

[Available Issues](#) | [Japanese](#)
[>> Publisher Site](#)

Author: [ADVANCED](#) | Volume Page
 Keyword: |


[TOP](#) > [Available Issues](#) > [Table of Contents](#) > **Abstract**

PRINT ISSN : 0040-8891

The Bulletin of Tokyo Dental College

Vol. 51 (2010) , No. 4 :221-226

[\[PDF \(83K\)\]](#) [\[References\]](#)

1 α ,25-dihydroxyvitamin D₃ Rapidly Modulates Ca²⁺ Influx in Osteoblasts Mediated by Ca²⁺ Channels

[Yushi Uchida](#)¹⁾²⁾, [Takayuki Endoh](#)²⁾, [Yoshiyuki Shibukawa](#)²⁾, [Masakazu Tazaki](#)²⁾ and [Kenji Sueishi](#)¹⁾

1) Department of Orthodontics, Tokyo Dental College

2) Oral Health Science Center hrc7, Tokyo Dental College

(Received April 21, 2010)

(Accepted June 9, 2010)

Abstract: The biologically active form of vitamin D, 1 α ,25-dihydroxy vitamin D₃ (VD), regulates the synthesis of the bone Ca-binding proteins osteocalcin and osteopontin. The actions of VD are mediated through the vitamin D receptor (VDR). Liganded VDR heterodimerizes with the retinoid X receptor and interacts with a vitamin D response element (VDRE). Recently, it has been demonstrated that vitamin D responses elicited in osteoblasts can be rapid as well as long-term. The purpose of this study was to elucidate the mechanism of Ca²⁺ signaling of VD in osteoblasts using intracellular Ca²⁺ ([Ca²⁺]_i) measurements. A rapid VD (10 nM)-induced increase in [Ca²⁺]_i was observed within 40sec. This increase, however, was negated with application of Ca²⁺-free Krebs' solution. These results indicate that VD induces an increase in [Ca²⁺]_i from extracellular Ca²⁺ in osteoblasts.

Key words: [Non-genomic action](#), [1 \$\alpha\$,25-dihydroxyvitamin D₃](#), [Osteoblasts](#)

[\[PDF \(83K\)\]](#) [\[References\]](#)

 Download Meta of Article [\[Help\]](#)

RIS

To cite this article:

Yushi Uchida, Takayuki Endoh, Yoshiyuki Shibukawa, Masakazu Tazaki and Kenji Sueishi:
“ $1\alpha,25$ -dihydroxyvitamin D_3 Rapidly Modulates Ca^{2+} Influx in Osteoblasts Mediated by Ca^{2+}
Channels”. The Bulletin of Tokyo Dental College, Vol. **51**: 221-226 (2010) .

doi:10.2209/tdcpublication.51.221

JOI JST.JSTAGE/tdcpublication/51.221

Copyright (c) 2010 by Tokyo Dental College, Japan



[Japan Science and Technology Information Aggregator, Electronic](#)

