

Letter to the editor

**With regard to our manuscripts on the commercial saliva substitute,
Oralbalance®—its formula has been changed**

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To the editor,

Previously, we published two articles in *Supportive Care in Cancer* on the *in vitro* and *in vivo* antibacterial effects of a commercial saliva substitute, Oralbalance® (Laclede, Inc., Rancho Dominguez, CA, USA; now GlaxoSmithKline, UK), which was a historic product for over 20 years and contributed to oral management for cancer patients with side effects such as xerostomia. The first report was entitled “Antimicrobial effects of the saliva substitute, Oralbalance, against microorganisms from oral mucosa in the hematopoietic cell transplantation period” (Sugiura Y et al., *Support Care Cancer*, 2008 [2]), and the other was “Total bacterial counts on oral mucosa after using a commercial saliva substitute in patients undergoing hematopoietic cell transplantation” (Sugiura Y et al., *Support Care Cancer*, 2010 [3]). Recently, however, the formula for this product has been changed. Antimicrobial enzymes have been removed, and our previous reports are no longer relevant. We would like to avoid reader misunderstanding related to our articles.

High-dose chemotherapy and total-body irradiation, which are performed as the conditioning regimen for hematopoietic cell transplantation (HCT), are associated with xerostomia. Oralbalance® has been reported to alleviate the symptoms of

post-radiotherapy xerostomia in head and neck cancer patients [1, 4]. Therefore, we postulated that this product may be effective in HCT patients. Based on our *in vitro* results, we concluded that Oralbalance® does not facilitate increases in microorganisms in the HCT period. Oral care with Oralbalance does not promote infection in patients undergoing HCT [2]. From our *in vivo* results, in neutropenic patients undergoing HCT, Oralbalance® did not increase the total counts of oral mucosal bacteria beyond the range found in healthy controls. Oral care using Oralbalance® may alleviate the symptoms induced by hyposalivation without promoting infection [3]. These antibacterial results were related to the enzymes present in the formulation. In our previous *in vitro* study, we demonstrated that the antibacterial effects of Oralbalance® were mainly due to antimicrobial enzymes of salivary origin, i.e., lactoperoxidase, lysozyme, and lactoferrin. However, these antibacterial enzymes have been removed with the recent formula change, and the product is now composed of glycerin, water, sorbitol, xylitol, carbomer, hydroxyethyl cellulose, sodium hydroxide, and propylparaben (cited from <http://www.biotene.com/products/gel>, accessed on 13 June 2014) with no enzymes. Therefore, we cannot guarantee our results with the new formula, despite its use of the same name. Further studies on the product with the new formula are required.

Conflict of Interest

The authors have no conflicts of interest related to this letter.

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