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Studies on Infinix™ Antimicrobial Dental Composites presented at IADR

- Studies report long-term antimicrobial effect in-situ of the products' containing Nobio's QASi technology and functional performance -

KADIMA, ISRAEL (June 7, 2019) – Nobio Ltd., developer of QASi, an embedded, long-acting antimicrobial particle technology, today announced two oral presentations at the annual meeting of the International Association for Dental Research (IADR), held in Vancouver, CA, June 19-22. The presentations reported data from studies which evaluated the antimicrobial and functional performance of the new Infinix™ advanced dental restoratives from Nobio, containing its novel QASi technology:

1. A presentation by Dr. Michal Dekel Steinkeller, from the School of Dental Medicine, Tel-Aviv University, reported data on long-term antibacterial activity of Infinix composite from a 1-year, split-mouth (self-control) clinical pilot study. In this study, Nobio's Flowable Composite samples were attached to a pre-molar in 3 healthy volunteers, and control composite samples (Filtek, 3M ESPE) were attached to their contralateral pre-molars. Fluorescent staining (Syto9) differentiating live vs dead bacteria in plaque removed from the composite surfaces showed that the rate of live bacteria on plaque removed from Infinix composite was reduced by 47% and 50% from that in the plaque on the control composite at 6 and 12 months, respectively.

2. A presentation by Prof. Ervin Weiss, Dean, School of Dental Medicine, Tel-Aviv University and Chief Technology Officer at Nobio, reported on the physical performance testing of Infinix bonding and three resin-based composites (Universal Composite, Bulk Fill and Flowable), with Nobio's QASi antimicrobial particle-technology. Infinix composites showed similar flexural and compressive strengths, radio-opacity and degree of monomer-conversion compared to popular established brands. Similarly, the Infinix universal bond (6th generation, prime and bond) showed shear bond strength comparable to another 6th generation bonding system (Clearfil SE Protect, Kurary) and improved performance versus single-bottle systems tested.

“Antimicrobial composite restoratives have been sought for many years, to combat the primary reason for restoration failure and eventually tooth loss,” said Dr. Dekel Steinkeller, the principal investigator of the first study. “Our data indicates that the new composites from Nobio may have the potential to prevent recurrence of tooth decay, thereby potentially extending the restoration’s life and preserving our patient’s natural teeth.”

“Adding antimicrobial technology into dental composites is a major improvement, but preferably would not compromise the functional characteristics of these complex materials”, commented Prof. Weiss, lead investigator of the second study. “We were very pleased to find that the Infinix formulations had similar functional performance as the market leading materials, and that the antimicrobial technology did not impact any of their mechanical or physical properties.”

More than 200 million tooth restorations are performed each year in the U.S. only, most of them to replace existing restorations that fail due to bacteria that penetrate the tooth-restoration interface (e.g. the micro-gap between the restoration and tooth, a common site of recurrent decay). The estimated annual cost of replacement dentistry is over $5 billion in the U.S. alone. Recurrent decay may eventually lead to tooth loss.

QASi particles (quaternary ammonium silica-dioxide) are a member of Nobio’s family of antimicrobial particles. These particles combine a high concentration of antimicrobial molecules which are covalently bound to a solid core, forming an insoluble, potent, long-lasting antimicrobial structure. The antimicrobial effect occurs only when bacteria contact the material containing these particles, offering significant advantages versus traditional approaches relying on the release of antimicrobial molecules, which eventually deplete and may affect also normal flora. Nobio particles have a long-term effect because they are retained in the filling material following polymerization and are insoluble. Long-term antimicrobial protection and a stable molecular structure are especially important in dental restorations which are intended to remain in the oral environment for decades.

About Nobio

Nobio Ltd. is an advanced materials science company offering novel antimicrobial products and solutions. The health and economic burden of bacteria is enormous, and in three decades, resistant bacteria may kill more people than all cancers combined. Bacteria cause infections mostly by colonizing and forming biofilms on surfaces of almost any product or solid material. Nobio’s breakthrough particle-based technology transforms common materials to antimicrobial, keeping them free of bacterial colonization and biofilm, indefinitely. Nobio is now focused on

dental applications, where bacteria are the leading cause for failure of most treatments, and medical devices, which are linked with most healthcare associated infections, one of the 10 top causes of deaths in developed countries. For more information, visit www.nobio.com.

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