

# Isohelix

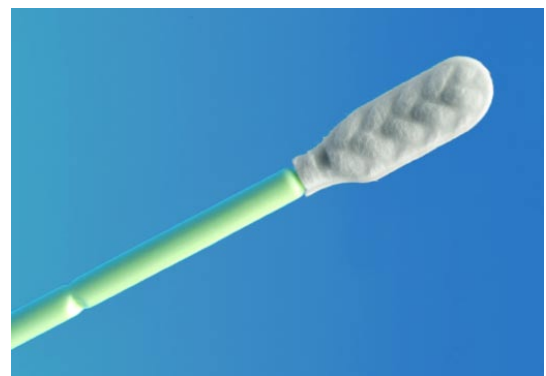
## Isohelix an Integrated DNA strategy.

Each Isohelix product has been specifically designed and developed to improve all the DNA sampling steps from our original product the DNA buccal swabs right through to the DNA isolation and even if you wish checking the DNA's PCR integrity. We have taken an integrated approach by looking at each individual step to improve yields, reduce sample losses and at the same time improve the handling procedures, the result to maximise yield and quality of DNA.

## Smarter Collection using Isohelix DNA Buccal Swabs

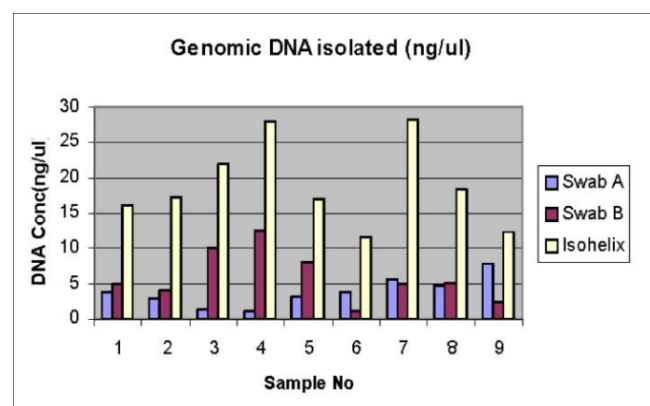
The Isohelix range of Buccal Swabs has been specifically designed to give increased yields of high quality buccal cell and genomic DNA. Buccal cell sampling offers a viable alternative to blood collection and together with the Isohelix range of DNA Isolation and Stabilisation kits enables high yields of pure, intact DNA to be collected easily and quickly. Isohelix swabs are suitable for both human and veterinary use and offer significant advantages over other swab designs in terms of efficiency of cell collection by the unique swab matrix, which combined with a quick release surface, maximises yields of DNA. Swab batches are gamma treated and routinely tested for human DNA contamination.

- ✓ **High yielding swabs for buccal cell DNA collection**
- ✓ **Unique swab matrix greatly improves DNA yields.**
- ✓ **Alternative to blood collection.**
- ✓ **Suitable for human and veterinary use.**
- ✓ **Easy to handle and quick to use.**



Isohelix swabs are used in:

- ✓ **Research Genotyping Applications**
- ✓ **Veterinary Genotyping and Diagnostics**
- ✓ **Paternity and Heredity Services**
- ✓ **Forensics and DNA Population Studies**



# Isohelix

## SK-1 Isohelix Swab (Cat. No: SK-1S)

The SK-1 swab uses the unique swab matrix design to efficiently collect buccal cell samples. Following sampling you simply snap the shaft just above the swab head and place into the tube provided, then sealed for containment.

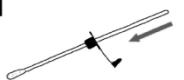
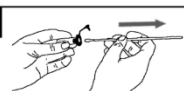

- ✓ *Swab matrix significantly improves DNA yields*
- ✓ *Various formats available with/without tubes*
- ✓ *Available in single and twin sterile packs*
- ✓ *Alternative to blood collection*




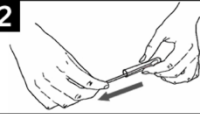

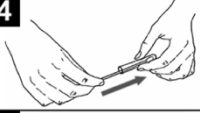

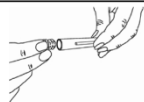
## SK-2 Isohelix Swab (Cat. No: SK-2S)

The SK-2 has the same features as the SK-1 except that it includes a unique cap design which allows you to simply push the entire swab head from off the shaft into the collection tube after sampling. This format has the advantage of being easier to manipulate at the DNA isolation stage whether using manual or HT extraction methods.

