

Original Research

NO Swish, No Caries – Nitric oxide containing salt for control of cariogenic microbes.

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Running title – Nitric oxide and dental caries

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Abstract

Nitric oxide (NO) is a colorless, water insoluble gas. At low concentrations it has important role in physiological functions. NO being a highly reactive radical, participates in the nonspecific natural defense mechanisms of the oral cavity to prevent bacteria from overgrowing. It also helps to improve vascular supply.

AIM: To study the effects of salt containing nitric oxide (Tri sodium mono nitrogen) against caries producing microorganisms.

MATERIALS AND METHODS: Trisodium mono nitrogen salt was estimated for nitric oxide content. Common salt & Tri sodium mono nitrogen salt solution was tested for antibacterial efficacy by MIC and MBC & anti biofilm activity was determined by Time kill assay.

RESULTS: The Nitrite Content in the sample is found to be **8.32 μ M / 2mg** and the NO₂ inhibition percentage of the sample is 44.4% (for 100 μ g/ml). Antibacterial effects of the test salt showed

MIC of 50% against *S. mutans* and 60% against *L. acidophilus*. The time kill effect against biofilm organisms was 25 minutes.

CONCLUSION: The test salt (Tri sodium mono nitrogen) is able to release substantial quantities of nitric oxide, and has antibacterial efficacy against cariogenic pathogens, thus proving to be used as a potential mouth wash.

Keywords: nitrous oxide, caries, anti-cariogenic

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