, ⁷ Department of Internal Medicine, ⁸ Department of Endodontics, Osaka Dental University, Osaka, Japan ⁹ Ina Research Inc., Nagano, Japan

SYNOPSIS
Embryonic Stem Cell Test (EST) is an in vitro embryotoxicity screening test to predict human developmental toxicity, mainly used in Europe and the United States. In the present study, EL-M3 and ES-R1-EGFP B2/EGFP cell lines were used, instead of the mouse ES-D3 cell line that is used as an indicator of cell differentiation, to compare the developmental toxicities of 11 dental adhesives with those obtained with ES-D3 cells. The results were comparable between EL-M3 and ES-D3 cell lines. Specifically, all the products fall into the category of "non-embryotoxicity," although the results widely varied. Three-dimensional culture with glass fibers could also be employed for the experiment.

Key words: dental adhesive monomer, embryotoxicity, EL-M3 cells, ES-R1-EGFP B2/EGFP cells

ERRATUM
Seventh author’s name "Muneyasu SHIDA" was omitted. Also, the eighth author affiliation that was different displays. Missing of author’s name was mistake only electronic J-Stage version.


Correct notation is shown