### Instructions for Isohelix SK-2 Buccal Swabs Stages 1 – 3 as for SK-1 swabs shown above

<b>4</b>		Slide the plastic cap over the swab handle with the flat side of the cap facing upwards and the swab facing downwards.
<b>5</b>		Insert the swab into the clear plastic tube and push the cap into place. Next, hold the cap while pulling the swab handle outwards to release the swab material into the tube.
<b>6</b>		Close the cap. The tube is now completely sealed.

### Instructions for Isohelix SK-1, SK-3, SK-4 and SK-5 Buccal Swabs

<b>1</b>		Pull open the package from one end.
<b>2</b>		Remove one of the swabs from the tube.
<b>3</b>		Insert the swab into your mouth and rub firmly against the inside of your cheek or underneath lower or upper lip. For standard DNA collection rub for <b>1 minute</b> and in all cases rub for a minimum of 20 seconds. <b>Important – use reasonable, firm and solid pressure</b>
<b>4</b>		Place the swab back into the tube. Do not touch the brush with your fingers.
<b>5</b>		Place your thumbnail in the small groove set in the handle, then snap the handle in two by bending to one side. Let the swab head fall into the tube.
<b>6</b>		Seal the tube securely with one of the caps.

### SK-2 swab design showing special release cap and removal of swab head from shaft



## Spin+Collect™ (Cat. No: SC/ST-100)

**Spin+Collect™** is a novel sample recovery device to increase sample yields from swabs and other materials. The Isohelix **Spin+Collect** firmly grips the swab or other material whilst exposing maximal surface area for the first step of elution or lysis of the sample. A 1.5ml microfuge tube is then fitted as a cap and inverted for centrifugation and final release of any sample trapped in the matrix.

### Applications

- ✓ *Increased yields from swabs and other materials.*
- ✓ *Improves yields of DNA, Protein, Bacteria etc.*

### Benefits

- ✓ *Yields increase over 25%.*
- ✓ *Recovers sample deeply embedded in the matrix.*
- ✓ *Requires a single centrifuge step.*
- ✓ *Disposable, sterile and packaged aseptically.*
- ✓ *Tested for Human DNA contamination*

*Cell Projects Ltd has an exclusive license on patented designs from Guys and St Thomas NHS Foundation to commercialise the **Spin+Collect** and is jointly working with the Foundation to extend its application and use.*



## Isohelix Dri-Capsules (Cat. No: SGC-50)

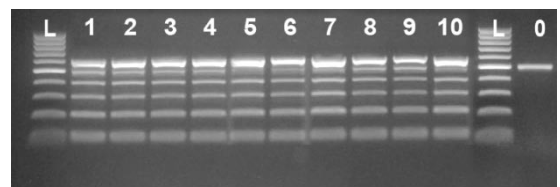
Designed for use with Isohelix SK-1 swabs, these silica gel capsules offer an easy to use alternative to chemical stabilization for long term stability of the buccal DNA on the swab head prior to isolation.

- ✓ *Long term stability at room temperature*
- ✓ *Liquid free alternative to DSK Kit*
- ✓ *Easy to handle by patients and professionals*
- ✓ *Designed for use with SK-1 swab kits*
- ✓ *Ideal for remote sample collection*

Long term stability studies show that the stability of DNA samples on SK1 swabs stored with Isohelix Dri-Capsules is maintained over a period of at least 12 months. The study is ongoing and is expected to confirm an increased period of stability well in excess of the 12 months tested so far.



12 month stability study with Isohelix Dri-Capsules



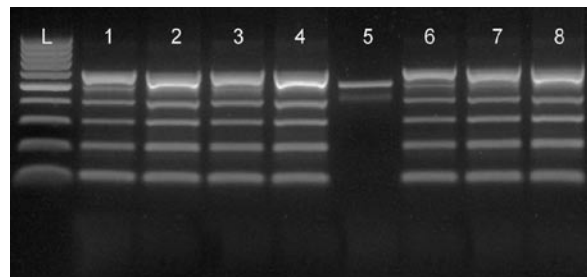
Lanes 1 & 2: freshly taken swabs  
 Lanes 3 & 4: Stored 1 month with Dri-Capsule  
 Lanes 5 & 6: Stored 3 months with Dri-Capsule  
 Lanes 7 & 8: Stored 6 months with Dri-Capsule  
 Lanes 9 & 10: Stored 12 months with Dri-Capsule  
 0: Negative control

## Stabilising and Lysis Kit (Cat. No: DSK-50)

The Isohelix Stabilising and Lysis Kits fully stabilize your DNA from enzymatic and microbial activity that occurs naturally after buccal sampling. The kit is designed to store the samples at room temperature and shows no visible loss of stability for at least 3 ½ years (tested to date). The DSK Kit fully lyses the cells, releasing additional DNA from the cells further enhancing yields, whilst the enzymatic inhibitor maintains the structural integrity of the DNA.

