

GeneFiX Saliva DNA, RNA & Microbiome

www.isohelex.com



IsohelexTM
DNA/RNA Sampling and Purification

GeneFiX Saliva DNA/RNA Collection and Isolation

The GeneFiX™ range of DNA/RNA products have been designed to simply maximize the yields and purity of DNA/RNA collected and stabilized from Saliva. Isohelix has over the years built a leading reputation for designing and manufacturing DNA/RNA sampling and purification products, built around their unique High Yielding DNA Buccal Swabs together with their associated kits to stabilise and isolate your DNA/RNA. The new GeneFiX™ products use many shared chemistries and knowledge designs from our existing swab DNA isolation kits, and where technically appropriate these have been re-configured or method developed to optimize their use solely on saliva stabilized either from the GeneFiX™ collectors or other saliva collection devices. The resulting DNA/RNA collected through GeneFiX™, as with the Isohelix Buccal DNA, can be used in the most demanding downstream processes.

DNA Saliva Collectors

GeneFiX™ is an easy to use and economical DNA saliva collection device, designed specifically to store and stabilise long term DNA for 1 or 2 ml saliva samples, and now additionally our new High Capacity collector for 3ml samples. The collection tube is pre-filled with a fully tested and chemically optimized stabilization buffer. The simple screw-on funnel enables the saliva sample to be delivered directly and quickly into the buffer.

Clear, legible markings on the GeneFiX™ collection tubes indicate the correct volume of Saliva to be delivered, prior to removing and sealing the tube, the unique funnel design prevents spillages and flow back even when accidentally knocked over. The collection tubes will withstand defined physical pressures that have been specified for leak proof sample transport and are designed for either manual or more automated application with printed bar codes and caps options being suitable for auto de-capping machines.

GeneFiX™ Xtra DNA Collect

The 'Xtra DNA Collect' is designed to collect 3ml of Saliva thus improving yields over the standard GeneFiX and 1ml and 2 ml collectors. It is packaged in the same tube yet filled with 1ml of a higher concentration buffer to allow for extra dilution of the saliva. It has most of the benefits of our standard collector and will appeal to scientists requiring maximal yields even in cases where patient sampling times may be extended. Currently in house and ongoing studies show full 2 year stabilization but we feel confident this will be extended over time.

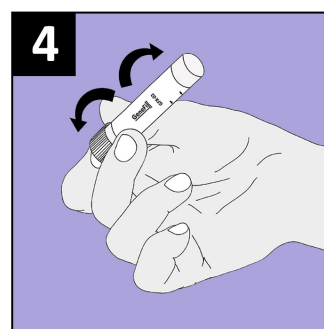
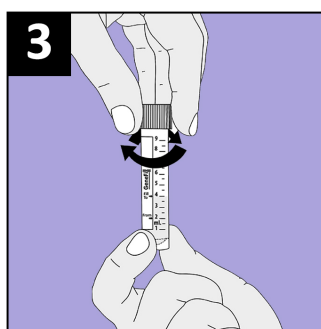
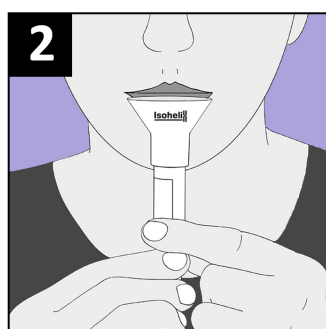
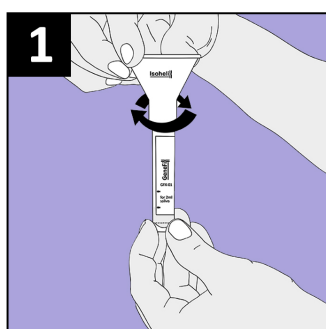
GeneFiX™ Assisted DNA Saliva Collectors are especially useful where donors find it difficult to deliver saliva, such as children. The assisted kit contains the standard GeneFiX™ components and 2 absorbent swabs to assist the saliva collection, the swab is simply squeezed against the inside of funnel to release the saliva into the 1ml of stabilization buffer. Expected DNA yields are on average around 25µg and would be purified with exactly the same format and results as the standard GeneFiX™ collectors.



