

Nucleic Acids Extraction Kits

Selection Guide



Control laboratories are daily working with qPCR assays for detecting pathogens, spoilage microorganisms, GMO, allergens or for preventing frauds. Historically, suppliers stressed a lot the performances of the detection kits, often forgetting that in agrifood applications DNA extraction has an equivalent importance in the quality of results.

Real-time PCR significantly contributed to increase the efficiency of quality control in food industry

DNA extraction is of paramount importance in qPCR results

Real-Time PCR analysis are highly specific, reproducible, sensitive, fast and convenient When PCR inhibitors, such as polysaccharides, humic acids, particularly abundant in food samples are not completely removed during extraction protocols, remaining as contaminants in the final DNA preparations, they can interfere with the reaction at several levels, leading to decreasing and even to complete inhibition of DNA polymerase..



DNA extraction kits fundamental features

Efficient lysis of cells membranes to release the nucleic acid in the buffer solutions

Removal of the numerous compounds inhibiting PCR assays

Retention of DNA fragments only when size suffice PCR amplification

Recovery

Purification stringency

Selectivity



Possibility to work with both small and large test sample units (representativeness)

Ease of operation and applicability fitting different materials at a reasonable cost

Workflow fits indications of institutes for method harmonization (e.g. ISO 21571)

Scalability

Practicability

Compliance



The sampling procedure determines the "representativeness" of a result, whereas quality and quantity of the analytes may vary depending on the sample preparation. Sampling and sample preparation are thus crucial steps in the process of contaminants DNA detection.

Generon offers three kits with different profiles to fit the technical demands conveniently

Exploit at best Real-Time PCR and Digital PCR

A sample shall be representative of the batch/lot of the product from which it was taken

the sampling plan and sub-sample size shall meet statistical requirements with respect to homogeneity and threshold limit up to which the result should be reliable.



How getting pure DNA without phenol and chlorophorm?

When representativeness is of paramount importance. **Ion-Force DNA Extractor FAST** is the kit Generon designed for the extraction of DNA from large samples. It allows reproducible DNA extractions, without the use of carcinogenic chemicals, from matrices like gelatin, when the other available commercial kits are giving poor and uneven DNA yields.

1-4-ALL APPROACH

allows extraction from both vegetal or animal matrices

SCALABLE PROTOCOL

allows extractions from representative sampling units

FRAGMENTED DNA RECOVERY

allows extractions from processed matrices

PROGRESSIVE CLEAN-UP

removes PCR inhibitors present in matrices

COMPLIANCE

based on CTAB extraction according to ISO 21571

The limit of detection of the analytical method is determined, not by the most sensitive part of the procedure, but by the least. In most cases this is the test portion size

ION-Force DNA Extractor FAST workflow





When samples are highly homogeneous, finely ground and rich in intact DNA the test portions can be reduced in size **ION Spin K** is the kit designed by Generon R&D to work with a minimal lab set-up. The protocol uses the same reagents of ION-Force with the addition of proteinase-K, and it was adapted to a 1-gram maximum test sample size. A perfect compromise between practicability and DNA quality.

Cereals grains Milling derivatives Soybeans Soy meal Soy based food vegetable oils Starches and sugars Feed and MBMs Lecithin liquid and powder Eggs and derivatives Fresh Vegetables Canned vegetables Candy fruits Fruit juices Liquid and powdered milk Dairies and ice-creams Meat (raw or cooked) Meat preparations

Beverages Cakes and chocolate Toppings **Biscuits and Snacks** Pet food Freeze-dried food Flavors and spices Salad dressings Würstel and cold cuts Honev **Dietary integrators** Baby food Infant formula Pasta RTE mixed salads Convenience food Tomato based sauces Textiles

ION Force and ION Spin K extracts DNA suitable for PCR amplification from different and difficult matrices



FASTfood DNA Extraction Reagent was developed for the rapid preparation of DNA template from food-borne pathogens for use in PCR amplification reactions using a simple boil and spin protocol, The reagent can be used also to prepare PCR-ready template from grains and milling derivatives for GMO and allergens detection Crude lysis DNA prep can be used for detection of microbes in pre-enriched broths but also for testing GMO and allergens in selected matrices

FASTfood DNA Extraction Reagent workflow



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drain the pellet

Collect enriched media

Spin down and

Add ION-Liquid Force



Vortex And heat



Spin down debris

Dilute extract 1:10



Amplify your DNA





Fit-for-purpose of the different extraction kits for downstream applications

	GMO Detection	Allergens Detection	Microbiology Analysis	Ingredient Authenticity
FASTfood	**	*	***	*
ION-Spin K	**	**	***	***
ION-Force FAST	***	***	*	***

Technical characteristics of the different extraction kits

	Speed	Versatility	Sample Size	Purity
FASTfood	***	*	**	*
ION-Spin K	**	**	**	***
ION-Force FAST	*	***	***	***

Instructions for ordering

EXD001	ION Force FAST DNA Extraction Kit (100 Ext.)
EXD018K	ION Spin K DNA Extraction Kit (50 Ext.)
EXD009	FASTfood DNA Extraction Reagent (20 ml)
EXD020	FASTfood DNA Extraction Reagent (100 ml)
Ancillary reag	ents and equipment
ACC2911	ION Force luer-lock reservoirs (100)
EXD010-P	DNA Extraction manifold
EXD011	Proteinase K (100 mg/vial)
EXD010	Proteinase K resuspension Buffer
Spare reagent	's
EXD003	ION Force DNA Extractor SOLUTION A (250 ml)
EXD004	ION Force DNA Extractor SOLUTION D (30 ml)
EXD005	ION Force DNA Extractor BUFFER T (125 ml)
EXD006	ION Force DNA Extractor BUFFER P (125 ml)
Other extraction	on kits
EXD199	Viral/Bacterial DNA/RNA Extraction kit (50 Ext.)
EXD910	Promega MagneSphere Stand for 1.5 ml tubes (2 slots)
EXD912	Promega Wizard Magnetic DNA Purification kit (200 Ext.)