- ✓ *Stabilises your DNA Long Term*
- ✓ *Improves DNA Yield and Purity*
- ✓ *Room Temperature Storage*
- ✓ *Lyses the cells*
- ✓ *Compatible with DDK Isolation Kit*

DNA Stability comparison over 3 ½ years using Isohelix DSK Stabilising and Lysis Kit.



- L 100bp DNA Ladder
- 1 1 month
- 2 3 Years
- 3 3 Years 9 Months
- 4 3 Years 1 month
- 5 TE Blank
- 6 5ng Human DNA
- 7 10ng Human DNA
- 8 20ng Human DNA

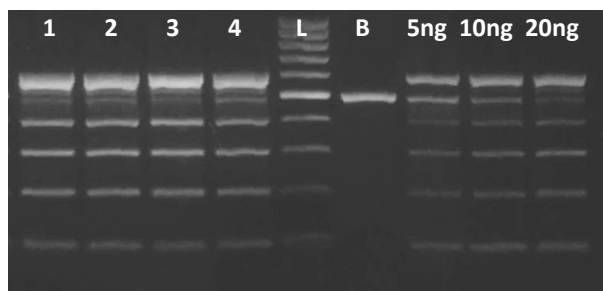
For samples 1-4, buccal swabs were stabilised with DSK and the DNA isolated after the stated period using Isohelix DDK DNA Isolation Kit.

## DNA Isolation Kit (Cat. No: DDK-50)

The Isohelix DNA Isolation Kits have been specifically formulated to produce high DNA yield and purity from buccal swabs. The kits are fully optimised for use on buccal samples and offer reduced handling times, increased DNA yields together with many other important technical and practical benefits.

- ✓ *Includes Stabilisation and Lysis steps*
- ✓ *High yields and Purity*
- ✓ *Optimised to Buccal Cell Swabs*
- ✓ *Fast handling times*
- ✓ *Manual or High Throughput formats*
- ✓ *Considerable test data available*
- ✓ *No solvents, columns or filtration*

DNA Isolated from buccal swabs with Isohelix DDK Isolation Kit run against human DNA standards



Comparison of Isohelix versus Spin Column methods

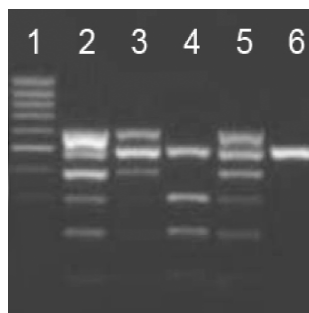
	Spin Column	Isohelix
Ethanol	✓ YES	✓ NO
Incubation step @ >50°C	✓ YES	✓ YES
Number of columns	✓ 1	✓ 0
Number of solutions	✓ 6	✓ 4
Number of tubes	✓ 6	✓ 2
Number of liquid transfers	✓ 14	✓ 5
Expected Yields	0.5 to 3.5µg	4 to 10µg

## DNA Quality Check Kit (Cat. No: DQC-50)

The Isohelix DQC Quality Check kit is an easy to use PCR based kit which shows the presence and biological quality of human DNA isolated from buccal swabs and other sampling methods.

- ✓ *Analyse your DNA's quality*
- ✓ *Demonstrate the DNA's integrity for PCR*
- ✓ *Understand the Quality of your DNA*

DQC Kit for checking quality of DNA

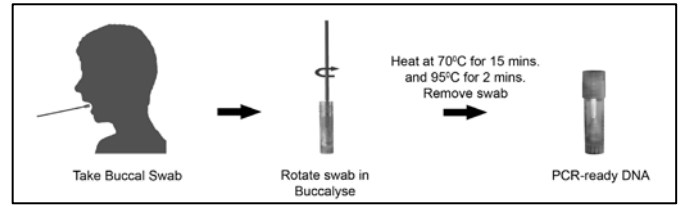


- 1 100bp ladder
- 2 Good Quality DNA: 6 bands present
- 3 Good Quality DNA: 6 bands present but lower yield so bands less intense
- 4 Poor Quality DNA: Some bands missing
- 5 Good Quality DNA: 6 bands present
- 6 Negative Control: 500bp internal Control shows PCR worked