Key Benefits

- ✓ Easy to Use with Pre-Filled Stabilization buffer
- ✓ Unique funnel design prevents buffer spillages
- ✓ DNA yields maintained for 5 years+ Room Temp
- ✓ Total DNA yields in excess of 100µg from 2ml saliva
- ✓ Seamlessly integrates with GeneFiX™ Isolation kits
- ✓ Saliva-Prep2 kit delivers ultra low RNA contamination
- ✓ The devices are compatible with Manual and HT kits
- ✓ Fully tested on most downstream applications
- ✓ Specified 95kPa for leak proof mailing and return
- ✓ Widely supported with Technical DNA data

Suitable for Covid-19 Testing



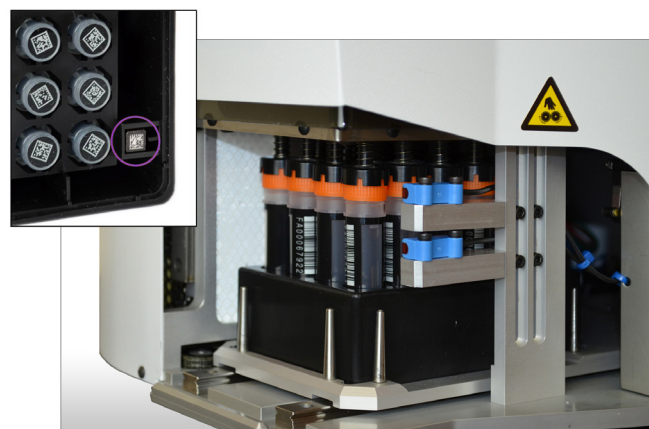
GeneFix™ Saliva - Manual or Automated

GeneFix Saliva collectors have been designed to maximize purity without compromising on yields, the total DNA yields when compared against other saliva collectors compare extremely favourably and in many cases show higher yield data (see graph). Another significant benefit of the GeneFix stabilization buffer is that it will not only integrate seamlessly into our own various chemistries but also directly into most other standard and commercial chemistries at their Proteinase K incubation step. The Isohelix In-house technical team can advise on integration with automated DNA extraction systems.

As an automated collector we have several tube options that will integrate and fit many robotic machines using a wide range of chemistries. The tube choices offer 1-D and 2-D bar coding with common code functions and sealing caps that can be auto de-capped, and designed within available industry standard racking systems.

The New Saliva-Mag DNA Isolation kit is suitable for use with openly programmable DNA Isolation and liquid handling systems.

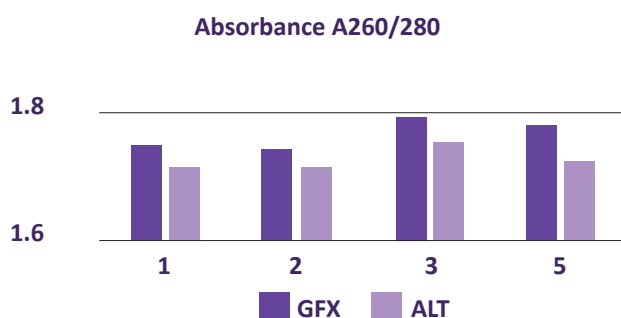
GeneFix™ is High Throughput compatible



GeneFix™ High Throughput tubes have 1D and 2D barcodes and are suitable for automated decapping

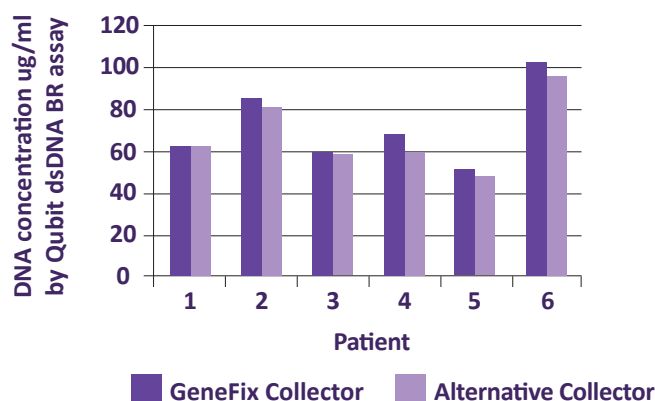
GeneFix™ Offers Superior Performance

GeneFix DNA Collectors fully optimized chemistry offers improvements over alternative collectors in both purity and yield, through a range of DNA purification methodologies



