

iSWAB™ - Protein

Non-invasive device for collection and stabilization of protein and DNA in the same oral sample

Oral sample collection has gained widespread acceptance due to its non-invasive nature and because continuous visual contact of the collection process is possible. Current non-invasive collection products are designed for immediate detection using stick-based technology, but are limited to simple yes/no answers. If additional data is required, a more robust collection method coupled with high-sensitivity downstream analysis is necessary.

The iSWAB-Protein collection device allows for collection and stabilization of both proteins and DNA at the point of collection yielding high amount of material for multiple enzyme based immunoassays as well as genomic based testing from the same collected sample. This adds another level of chain of custody, allowing the investigator to link the protein analysis with the DNA of the individual that the sample belongs to.

Applications include:

- Pharmacogenomics: Facilitate correlations of drug bioavailability and efficacy on cellular functions at the proteomics and genomics level.
- Forensics and Law Enforcement: Additional chain of custody layer; link protein analysis results with DNA from the same sample.

The unique and patented design of Mawi DNA Technologies' iSWAB devices enables mechanistic release of cells into a proprietary lysis and stabilization buffer, resulting in the recovery of nearly all cells from single or several swabs while significantly minimizing bacterial contamination. iSWAB™ devices are designed to facilitate self sample collection, sample concentration, transport, extraction, and long term storage at room temperature, all in a single tube. The tubes are suitable for either manual or automated sample preparation on standard liquid handling robotic workstations.



iSWAB patented
sample concentration &
stabilization technology

Features & Benefits

- **Add additional level chain of custody control:** Tie the collected sample's protein analysis result to the DNA of the individual
- **Ready for downstream application**
- **Self collection in less than 5 minutes:** Simple, easy, fast and convenient sample collection.
- **Swab-free sample transport:** Decrease sample processing time and decrease compromising sample integrity
- **Room temperature stable:** Reduce sample storage and transport costs by eliminating cold chain requirements
- **Traceable and reliable chain of custody:** LIMS compatible unique barcodes included on each iSWAB device for efficient traceability and storage purposes
- **Scalable and easy to process:** Manual and automation friendly sample processing
- **Accommodate for sample collection from various age groups:** Can be performed with infants, toddlers and elders where saliva collection can be problematic



reinventing non-invasive sampling™



Australian distributors:
Fisher Biotec Australia
free call: 1800 066 077
email: info@fisherbiotec.com
web: www.fisherbiotec.com

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iSWAB-Protein Collection Efficiency in Drug Metabolite Analysis

Experimental Objective: To investigate if the iSWAB-Protein sample suspension solution has an effect on the sensitivity of homogeneous enzyme immunoassays detection limits.

- The ARK assay was calibrated using ARK calibrators
- Negative drug samples containing various amounts of MAWI buffer were assayed
- Collected buccal samples where spiked with Fentanyl concentration

		33% MAWI	50% MAWI	66% MAWI	100% MAWI
Apparent Fentanyl Conc. (ng/mL)	Replicate 1	0.38	0.33	0.59	1.1
	Replicate 2	0.27	0.4	0.66	0.99

*Experiment was performed by Ark Diagnostics

Conclusion: iSWAB-Protein allows for high sensitivity detection of drugs in enzyme-based immunoassay detection. The MAWI lysis and stabilization buffer does not interfere with enzyme immunoassays based detection and allows for high sensitivity testing.

Part No.	Product	Collection Volume
ISWAB-P-1200C	iSWAB device for collection of buccal cells for DNA/Protein assays	1.0 mL
ISWAB-P-250C	iSWAB device for collection of buccal cells for DNA/Protein assays	0.4 mL



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