Study conducted at Stony Brook University School of Dental Medicine and sponsored by Ortek Therapeutics, Inc.

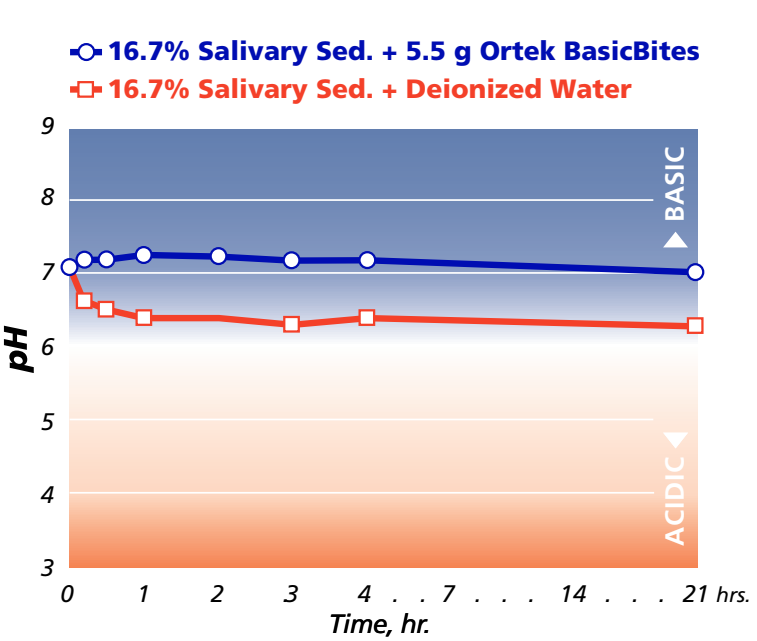
The pH response of the mixed bacteria in salivary sediment with BasicBites™ in the presence and absence of glucose generating acid

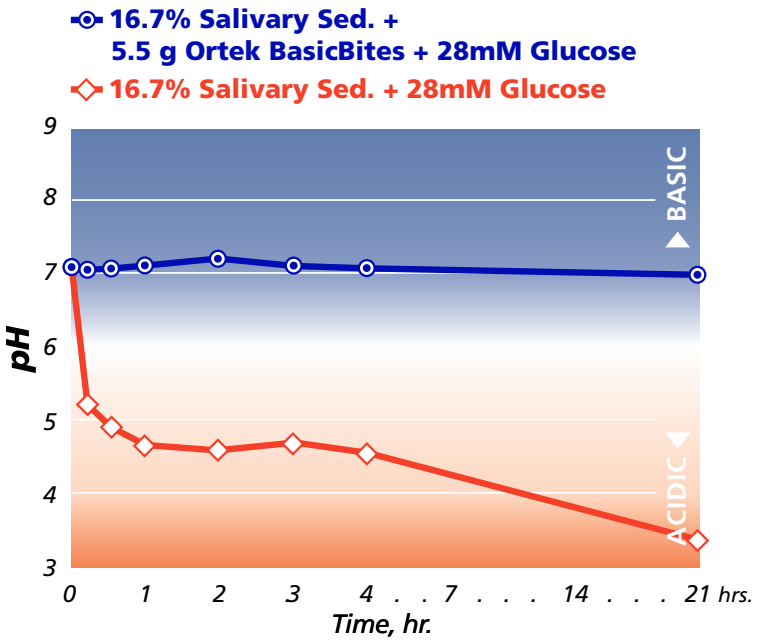
Introduction: BasicBites is a sugar-free oral care soft chew produced by Ortek Therapeutics. BasicBites contain Ortek's arginine bicarbonate/calcium carbonate technology. These saliva-based nutrients have been extensively tested for helping sustain dental plaque pH at or near neutrality following sugar consumption. At such a pH, the calcium in BasicBites can help support existing healthy tooth structure.

Objective: The present study was carried out with the well established oral bacterial salivary sediment system to evaluate the efficacy of BasicBites in counteracting the organic acids (particularly lactic) produced by the oral mixed bacteria, also known as salivary sediment, after the consumption of many acid producing carbohydrates found in the human diet.

Method: Inert paraffin wax was chewed to stimulate the flow of whole saliva and to dislodge bacteria growing on the teeth and other oral surfaces after 12 hours of fasting and abstaining from oral hygiene. The bacterial sediment was prepared from the whole saliva by centrifugation at 7,500 g. After thoroughly washing the collected salivary sediment three times with deionized water, incubation mixtures were prepared containing 16.7% (V/V) salivary sediment and BasicBites both in the presence and in the absence of 28 mM glucose. Mixtures containing 16.7% (V/V) salivary sediment with and without 28 mM glucose were also prepared as controls.

The initial pH of the mixtures was adjusted at or close to neutrality with either 1M HCl or 1M NaOH and incubated overnight in loosely capped test tubes at 37°C in a water bath. The pH was determined at 0, 0.25, 0.50, 1, 2, 3, 4, and 21 hours with a combination glass pH electrode during incubation at 37°C in a shaking water bath.





Results: BasicBites incubated with salivary sediment at 37°C showed little to no pH decrease in the presence of glucose from around neutrality throughout an incubation period at 37°C for 21 hours. In contrast, salivary sediment in the presence of glucose and without BasicBites showed an immediate pH drop to around 5.0, which then fell below pH 4.0 towards and by the end of the 21 hour incubation period.

Conclusion: Evaluation in this study demonstrated that BasicBites, in contrast to its control, is a powerful oral care product that helps maintain healthy teeth by sustaining dental plaque pH levels at or near neutrality even after the introduction of sugar.