GeneFix™ High-Yield Saliva DNA

Comparison of DNA yields from GeneFix and an alternative saliva collector



Product Information

GFX-01 GeneFix™ Saliva DNA Collectors for 1ml Saliva

GFX-02 GeneFix™ Saliva DNA Collectors for 2ml Saliva

GFX-03 GeneFix™ Saliva Xtra DNA Collectors for 3ml Saliva

GFXA-01 GeneFix™ Assisted Saliva DNA Collectors for 1ml Saliva

Available in packs of 2, 12 or 50 units

Download GeneFix™ Technical Application Notes from www.isohelix.com

Performance of Saliva DNA, stabilized in Isohelix GeneFix™ collectors, and isolated by Chemagen or Isohelix GeneFix™ Saliva DNA kits, on MLPA assays.

Saliva DNA isolation from GeneFix™ Saliva Collectors using GeneFix™ Saliva-Prep DNA Kit Cat. No: GSP-48/GSP-12/GSP-2.

Performance of Saliva DNA collected in GeneFix™ Saliva Collectors and isolated with GeneFix Saliva DNA kits, genotyped on the Illumina HumanOmniExpress – 12 v1.1 BeadChip.

aCGH Studies using GeneFix™ Collected and Purified saliva DNA.

GeneFix Saliva RNA Collection and Stabilization

The GeneFix™ range of RNA products have been designed to maximize the yields and purity of nucleic acids collected and stabilized from Saliva. Isohelix has over the years built a leading reputation for the design and manufacturing of DNA sampling and purification products, and the same expertise has been used to develop their RNA Saliva Collection Devices.

RNA Saliva Collectors and Assisted Collectors

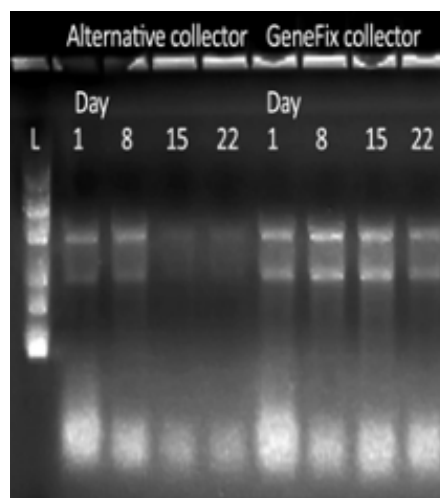
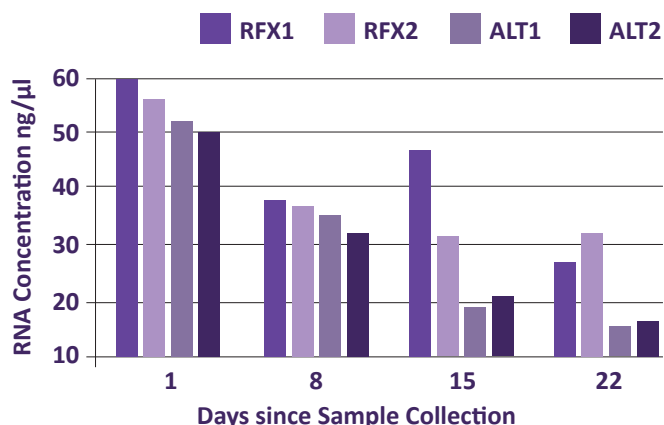
GeneFix™ is a new easy to use and economical RNA saliva collection device, designed specifically to store and stabilize RNA from 1ml Saliva samples. The collection tube is pre-filled with a fully tested and Non Toxic stabilization buffer. The simple screw-on funnel enables the saliva sample to be delivered directly and quickly into the buffer, and requires no specialist supervision, making remote sampling possible. Clear, legible markings on the GeneFix™ collection tubes indicate the correct volume of Saliva to be delivered, the design patented funnel prevents spillages and flow back even when knocked over. The collection tubes will withstand defined physical pressures that have been specified to leak proof sample transport.

