

IDCORECONTROL

POSITIVE CONTROLS FOR IDCORE^{XT}

PACKAGE INSERT

Kit Product Number: 1301790000

25 Tests

Store at 2-8°C



: Progenika Biopharma, S.A.
Parque Tecnológico de Bizkaia
Ibaizabal bidea, Edificio 504
48160 Derio-Bizkaia- SPAIN

GRIFOLS

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION

The ID CORE CONTROL™ kit consists of 2 sets of recombinant synthetic DNA plasmids to be used as positive controls to evaluate the performance of the ID CORE XT™ test (Kit Product Number: 1021720000).

The ID CORE CONTROL kit contains two separate vials: ID CORE CONTROL 1 and ID CORE CONTROL 2, both composed of synthetic plasmid pools to be used as assayed positive controls for alternate alleles (alleles 1 and 2, respectively) of the 29 polymorphisms assayed by ID CORE XT (Table 1).

Both control vials must be used in every run of the ID CORE XT test as positive controls for the correct detection of the polymorphism genotypes interrogated by the test. Each control has expected polymorphism genotypes results in the ID CORE XT test when analyzed by the ID CORE XT™ ANALYSIS SOFTWARE and will produce a valid or invalid run result.

ID CORE XT is a qualitative, polymerase chain reaction (PCR) and hybridization-based genotyping test for the simultaneous identification of multiple alleles encoding human erythrocyte antigens (HEAs) in human genomic DNA. ID CORE XT interrogates 29 polymorphisms to predict 53 HEA allele genotypes and 37 antigen phenotypes of the following blood group systems: Rh, Kell, Kidd, Duffy, MNS, Diego, Dombrock, Colton, Cartwright and Lutheran, as an alternative to serology.

Each one of the ID CORE CONTROL samples consists of a pool of 3 recombinant synthetic DNA plasmids resuspended in a preservative buffer. The 3 plasmids contain, in total, the genomic sequences which harbor the 29 genetic polymorphisms interrogated by the ID CORE XT test.

1.2 INTENDED USE

The ID CORE CONTROL kit contains two separate vials: ID CORE CONTROL 1 and ID CORE CONTROL 2, both composed of synthetic plasmid pools to be used as assayed positive controls for alternate alleles (alleles 1 and 2) of the 29 polymorphisms interrogated by ID CORE XT. Both control vials must be used in every run of the ID CORE XT test.

ID CORE CONTROL samples are not intended to monitor the DNA extraction step of the ID CORE XT processing protocol.

2. REQUIRED COMPONENTS, MATERIALS AND EQUIPMENT

2.1 KIT COMPONENTS PROVIDED BY PROGENIKA

Component	Part Number	Number of Tests	Area	Storage
ID CORE CONTROL 1	1300190100	25 tests	Pre-PCR	2–8°C
ID CORE CONTROL 2	1300190200	25 tests	Pre-PCR	2–8°C
ID CORE CONTROL Package Insert	1301700301	Not applicable	Not applicable	Not applicable
ID CORE CONTROL Information Sheet	1301700400	Not applicable	Not applicable	Not applicable

Notes: Refer to the expiration date printed on the reagent label, and do not use the kit or any kit components past the indicated expiration date. The tube with the blue cap corresponds to ID CORE CONTROL 1 and the tube with the yellow cap to ID CORE CONTROL 2.

2.2 EQUIPMENT AND MATERIALS REQUIRED BUT NOT PROVIDED BY PROGENIKA

ID CORE CONTROL 1 and 2 are intended to be use with ID CORE XT (Kit Product Number: 1021720000). Please refer to the ID CORE XT Package Insert (Part Number: 1021700401) for recommended materials and equipment.

3. WARNINGS AND PRECAUTIONS

- Protect the ID CORE CONTROL samples from cross-contamination and contamination with genomic DNA or PCR products.
- Use nuclease-free filter pipette tips to avoid contamination of reagents or samples.
- Accurate pipetting of reagents is required for accurate results.
- Do not mix or interchange kit components from different kit lots.
- Do not use ID CORE CONTROL after expiration date.
- Close reagent vials properly after use.
- Follow indications on labels or in this document for reagent storage.
- Safety Data Sheet (SDS) is available from Grifols Technical Service upon request.
- If shipment arrives damaged, please contact Grifols Technical Service.

4. STORAGE AND STABILITY

- Store all reagents at 2–8°C.
- Refer to the expiration date printed on the box label (YYYY/MM/DD).
- ID CORE CONTROL kits have proved open vial stability up to 25 in-use cycles throughout 12 months. Discard ID CORE CONTROL 1 and ID CORE CONTROL 2 reagents that have been in use for longer than 12 months or after 25 uses.

5. PROCEDURE

5.1 WORKFLOW

- ID CORE CONTROL 1 and ID CORE CONTROL 2 shall be included in each ID CORE XT batch and processed according to the protocol described in the Package Insert of ID CORE XT (Part Number: 1021700401).
- The volume of ID CORE CONTROL 1 and ID CORE CONTROL 2 to be added in the DNA amplification step of the ID CORE XT test is 5 µl, which is equal to the input volume of genomic DNA samples.

5.2 ID CORE CONTROL SAMPLE PREPARATION

The ID CORE CONTROL samples are ready to use and do not require any preparation. Vortex and spin down the ID CORE CONTROL 1 and the ID CORE CONTROL 2 before volume dispensation during the DNA amplification step according to protocol described in the Package Insert of ID CORE XT (Part Number: 1021700401).

