R-5. Nitric oxide production and inducible nitric oxide synthase expression induced by *Prevotella nigrescens* lipopolysaccharide

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Objectives:

We have examined the effects of lipopolysaccharide (LPS) from *Prevotella nigrescens*, one of the causative agents of inflammatory periodontal disease and endodontic infections, on the production of nitric oxide (NO) and expression of inducible nitric oxide synthase (iNOS) in the murine macrophage cell line RAW264.7. We also attempted to throw light on the signaling mechanisms involved in *P. nigrescens* LPS-induced NO production.

Materials and methods:

LPS from *P. nigrescens* ATCC 33563 was prepared by the standard hot phenol-water method. NO production was assayed by measuring the accumulation of nitrite in culture supernatants. Western blot analysis of iNOS and analysis of reverse transcription (RT)-PCR products were carried out.

Results:

We found that *P. nigrescens* LPS can induce iNOS expression and stimulate the release of NO without additional stimuli and demonstrated an important role of the transcription factor NF-B and microtubule polymerization in NO production. The production of NO required L-arginine and protein tyrosine kinase but not activation of protein kinase C.

Conclusions:

The present study clearly shows that *P. nigrescens* LPS fully induced iNOS expression and NO production in RAW264.7 cells in the absence of other stimuli. The ability of *P. nigrescens* LPS to promote the production of NO may be important in the pathogenesis of inflammatory periodontal disease and endodontic infections.