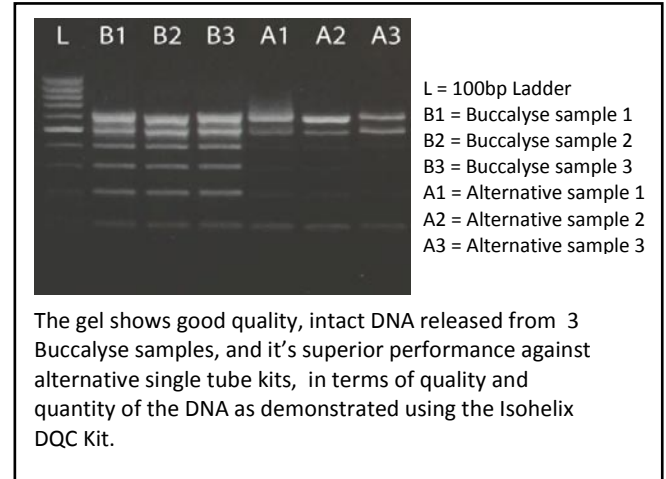
## BEK Single Step/Single Tube DNA Release Kit (Cat. No: BEK-25/SK3)

The Isohelix Buccalyse DNA Release Kits produce high DNA yields (2 to 4µg total yield) from buccal swabs offering significant advantages of ease of handling, speed and ease of sample preparation with rapid extraction of PCR-ready DNA using a single tube method not requiring centrifugation.

- ✓ *Quick and easy, single tube/single step kit*
- ✓ *PCR-ready DNA in under 20 minutes*
- ✓ *DNA suitable for simple and multiplex PCR*
- ✓ *Ideal for qPCR DNA samples*
- ✓ *Outperforms alternative single tube kits*
- ✓ *Suitable for high throughput and robotics*
- ✓ *Developed for DNA buccal swabs*



### Comparison of Buccalyse to an alternative single tube



Isohelix Swab and DNA Sample Handling Products Catalogue	
Cat. No.	DNA Buccal swabs
SK-1S	100 x 1 swab with 5ml tube and cap, individually wrapped and gamma treated.
SK-2S	100 x 1 swab with 2ml tube and special release cap, individually wrapped, gamma treated.
SK-3S	250 x 1 swab individually wrapped and gamma treated.
SK-4S	500 swabs, 250 x 2 swabs per wrapper, gamma treated and packed 250 units to a box.
SK-5S	600 swabs, 200 x 3 swabs per wrapper, gamma treated and packed 200 units to a box.
Spin+Collect Sample Recovery Device	
SC/ST-100	100 x Spin+Collect devices, packed 5 per bag with 100 x 1.5ml matched tubes.
SC-150	150 x Spin+Collect devices, packed 5 per bag.
DNA Isolation and Handling Kits	
DSK- 50*	DNA Stabilisation and Lysis kit for long term DNA stability at room temperature. 50 reactions containing 2 solutions.
DDK-50*	Swab Optimised DNA Isolation kit for 50 reactions containing 4 solutions.
BEK-50*	Buccalyse DNA Release Kit – a quick and simple one tube method for releasing DNA from buccal swabs for 50 reactions.
DQC-50	DNA Quality Check kit for testing the quality of human DNA taken from swabs for 50 reactions
SGC-50	50 x Isohelix Dri-Capsules for long term DNA stability on SK1 swabs. Individually foil wrapped.
SGC-50/SK1	50 x Isohelix Dri-Capsules for long term DNA stability on SK1 swabs. Individually foil wrapped with 50 SK1 swab packs.
Sample size kits	
DDK-3*	Swab Optimised DNA Isolation kit for 3 reactions containing 4 solutions.
BEK-3*	Buccalyse DNA Release Kit – a quick and simple one tube method for releasing DNA from buccal swabs for 3 reactions.
SGC-3/SK1	3x Isohelix Dri-Capsules for long term DNA stability on SK1 swabs. Individually foil wrapped with 3 SK1 swab packs.

\* Kits also available with 50 (or 3 for sample size kits) swabs of choice; swabs priced pro rata on standard box price  
Please specify preferred swab type with order. 50 (or 3) swabs are only available when ordering a \*DNA handling and sampling kit.