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[\[PDF \(1466K\)\]](#) [\[References\]](#)**Proliferation and differentiation potential of pluripotent mesenchymal precursor C2C12 cells on resin-based restorative materials**

[Satoshi IMAZATO](#)¹⁾, [Daisuke HORIKAWA](#)¹⁾, [Kahoru TAKEDA](#)¹⁾, [Wakako KIBA](#)¹⁾, [Naomi IZUTANI](#)¹⁾, [Ranna YOSHIKAWA](#)¹⁾, [Mikako HAYASHI](#)¹⁾, [Shigeyuki EBISU](#)¹⁾ and [Takayoshi NAKANO](#)²⁾

1) Department of Restorative Dentistry and Endodontology, Osaka University Graduate School of Dentistry

2) Department of Materials Science and Engineering, Osaka University Graduate School of Engineering

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Abstract:

This study investigated the proliferation and differentiation potential of pluripotent mesenchymal cells on three resin-based restoratives using a typical pluripotent mesenchymal precursor cell line, C2C12. C2C12 cells were cultured for 3-21 days on cured specimens of a Bis-GMA/TEGDMA-based composite resin (APX; Clearfil AP-X), a 4-META/MMA-based resin cement (SB; Superbond C&B) or a HEMA-containing resin modified glass-ionomer (LC; Fuji Ionomer Type II LC). To examine the influences on differentiation potential, alkaline phosphatase (ALP) activity of the cells cultured on each material was determined. On APX and SB, cells adhered and proliferated well, and no significant influences on ALP activity were observed. In contrast, poor cell proliferation and significant suppression of ALP activity were observed for cells cultured on LC, similar to those cultured on a zinc oxide EBA cement used as a control material. Bis-GMA/TEGDMA-based composite resin and 4-META/MMA-based resin exhibited better biocompatibility for C2C12 cells than HEMA-containing resin modified glass-ionomer, suggesting a potential advantage of the former two resins to show smaller influences on regeneration of periapical or periodontal tissue.

Key words:
[Restorative materials](#), [Resins](#), [Mesenchymal cells](#)

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