The tube is compatible with most automated extraction platforms, and the collector is supplied with Proteinase K, to allow RNA isolation using most kits.

GeneFix™ Assisted RNA Saliva Collectors

Assisted collectors are especially useful where donors find it difficult to deliver saliva, such as children. The assisted kits contain the standard GeneFix components and 2 absorbent swabs to assist the saliva collection, the swab is simply squeezed against the inside of funnel to release the saliva into the 1ml of stabilization buffer.

RNA Concentration in GeneFix™ and Alternative Collectors over 22 Days



Agarose Gel showing RNA from GeneFix™ and Alternative Collectors over 22 days



Key Benefits

- ✓ High RNA Yields and Purity
- ✓ RNA Stabilized for over 14 days at Room Temperature
- ✓ Stabilizes miRNA, mRNA and DNA
- ✓ Suitable for Microbiome applications
- ✓ Assisted Collector available
- ✓ Integrates with a wide range of RNA Isolation kits
- ✓ Easy to Use with Pre-Filled Stabilization buffer
- ✓ Unique funnel design prevents buffer spillages
- ✓ Specified 95kPa for leak proof mailing and return

Product information

RFX-01 GeneFix Saliva RNA Collection devices in 2, 12 and 50 unit for 1ml of saliva.

Each GeneFix™ device includes a collection tube with stabilization buffer, optional swabs, funnel, Proteinase K and instructions. See back page for ordering information.

GeneFiX Saliva Microbiome DNA Collection

Microbial studies have indicated that the balance of flora in many human systems, including saliva, plaques, skin and gut, are a key indicator of health.

Traditional methods of collection and storage of microbiome samples often include freezing, that always presents well known logistical challenges in cold chain transport and storage or can often complicate technical viability in the collection process.

Isohelix has addressed these issues with the new GeneFiX™ Saliva Microbiome DNA Collection device.

The devices are perfect for remote or at-home testing, with anti-spill funnel, non-hazardous buffer and simple operation. The robust sample tubes are fully transport tested to 95KPa to allow mailing and storage.

Microbial DNA is perfectly preserved at room temperature in the pre-filled buffer for at least 1 year. The stabilization is instant, and the buffer prevents bacterial growth, so the sample accurately reflects the oral microbiome at the moment of sampling. The devices and buffer are free from any trace human or bacterial DNA, so researchers can be confident in the accuracy of their results.

The sample tube is compatible with many high throughput sample processing systems and includes a unique 1D bar and human readable code to enable accurate sample tracking.

Microbiome DNA Isolation

For the optimum microbiotic DNA, the Saliva Microbiome DNA collector should be used with the Saliva-Prep2 DNA isolation kit. The Saliva-Prep 2 kit is efficient, easy and quick, yet produces extremely high yields of microbial DNA at levels more than twice the yield of other commonly available kits.

The DNA isolated using Saliva-Prep2 is intact and readily amplifiable, with high purity, suitable for all downstream analyses.

Saliva-Prep2 allows for repetitive analyses, by processing variable volumes, allowing for partial samples to be processed, preserving the remainder for future testing.

Product Information

MFx-01 GeneFiX™ Saliva Microbiome DNA Collection device for 1ml saliva sample.

