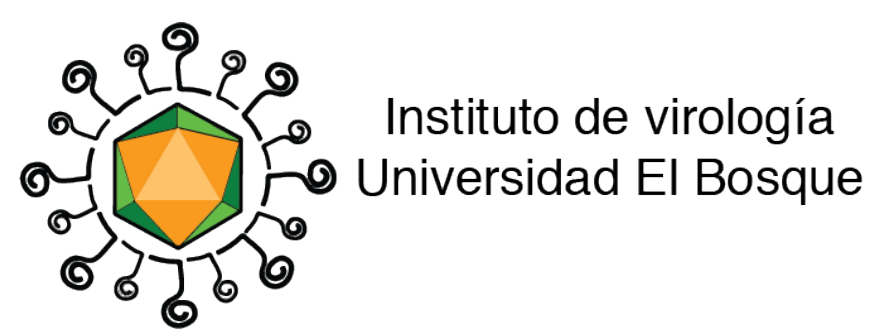


# CHRONIC CAPSAICIN STIMULUS CHANGES THE EXPRESSION OF CANNABINOID-RECEPTORS IN ODONTOBLAST-LIKE-CELLS

Poster #: 2675



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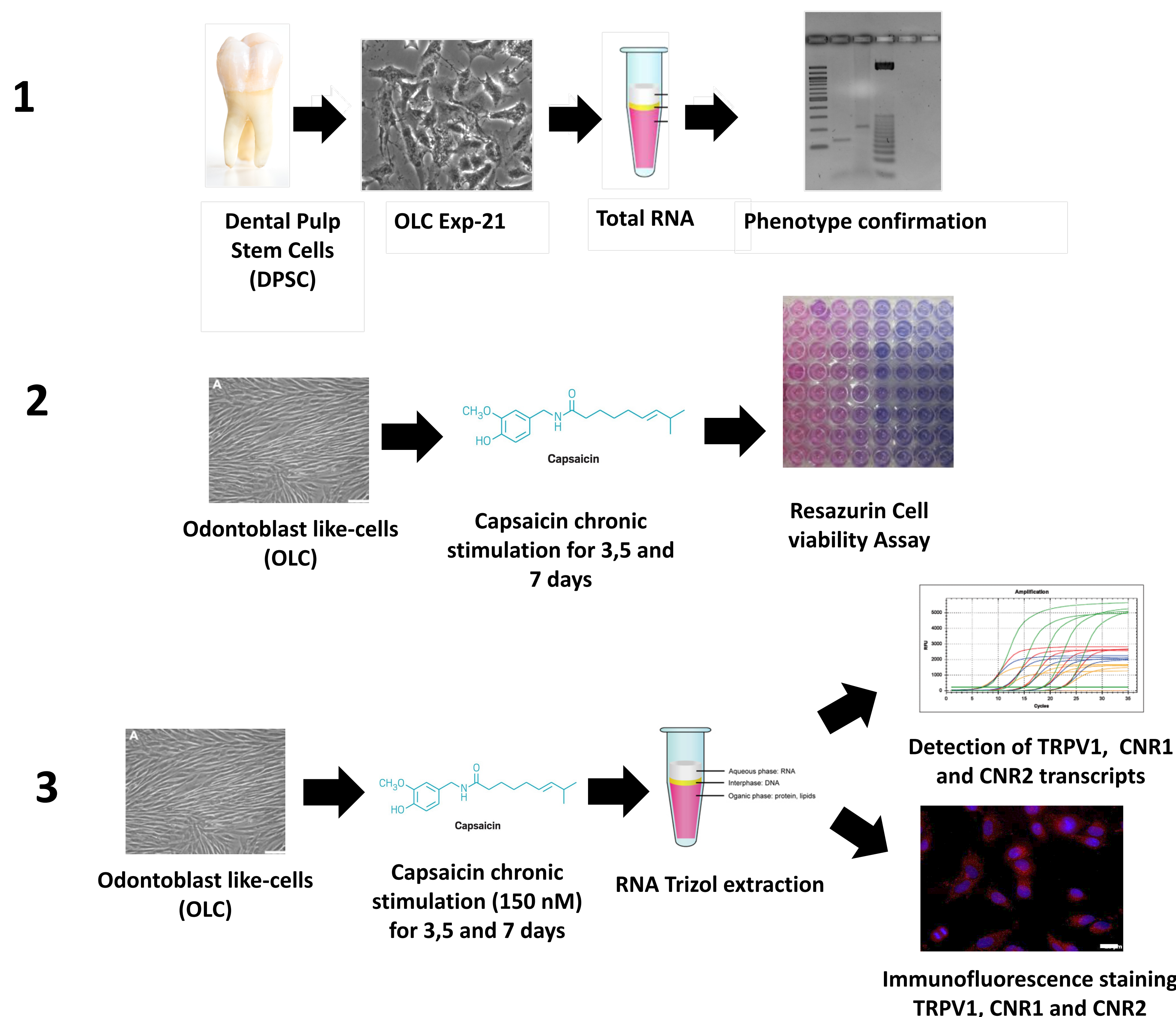
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Odontoblasts are involved in the production of dentine throughout the human being's lifespan, in mechanical and thermosensitive responses and these cells are related in dental pain and sensitivity theories. Dental sensitivity affects approximately between 45 to 57% of the world population and its clinical management is limited nowadays, therefore new clinical management strategies are required. The crosslinking between activation of transient receptor potential (TRP) and cannabinoid receptors (CNR) have been described. We analyzed the CNR levels modification after chronic capsaicin stimulation, to evaluated these receptors like therapeutics targets.

