Notch signaling and ghost cell fate in the calcifying cystic odontogenic tumor

Type:

Article

Abstract:
Notch signaling is an evolutionarily conserved mechanism that enables adjacent cells to adopt different fates. Ghost cells (GCs) are anucleate cells with homogeneous pale eosinophilic cytoplasm and very pale to clear central areas (previous nucleus sites). Although GCs are present in a variety of oclontogenic lesions notably the calcifying cystic odontogenic tumor (CCOT), their nature and process of formation remains elusive. The aim of this study was to investigate the role of Notch signaling in the cell fate specification of GCs in CCOT. Immunohistochemical staining for four Notch receptors (Notchl, Notch2, Notch3 and Notch4) and three ligands (jagged1, jagged2 and Delta)) was performed on archival tissues of five CCOT cases. Level of positivity was quantified as negative (0), mild (+), moderate (2+) and strong (3+). Results revealed that GCs demonstrated overexpression for Notchl and jaggedl suggesting that Notchljaggedl signaling might serve as the main transduction mechanism in cell fate decision for GCs in CCOT. Protein localizations were largely membranous and/or cytoplasmic. Mineralized GCs also stained positive implicating that the calcification process might be associated with upregulation of these molecules. The other Notch receptors and lig-ands were weak to absent in GCs and tumoral epithelium. Stromal endothelium and fibroblasts were stained variably positive.

Author	• Siar, C. H. • Kawakami, T. • Buery, R. R. • Nakano, K. • Tomida, M. • Tsujigiwa, H. • Han, P. P. • Nagatsuka, H. • Ng, K. H.
Source	European Journal of Medical Research
ISSN	0949-2321
DOI	-
Volume (Issue)	16(11)
Page	501-506
Year	2011

Keyword:

Notch,Jagged,Delta,Calcifying cystic odontogenic tumor (CCOT),Ghost Cells,differential expression,ameloblastoma,keratocyst,jagged1,chains

Please Cite As:

SIAR, C. H., KAWAKAMI, T., BUERY, R. R., NAKANO, K., TOMIDA, M., TSUJIGIWA, H., HAN, P. P., NAGATSUKA, H. & NG, K. H. 2011. **Notch signaling and ghost cell fate in the calcifying cystic odontogenic tumor**. *European Journal of Medical Research,* 16**,** 501-506.

URL:

- http://apps.webofknowledge.com search via Accession No >>000298059100006
- http://www.scopus.com/inward/record.url?eid=2-s2.0-82555195034&partnerID=40&md5=162fc90d103acc32ab394084793f7107
- http://www.eurjmedres.com/content/16/11/501
- http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3351808/
- http://www.bioportfolio.com/resources/pmarticle/253101/Notch-Signaling-And-Ghost-Cell-Fate-In-The-Calcifying-Cystic-Odontogenic-Tumor.html