Pack of 2, 12 or 50 devices

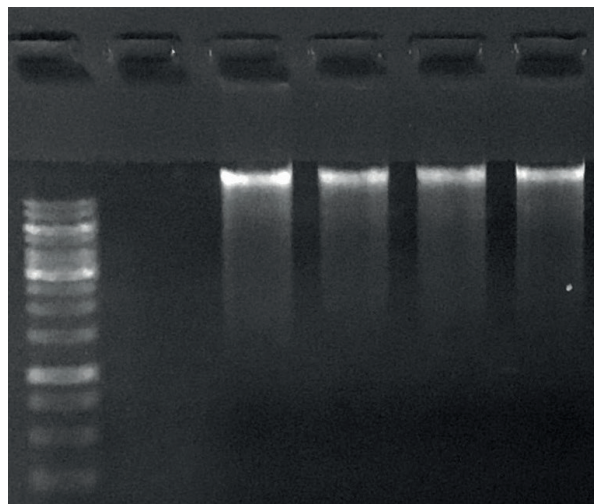


Saliva Microbiome Collection Device

- ✓ Ambient Storage – no expensive storage or transport
- ✓ Instant Stabilization – provides a snapshot of the saliva microbiome
- ✓ No trace DNA contamination – reliable results
- ✓ Non Toxic - easy to use
- ✓ Compatible to most downstream chemistries

Saliva-Prep DNA Isolation Kit

- ✓ High yields of quality, undegraded DNA for downstream analysis
- ✓ Complete Kit – No additional reagents required
- ✓ Variable Volume – flexibility for repeat sampling



Agarose Gel analyzed by electrophoresis Bacterial DNA isolated from GeneFiX Saliva Microbiome DNA collector using Saliva-Prep-2 shows quality DNA with no degradation

GeneFix™ Saliva DNA Isolation Kits

From the very outset we developed a number of different isolation kits based around alternative chemistries, to optimize the key requirements of purity, yield and ease of use. Each individual isolation method has been specifically designed to maximize one key outcome that is of most importance to a particular application or researcher. By offering a number of choices, this allows the users to select a kit that is most suitable to their downstream process which in turn improves the results that they can expect from their application or test.

New Advanced Saliva-Prep DNA Isolation Kits

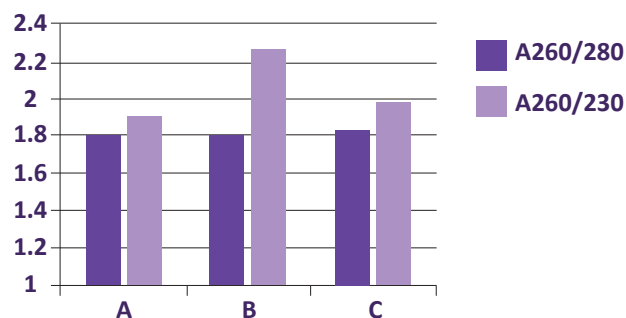
The New Advanced GeneFix™ Saliva-Prep DNA Isolation kits have been designed to provide significant technical improvements for purity over our original Saliva Prep Kits. The Saliva Prep is designed for use with Stabilized Saliva collected primarily from GeneFix™ Collectors, as well as from many other saliva collection devices. The isolation protocol itself is based around a new design precipitation chemistry that has a number of additional key advantages: **being rapid, very easy to use, and with high yields and most importantly producing extremely high purities.**

It also has other significant advantages, being Ethanol and Solvent free, and virtually zero co-precipitation of RNA with the DNA, thereby resulting in ultra low RNA contamination in the final DNA samples. The processing choices are widely flexible to allow for varying volumes from a few 100µl up to 2ml of saliva and even larger if required

The DNA yields are exceptional and greatly in excess of 100µg with typical A260/280 values of around 1.8 and with A260/230 typically in also excess of 1.8. In our experiments these ratios compare extremely favourably against similar, and other alternative precipitation type chemistries.

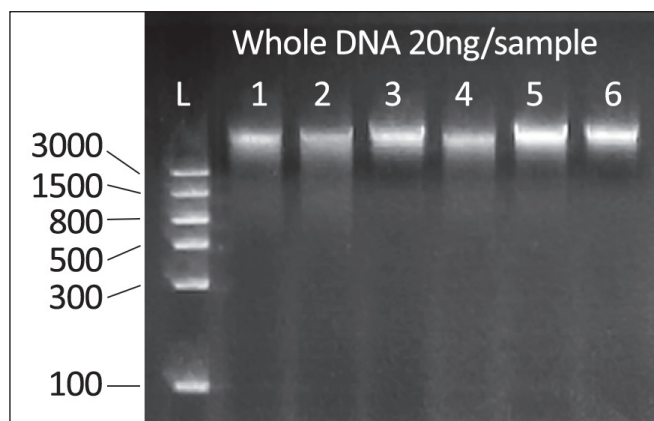
Saliva-Prep's practical advantages make it the method of choice for a rapid and efficient isolation method that is easy to use and offers outstanding yields.

