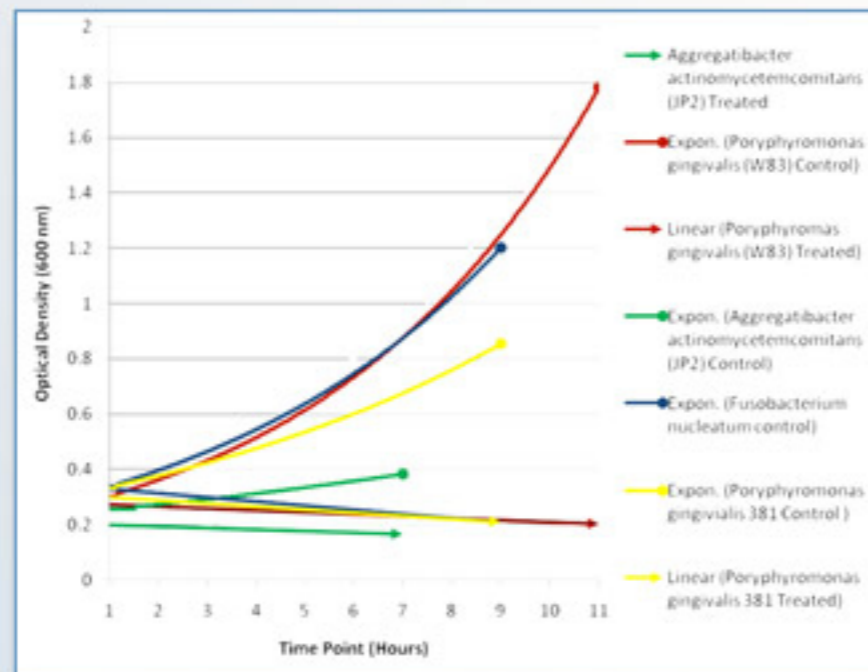


A recent study was conducted by the University of Kentucky's Center for Oral Health Research to observe the antibacterial effects of the essential oil ingredients in OraMD on oral pathogens. The following are excerpts from the full study that can be viewed here: <http://www.oramd.com/study>

Objective: to ascertain if a composite formulation of three essential oils had antimicrobial activity against a panel of Gram positive and Gram negative oral bacteria. **OraMD** is a commercially available composite of peppermint, spearmint, and almond oils and has been reported to be effective in the treatment of periodontal infection and inflammation. However, no objective studies are available to support these clinical observations.

Methods: The antibacterial activity of the essential oils was assessed in triplicate against a panel of early, intermediate, and late plaque colonizers including *S. sanguis*, *S. oralis*, *S. gordonii*, *A. naeslundii*, *F. nucleatum*, *A. actinomycetemcomitans*, and *P. gingivalis* strains 381 and W83 with *S. aureus* as a non-oral control.



This figure shows trend line analysis of each treated and untreated Gram negative bacterial growth curve. The figure also shows the length of time that each treatment was run and determined to be effective for treated samples.

Conclusions: The composite mixture of peppermint, spearmint, and almond oils **has effective antibacterial activity against Gram positive and Gram negative oral bacteria** although appears to be most effective against Gram negative species. This suggests that the beneficial clinical effects in reducing periodontal inflammation may be due to the antibacterial effects of the oils. Further studies are needed to elucidate the relative antibacterial activities of each oil independently.