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NRF2 nuclear translocation and interaction with DUSP1 regulate the osteogenic differentiation of murine mandibular osteoblasts stimulated with *Porphyromonas gingivalis* lipopolysaccharide

Key words: Periodontitis; Nuclear factor erythroid 2-related factor 2 (NRF2); Dual-specific phosphatase 1 (DUSP1); Mitogen-activated protein kinase (MAPK); Oxidative stress; Osteogenesis

Research summary

This article investigated the effects and potential molecular mechanisms of NRF2-DUSP1 interaction on osteoblast differentiation under *Pg*-LPS stimulation.

- Expression of NRF2 in alveolar bone and gingival tissues
- Expression and nuclear translocation of NRF2 under *Pg*-LPS stimulation
- NRF2 regulates osteogenic differentiation through the DUSP1 and MAPK pathway
- Interaction between NRF2 and DUSP1

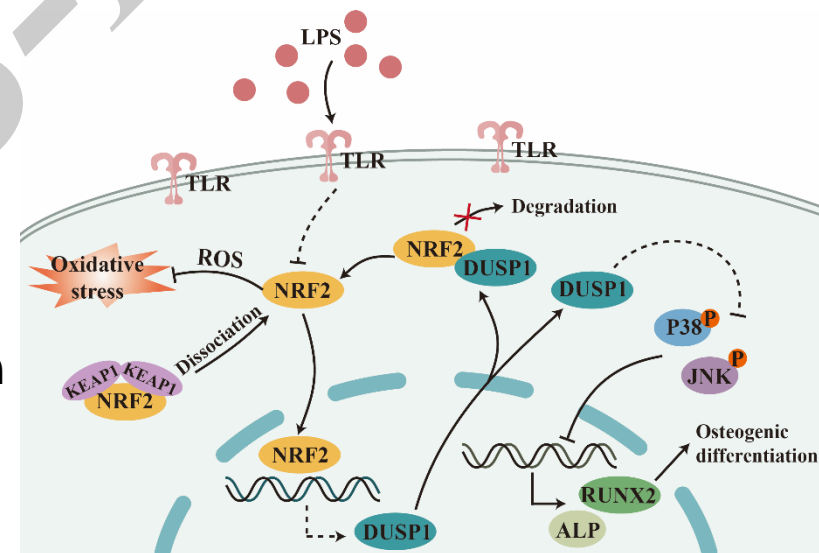


Figure 6

Innovation points

- **Detect** a decrease in NRF2 nuclear translocation under *Pg*-LPS stimulation
- **Reveal** that NRF2 influences MAPK pathway through DUSP1 and regulates osteogenic differentiation of mandibular osteoblasts
- **Confirm** the interaction between NRF2 and DUSP1 in osteoblasts

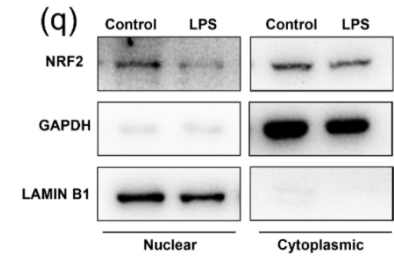
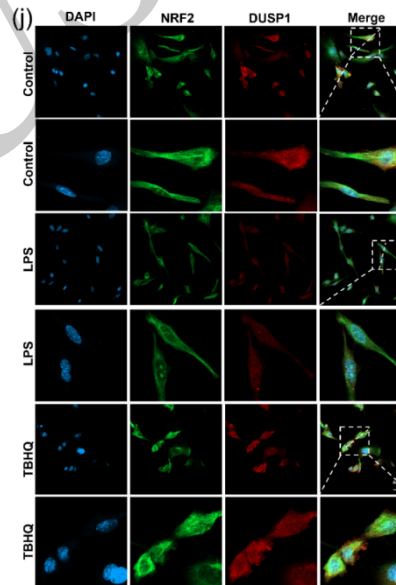
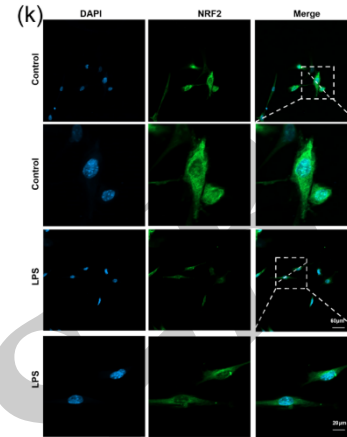


Figure 3

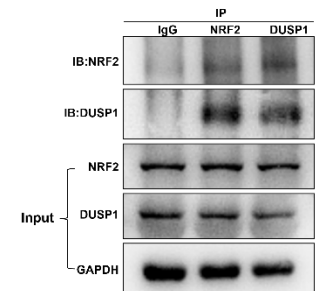
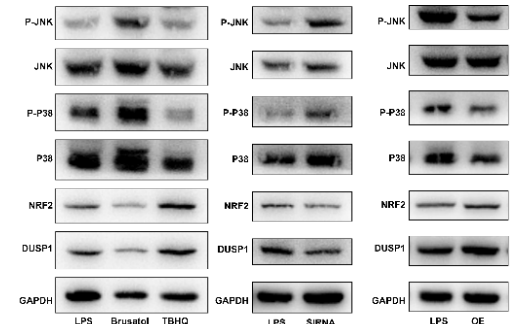


Figure 5