## OBJECTIVE

Determine changes in the cannabinoids receptors expression induced after chronic capsaicin stimulation in human Odontoblast-like-cells (OLC).

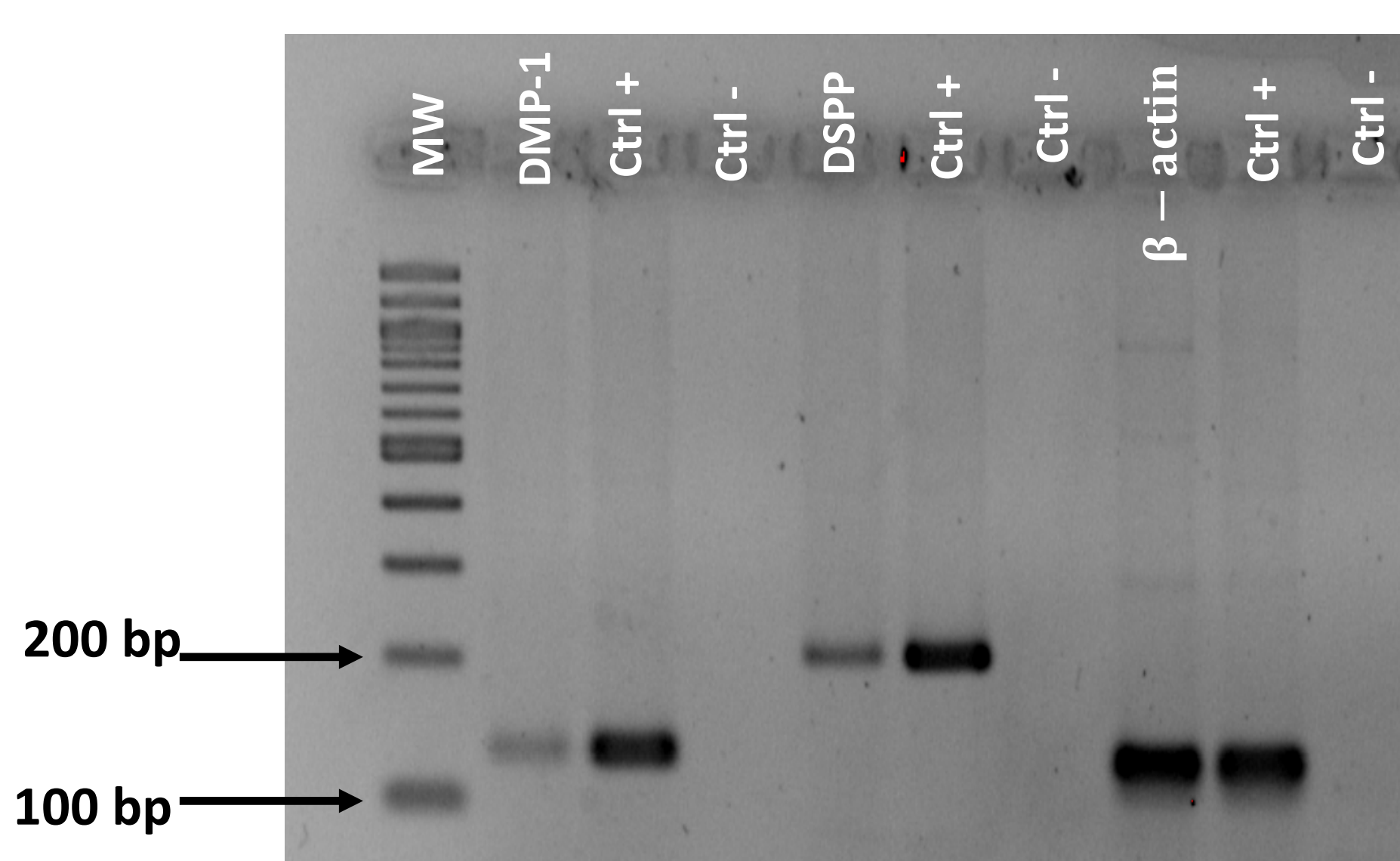
## METHODS



## RESULTS

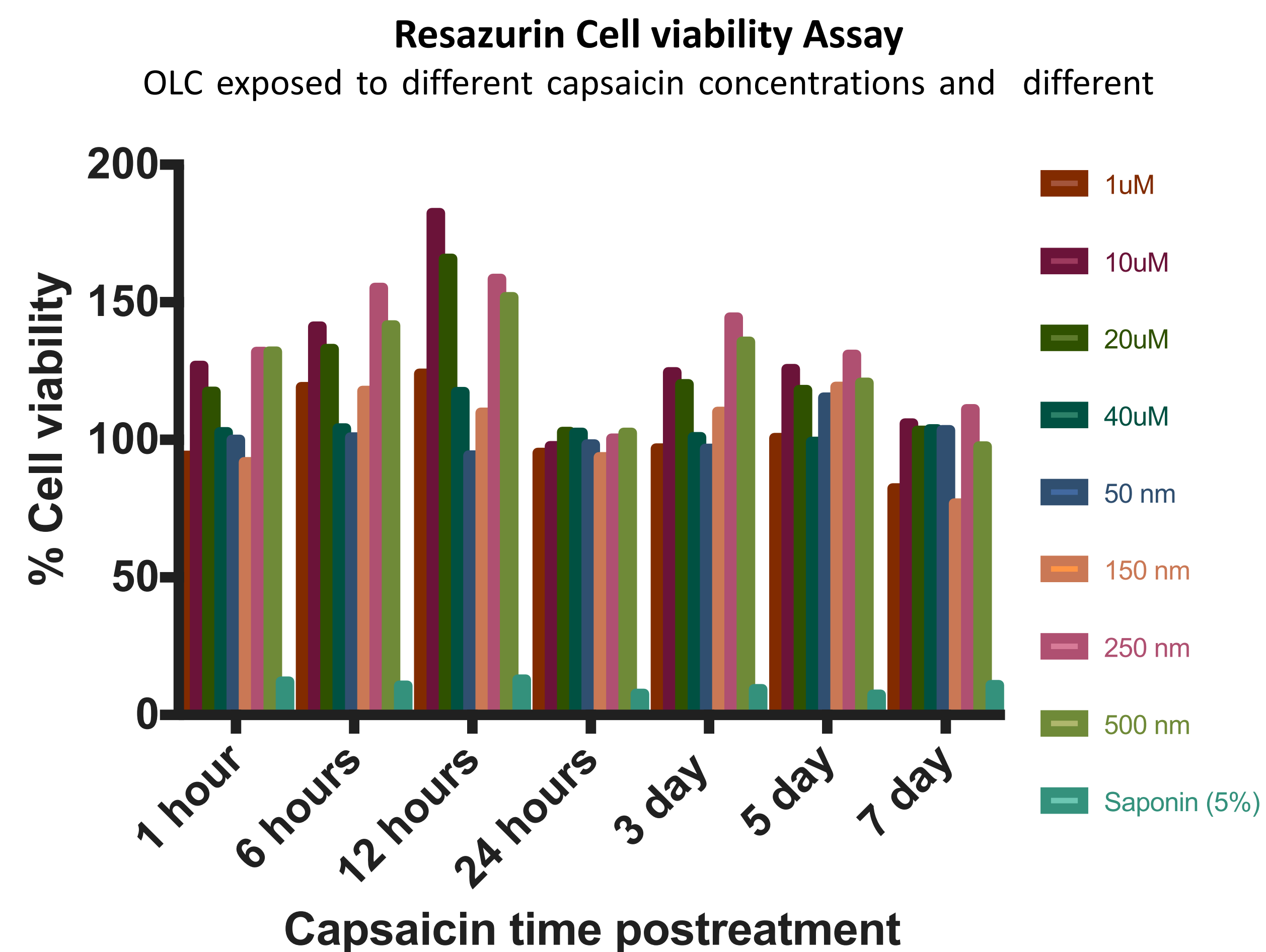
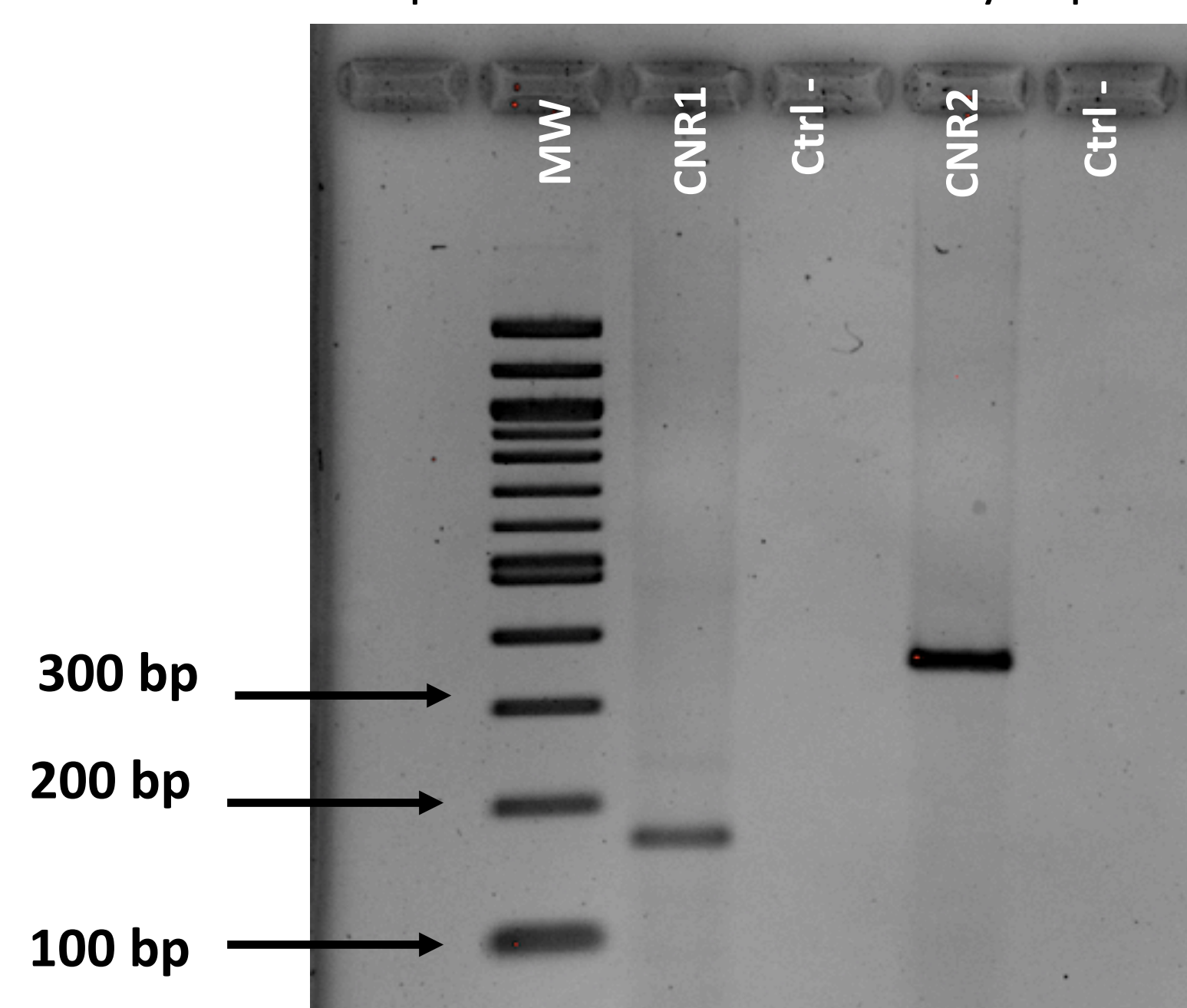
### Phenotype confirmation

OLC phenotype was confirmed by retrotranscription of Dentin Sialophospho-protein (DSPP: 201 bp), Dentin Matrix Acidic Phosphoprotein 1 (DMP-1: 128 bp)  $\beta$ -actin (120 bp) transcripts.