Nanodrop data from GSPN purified saliva DNA showing high purity DNA



Sample	Qubit dsDNA BR Sample Concentration	Nanodrop	
		A260/280	A280/230
A	67.8 µg/ml	1.79	1.89
B	184 µg/ml	1.80	2.25
C	125 µg/ml	1.83	1.97

Agarose gel of GSPN purified saliva DNA showing intact, clean high molecular weight DNA with minimal RNA contamination



Ordering information

GSPN-12 to process 12 x 2ml or 24 x 1 ml of stabilized Saliva

GSPN-50 to process 50 x 2ml or 100 x 1ml of stabilized Saliva



Features

- ✓ High Yields > 100µg DNA from 2ml of raw Saliva
- ✓ Economic , easy to use and extremely robust
- ✓ High Purity suitable for virtually all applications
- ✓ Fully Optimized for use with Stabilized Saliva
- ✓ No Solvents, Columns or Filtration requirements
- ✓ Delivers virtually RNA-free samples
- ✓ Rapid Handling Times
- ✓ Easily adjustable for varying sample volumes

NEW Saliva-Mag DNA Isolation kit

A fast and reliable method for medium to high throughput purification of DNA samples, achieving a fast and efficient methodology, with the maximum purity and yield required for demanding downstream applications.

Variable volumes can be processed, from a full GeneFiX™ 2ml saliva collector, to a 0.5ml saliva aliquot, allowing for flexibility and repeated sampling. For High Throughput automated processing, the Saliva-Mag kit is suitable for use with most openly programmable automated DNA Isolation and liquid handling systems fitted with magnetic racks and heat blocks.



Isohelix Xtreme DNA Kit

Cat. No: XME-5/50

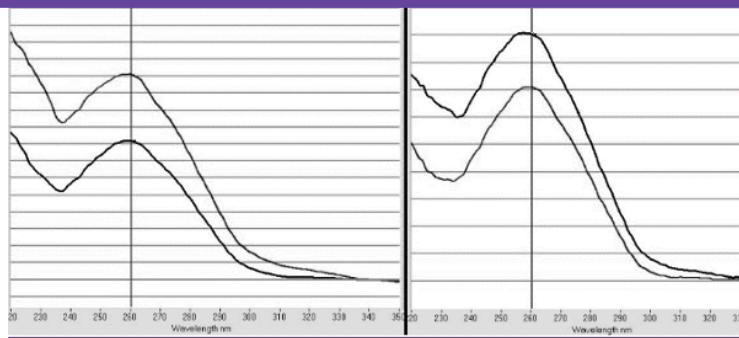
The Isohelix Xtreme DNA kit is a silica membrane based spin column DNA purification kit designed to isolate highly purified, high molecular weight genomic DNA from buccal swabs or saliva, with minimal losses. The DNA is suitable for use in even the most demanding downstream applications.



New DNA CleanUp Kit (DCU)

The DNA CleanUp kit is designed as a valuable secondary isolation step, to specifically improve the purification profile of DNA from saliva and buccal samples that might have been contaminated due to poor sampling techniques or non-optimized DNA Isolation kits.

