Robust Inactivation of COVID-19 samples using Isohelix Collection Kits

In the wake of the COVID-19 global pandemic, the need for safe, reliable collection, viral inactivation, and transport of potentially infectious test samples is paramount. While there are a range of stabilising solutions available for saliva and other sample types, some do not completely inactivate virus present, while others use hazardous guanidinium salts for inactivation making handling and clean-up difficult for both patients and professionals[1].

In contrast, Isohelix saliva collectors utilize a safe, guanidine-free stabilisation solution that offers reliable inactivation of COVID-19 that may be present in samples, as well as room-temperature stabilisation of saliva as it is transported from patient to lab storage, which has been confirmed in third-party literature.

A study in 2021 undertaken by Public Health England evaluated the inactivating properties of Isohelix GeneFix GFX & BuccalFix BFX solutions[2,3]. In brief, quantities of infectious COVID-19 virus were incubated with each of the buffers for 10 minutes, after which the $TCID_{50}$/ml of each was calculated to determine their virucidal effect. It was found that treatment with the solutions resulted on average in a 5.0 log_{10} (≥99.999%) reduction in viral titre compared to untreated controls, beneath the test's limit of detection, demonstrating strong inactivation of COVID-19 (Figure 1).

In addition, a similar study published in 2022[4] investigated the virucidal efficacy of GeneFix RFX-01 collectors using a comparable method and found up to a 9.0 log_{10} reduction in viral copy number (as determined by rt-qPCR analysis), again supporting the robust inactivating properties of Isohelix stabilisation buffers.

These data demonstrate the ability of Isohelix's collection and preservation solutions to ensure efficient inactivation of potentially infectious samples, providing increased safety for both patients and health professionals during collection, handling, storage, and processing.

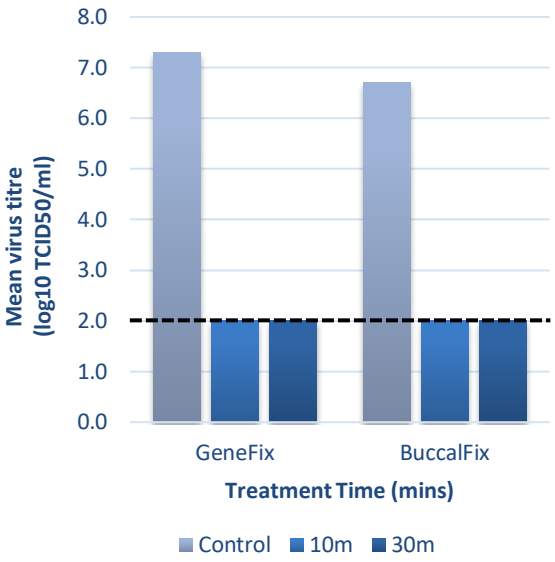

Figure 1: Viral Titre ($TCID_{50}$) reductions of COVID-19 treated using GeneFix & BuccalFix stabilisation solutions, compared to untreated controls[2, 3].

Note: It is the sole responsibility of healthcare professionals and researchers to fully evaluate and risk-assess suitability of collection & inactivation methods for their own testing workflows.

References:

1. U.S. Food and Drug Administration. Transport Media Safety Risk—Use Compatible Transport Media with SARS-CoV-2 Tests that Use Bleach—Letter to Clinical Laboratory Staff and Health Care Providers. https://www.fda.gov/medical-devices/letters-health-care-providers/transport-media-safety-risk-use-compatible-transport-media-sars-cov-2-tests-use-bleach-letter (2020)
2. Public Health England. SARS-CoV-2 Inactivation Testing, Isohelix GeneFix™ Buffer. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/937435/HCM-CoV2-036v3_GeneFix_Buffer_TCF__1_.pdf
3. Public Health England. SARS-CoV-2 Inactivation Testing, Isohelix BuccalFix Buffer. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/937438/HCM-CoV2-035-v3_BuccalFiX_Buffer_TCF__2_.pdf
4. Hardt, Melina, et al. "Pre-analytical sample stabilization by different sampling devices for PCR-based COVID-19 diagnostics." New biotechnology 70 (2022): 19-27. https://doi.org/10.1016/j.nbt.2022.04.001