ONLINE ISSN : 1881-1361
PRINT ISSN : 0287-4547

Dental Materials Journal
Vol. 25 (2006) , No. 4 p.693-699

[PDF (814K)] [References]

Influence of Novel Resin Monomer on Viability of L-929 Mouse Fibroblasts *in vitro*

Satoshi JINNO[1)], Tatsushi KAWAI[2)], Atsuko ISHIKAWA[3)], Tomoo SUZUKI[1)], Nobuaki HATTORI[1)], Hiroyuki OKEYA[1)], Tatsuhide HAYASHI[2)], Hatsuhiko MAEDA[4)], Yuzo OHNO[1)], Masamitsu ITO[1)] and Toshihide NOGUCHI[1)]

1) Department of Periodontology, School of Dentistry, Aichi-Gakuin University
2) Department of Dental Material Science, School of Dentistry, Aichi-Gakuin University
3) Second Department of Prosthodontics, School of Dentistry, Aichi-Gakuin University
4) Department of Oral Pathology, School of Dentistry, Aichi-Gakuin University

(Received July 18, 2006)
(Accepted September 12, 2006)

Abstract:
We have previously synthesized a novel acrylic resin monomer, methacryloyloxyethyl methyl succinate (TA). The aim of this *in vitro* study, therefore, was to examine its influence on cell viability using L-929 mouse fibroblasts and then compare the results with MMA, EMA, and LMA. Medium containing each monomer was changed every 15 minutes as some monomers were volatile. After one hour of exposure, these mediums were replaced with a normal medium and cells were further incubated for 72 hours. IC_{50} value for each monomer was determined, and chronological cell viability and cytomorphologic observation were evaluated. Viability was impaired in a dose-dependent manner. All monomers, except TA, tended to correlate between molecular weight and cell viability. On the other hand, TA showed excellent viability and did not impair growth abruptly. These results thus demonstrated that cellular damage by TA was much lower than that by other monomers.

Key words:
Monomer, Cell viability, Methyl methacrylate

To cite this article:

Satoshi JINNO, Tatsushi KAWAI, Atsuko ISHIKAWA, Tomoo SUZUKI, Nobuaki HATTORI, Hiroyuki OKEYA, Tatsuhide HAYASHI, Hatsuhiko MAEDA, Yuzo OHNO, Masamitsu ITO and Toshihide NOGUCHI. Influence of Novel Resin Monomer on Viability of L-929 Mouse Fibroblasts *in vitro* . Dent. Mater. J. 2006; 25: 693-699 .

---

doi:10.4012/dmj.25.693

JOI JST.JSTAGE/dmj/25.693