Right: Nanodrop scan before and after DCU Clean-up, showing improved sample purity



DNA & RNA Collection Accessories

Transport packs (Cat. No: TP-50)

Including outer printed bag with absorbent pads for shipping buccal swabs or saliva samples, and separate document pocket

Mailing Box (Cat. No: MB-50)

Flat-Packed mailing box for GeneFiX™ kits

Special Formats and Customization

Isohelix is able to offer special formats tailored to your application, for example:

- Own Branded Label / Instructions*
- Barcoding to sample tubes, additional barcode labels
- Large Letter sized packs*¹

*minimum order applies *¹ Applies to UK postal service



GeneFix™ Ordering Information

Cat No	Description
GeneFix™ Saliva Collectors	
GFX-01	GFX DNA/RNA Saliva Collectors to collect 1ml saliva samples: Funnel, Tube Pre-filled with Stabilization buffer, Cap and Instructions. Pk 2, 12 or 50
GFX-02	GFX DNA/RNA Saliva Collectors to collect 2ml saliva samples: Funnel, Tube Pre-filled with Stabilization buffer, Cap and Instructions. Pk 2, 12 or 50
GFX-03	GFX DNA/RNA Saliva Collectors to collect 3ml saliva samples: Funnel, Tube Pre-filled with Stabilization buffer, Cap and Instructions. Pk 2, 12 or 50
GFXA-01	GFXA DNA/RNA Assisted Saliva Collectors: Funnel, Tube Pre-filled with Stabilization buffer, Cap, 2 swabs and Instructions. Pk 2, 12 or 50
FDX-01, FDX-02	FDX DNA/RNA Saliva Collectors: Funnel, Tube Pre-filled with Stabilization buffer, Cap and instructions. Pk 2, 12 or 48
FDXA-01	FDXA DNA/RNA Assisted Saliva Collectors: Funnel, Tube Pre-filled with Stabilization buffer, Cap, 2 swabs and Instructions. Pk 2, 12 or 48
RFX-01	RFX DNA/RNA Saliva Collectors to collect 1ml saliva samples: Funnel, Tube Pre-filled with Stabilization buffer, Cap, Instructions and precipitation reagents. Pk 2, 12 or 50
RFXA-01	RFXA RNA Assisted Saliva Collectors to collect 1ml saliva samples: Funnel, Tube Pre-filled with Stabilization buffer, Cap, Instructions and precipitation reagents. Pk 2, 12 or 50
MFx-01	MFx Saliva Microbiome DNA Collectors to collect 1ml saliva samples: Funnel, Tube Pre-filled with Stabilization buffer, Cap and Instructions. Pk 2, 12 or 50.
MFxA-01	MFxA Assisted Saliva Microbiome DNA Collectors to collect 1ml saliva samples: Funnel, Tube Pre-filled with Stabilization buffer, Cap, 2 swabs and Instructions. Pk 2, 12 or 50.
GeneFix™ DNA Isolation Kits	
GSPN-02	Saliva-Prep Full DNA Isolation kit to process 2 x 2 ml or pro-rata aliquots
GSPN-12	Saliva-Prep Full DNA Isolation kit to process 12 x 2 ml or pro-rata aliquots
GSPN-50	Saliva-Prep Full DNA Isolation kit to process 50 x 2 ml or pro-rata aliquots
XME-50	Xtreme DNA Isolation kit to process 50 x 0.5ml of stabilized saliva
GSM-2	Saliva-Mag DNA Isolation kit for 2 x 2ml samples or pro-rata aliquots
GSM-12	Saliva-Mag DNA Isolation kit for 12 x 2ml samples or pro-rata aliquots
GSM-48	Saliva-Mag DNA Isolation kit for 48 x 2ml samples or pro-rata aliquots
MR-24	Mag-Rack Magnetic separator rack for 12 x GeneFix tubes or 6 x microtubes
DCU-50	DNA Clean Up Kit for 50 x 100ul samples
GeneFix™ Accessories	
TP-50	50 Transport Packs with absorbent pads for shipping saliva samples
BC/3A/50	50 x 3 triplicate Pre-Printed barcodes 25mm x 10mm, printed on cryogenic labels
PK/11	11mg Lyophilised Proteinase K – fully tested with instructions
MBOX	Postage box for GeneFix kits
GFS-01/100	100 foam tipped swabs for assisted collection, wrapped and ethylene oxide treated



For swab or DNA isolation queries:
info@isohelix.com | www.isohelix.com
Molecular Biology Solutions www.cellprojects.com