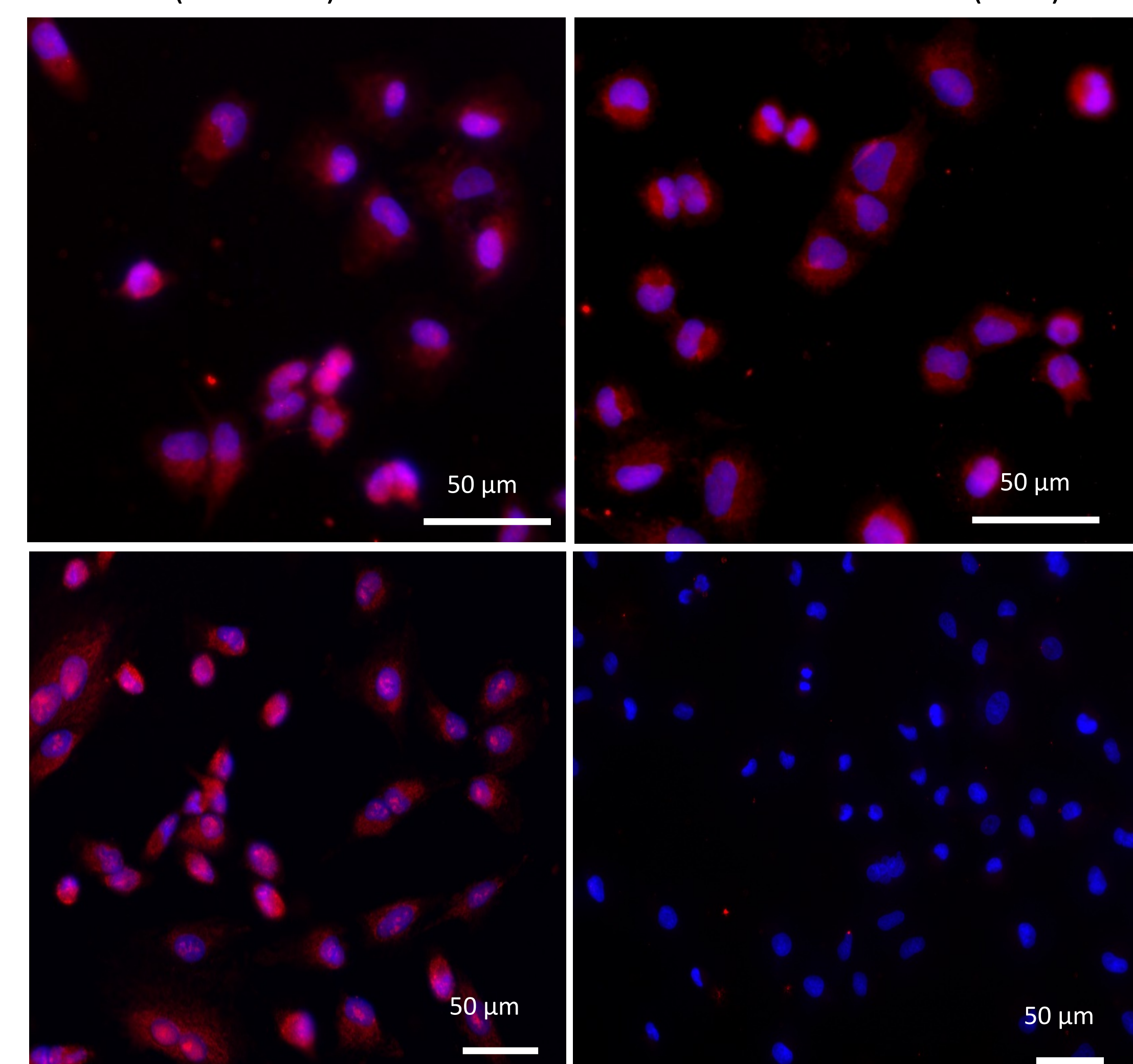


### CBR transcripts from OLC Exp-21

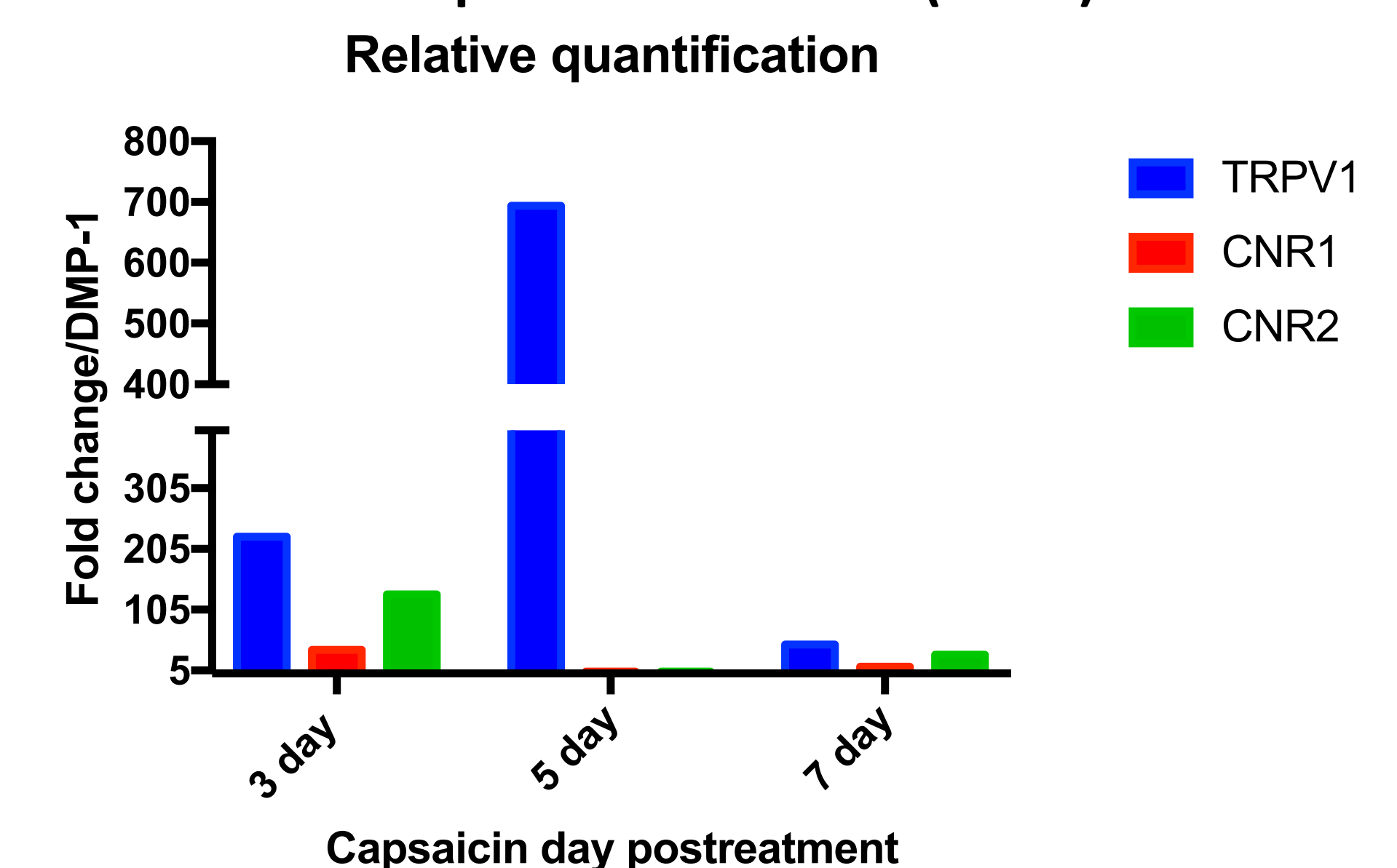
CNR1 (169 bp) and CNR2 (353 bp) mRNA transcripts were detected by qRT-PCR.



**Immunofluorescence for TRPV1, CNR1 and CNR2.** OLC Exp-21 TRPV1, CNR1 and CNR2 protein was detected by immunocytochemistry red (Alexa594). The nucleus were stained with Hoechst (blue).



Relative quantification of TRPV1, CNR1 and CNR2 after chronic capsaicin treatment ( $2^{-\Delta\Delta Ct}$ ).



## CONCLUSIONS

- OLC are a suitable model to study dental sensitivity and pain.
- OLC Exp-21 present a positive regulation for mRNA of CB1 and CB2.
- Chronic capsaicin treatment does not induce cell cytotoxicity
- TRPV1 mediated capsaicin chronic stimulation induces both auto- and CB receptors upregulation indicating a close relationship that could reinforce the positive role of cannabinoids during chronic pain and the putative anti-nociceptive activity in dental pain.

## Funding

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