Osteogenic genes related to the canonic WNT pathway are down-regulated in ameloblastomaType:

Abstract:

Objective. The aim of this study was to determine the expression of essential osteogenic genes related to the canonic WNT pathway, i.e., WDR5, sFRP-2, and their downstream genes, in ameloblastoma and to clarify their biologic impact on this neoplasm. Study Design. Forty-six paraffin-embedded ameloblastoma samples and ameloblastic (AM-1) and preosteoblastic (KUSA/A1) cell lines were used. Immunohistochemistry, Western blot, reverse-transcription polymerase chain reaction, and alkaline phosphatase (ALP) activity assay were performed. Results. WDR5, essential for osteoblast differentiation and canonic WNT pathway activation, was negative in most ameloblastoma cases and weakly expressed in AM-1 cells. Conversely, sFRP-2s was overexpressed. RUNX2 and C-MYC, downstream inductions of canonic WNT pathway activation, demonstrated weak mRNA expressions in ameloblastoma, suggesting WNT pathway impairment and WDR5 functional inactivity. Recombinant WDR5 weakly induced ALP activity of KUSA/A1 cells cultured in AM-1 conditioned medium. Conclusions. These findings suggest that WNT-related bone-forming genes are down-regulated in ameloblastoma. Concurrent sFRP-2 overexpression suggests that both bone-forming and bone-inhibiting genes equally contributed to reduced bone formation in this neoplasm.

Author	• Sathi, G. A. • Tsujigiwa, H. • Ito, S. • Siar, C. H. • Katase, N. • Tamamura, R. • Harada, H. • Nagatsuka, H.
Source	Oral Surgery Oral Medicine Oral Pathology Oral Radiology
ISSN	2212-4403
DOI	10.1016/j.oooo.2012.08.453
Volume (Issue)	114(6)
Page	771-777
Year	2012

Keyword:

wd-40 repeat protein, beta-catenin, bone-formation, signaling pathway, wd-repeat, cell-line, expression, differentiation, induce, family

Please Cite As:

SATHI, G. A., TSUJIGIWA, H., ITO, S., SIAR, C. H., KATASE, N., TAMAMURA, R., HARADA, H. & NAGATSUKA, H. 2012. Osteogenic genes related to the canonic WNT pathway are down-regulated in ameloblastoma. *Oral Surgery Oral Medicine Oral Pathology Oral Radiology,* 114**,** 771-777.

URL:

- http://apps.webofknowledge.com search via Accession No >> 000311370000027
- http://www.sciencedirect.com/science/article/pii/S2212440312015088