

**intertek**

Total Quality. Assured.

# ***IN VITRO*** **RESEARCH** **SERVICES**

20+ years of experience delivering *in vitro* oral care product studies





# In Vitro Research Services

Ensuring the safety and efficacy of your oral care products is critical to success. In an era where financial prudence is a necessity, well-designed *in vitro* testing offers a more rapid and cost-effective route to obtaining the data you need to support marketing and safety claims.

We understand the need to have a responsive, flexible testing resource, with experienced project management, to meet your critical milestones and deliver robust data every time. Our *in vitro* team has been a trusted partner for manufacturers of oral care products for over 20 years and is now a leading service provider in the oral care sector.

*In vivo* clinical studies for oral care products are the gold standard in terms of product assessment. However, they can be complex, time-consuming, and expensive. Instead, a well-designed *in vitro* test can often yield the required data much more quickly and at lower cost.

- Experts in the *in vitro* assessment of oral care products
- 20+ years of experience
- Licenced by the Human Tissue Authority
- We are trusted partner of leading oral care product manufacturers

With over 20 years of experience in performing *in vitro* oral care studies, our scientists deliver Total Quality Assurance for our customers, enabling them to power ahead safely. Our *in vitro* services cover the following areas:

### Hard Tissue Preparation

Intertek can assist you with your own laboratory studies by providing acellular samples of enamel or dentine. Our hard tissue samples can be prepared from human (subject to regulatory requirements) or bovine teeth. We have access to a wide range of cutting and polishing equipment to prepare our samples to various sizes and specifications.

### Stain Prevention / Stain Removal

We offer bespoke stain build-up protocols, using human or artificial saliva, product treatments and exposure of the enamel samples to various staining agents. Our *in vitro* test enables manufacturers to assess the ability of oral care products or active ingredients to prevent stains from being deposited onto the surfaces of the samples. Our bespoke staining rig enables enamel samples to be stained with various staining agents. We use various in-house models to evaluate the ability of oral care products or active ingredients to remove surface and intrinsic stains from samples.

The ability of an oral care product to prevent or remove staining is assessed with a calibrated spectrometer to ensure greater accuracy.

### Enamel Repair and Protection

Tooth damage is a major concern for consumers. We use a variety of in-house protocols and use changes in enamel surface microhardness to evaluate the ability of oral care products or active ingredients to repair and protect artificial enamel lesions.

Our 3D surface profilometer can assess whether oral care products or active ingredients can help to prevent enamel or dentine erosion.

### Dentine Occlusion

The occlusion of dentine tubules has been linked to a reduction in dental sensitivity. We use hydraulic conductance analysis or scanning electron microscopy to assess how effectively products or active ingredients can block dentinal tubules. Our preparation methods enable us to open dentine tubules artificially and create an acellular substrate which can be used to evaluate the occlusion efficacy of the test products.

### Anti-plaque and Anti-calculus

The accumulation of dental plaque and calculus can be associated with poor dental health. Our *in vitro* method uses human saliva as the test substrate to evaluate the ability of oral care products or active ingredients to prevent dental plaque from accumulating onto the surfaces of glass rods. The plaque biofilms can be quantified by dry mass or total viable bacterial counts.

We have an in-house method, using dental



plaque seeded from human saliva, to assess the ability of oral care products or active ingredients to buffer the pH of dental plaque and prevent the pH from decreasing to pH levels associated with enamel damage during a sucrose challenge.

### Relative Enamel or Dentine Abrasivity (RDA)

We use 3D surface profilometry to compare the abrasivity of toothpaste or toothpowder formulations against an industry standard reference abrasive. The ISO standard enables manufacturers to assess the safety components of the abrasive components of a formulation under mechanical brushing conditions.

### Erosive Capacity of Tooth Bleaching Products

We can compare the propensity of tooth-bleaching products against an ISO reference standard to ensure that the erosive capacity of the formulations falls with the permitted tolerance of the ISO standard.

### Interproximal Cleaning

We offer an interproximal cleaning test to evaluate the ability of oral product devices (toothbrushes, interdental brushes, flosses, and tapes) to clean the interproximal spaces of tooth models.

### Denture Cleaning

We can design bespoke models to test the efficacy of denture -cleaning tablets removing built-up stain and dental plaque deposits from the surfaces of common denture materials.

### Bioanalytical R&D Support

Intertek can provide analytical support to partner CROs running oral care clinical studies including analytical support for the following:


- *In situ* SMH studies
- Oral Malodour studies (Oral Chroma)
- Fluoride, potassium, or calcium salivary clearance studies

Find us online  
Scan Here





---

 Intertek CRS  
Unit A4 Elm House  
Oaklands Office Park  
Hooton, UK  
CH667NZ

 +44 151 347 4810

 [intertek.com/oral-care](https://www.intertek.com/oral-care)

 [oral-care@intertek.com](mailto:oral-care@intertek.com)