Each batch of samples per ID CORE XT lot must be tested with one replicate of each of the two positive control samples included in the ID CORE CONTROL kit (ID CORE CONTROL 1 and ID CORE CONTROL 2). To avoid incompatibility issues with the ID CORE XT ANALYSIS

SOFTWARE, these controls must be exactly named as follow: **ID CORE CONTROL 1** and **ID CORE CONTROL 2**.

5.3 DATA ACQUISITION AND ANALYSIS

Data analysis and result determination is performed using ID CORE XT ANALYSIS SOFTWARE (Part Number: 1021700000). Please refer to the ID CORE XT ANALYSIS SOFTWARE User Manual (Part Number: 1021700501) for detailed instructions.

ID CORE CONTROL does not account for the ID CORE XT ANALYSIS SOFTWARE conversion algorithm for predicted allele genotypes and phenotypes. The expected polymorphism genotype results for each of the ID CORE CONTROL samples are indicated in Table 1.

Table 1. Expected results of polymorphism genotypes for ID CORE CONTROL 1 and ID CORE CONTROL 2.

Blood Group System	Polymorphism	Polymorphism Genotype Results	
		ID CORE CONTROL 1	ID CORE CONTROL 2
Rh	RHCE:c.122A>G	GG	AA
	RHCE:c.307T>C	C	T
	RHCE:c.335+3039ins109	Present	Absent
	RHCE:c.676G>C	CC	GG
	RHCE:c.712A>G	GG	AA
	RHCE:c.733C>G	GG	CC
	RHCE:c.1006G>T	TT	GG
	RHD-CE-D hybrid	Present	Absent
Kell	KEL:c.578T>C	CC	TT
	KEL:c.841T>C	CC	TT
	KEL:c.1790C>T	TT	CC
Kidd	SLC14A1:c.342-1G>A	AA	GG
	SLC14A1:c.838G>A	AA	GG
	SLC14A1:c.871T>C	CC	TT
Duffy	FY:c.1-67T>C	CC	TT
	FY:c.125G>A	AA	GG
	FY:c.265C>T	TT	CC
MNS	GYPB:c.[59C>T]	TT	CC
	GYPB:c.143T>C	CC	TT
	GYPB:c.230C>T	TT	CC
	GYPB:c.270+5G>T	TT	GG
	GYP. hybrid	Present	Absent
Diego	DI:c.2561T>C	CC	TT
Dombrock	DO:c.793A>G	GG	AA
	DO:c.323G>T	TT	GG
	DO:c.350C>T	TT	CC
Colton	CO:c.134C>T	TT	CC
Cartwright	YT:c.1057C>A	AA	CC
Lutheran	LU:c.230A>G	AA	GG

The ID CORE CONTROL samples are analyzed automatically by the ID CORE XT ANALYSIS SOFTWARE, which checks if the obtained polymorphisms genotypes match the expected profile. In case the positive controls do not match the expected polymorphisms genotype patterns, an “Invalid

run” message will be obtained, no sample results will be reported and all the samples from that run must be re-tested.

6. ANALYTICAL DATA

6.1 PRECISION VERIFICATION: REPEATABILITY, REPRODUCIBILITY AND LOT-TO-LOT VERIFICATION STUDIES

A repeatability and reproducibility study was conducted across lots (3), operators (3), and days (3). Three operators performed three independent runs per day (one run per ID CORE CONTROL lot), during three non-consecutive days. The call rate for all ID CORE CONTROL 1 and ID CORE CONTROL 2 replicates (a total of 270 observations each) was 100% correct across different operators, reagent lots and days.

In addition, a total of 9 combinations of three (3) ID CORE CONTROL lots and three (3) ID CORE XT lots were tested. The call rate for all ID CORE CONTROL 1 and ID CORE CONTROL 2 replicates (a total of 90 observations each) was 100% correct in the different combinations tested.

6.2 MATRIX EFFECT STUDY

A matrix effect study was performed in order to compare the results obtained with ID CORE XT for the ID CORE CONTROL matrix and different human genomic DNA sample matrices used as DNA extraction elution buffers.

All tested matrices showed equivalent results to the ones obtained with a valid Negative Control (nuclease free water), indicating the absence of matrix effects on ID CORE CONTROL.

6.3 GUARD BANDING AND SURROGATE STUDIES

Guard Banding and Surrogate QC material studies were performed to verify if ID CORE CONTROL was as sensitive as genomic DNA samples to protocol variations at key steps of the ID CORE XT assay procedure. The acceptable range of ID CORE CONTROL and genomic DNA samples for each of the 33 evaluated test case groups is described in Table 2.

The results demonstrated that for 23 out of the 33 test cases studied the acceptable range for ID CORE CONTROL is identical than for a genomic DNA sample; for 3 test cases the acceptable range for ID CORE CONTROL is more sensitive to process variations than for a genomic DNA sample; whereas in 7 test cases (PCR cycles; PCR annealing, denaturalization and extension temperatures; PCR denaturalization time; denaturalization temperature in the hybridization step and Beads Master Mix volume) a genomic DNA sample is more sensitive to process variations than the ID CORE CONTROL.

ID CORE CONTROL has a wider acceptable range than genomic DNA samples when low volumes of Beads Master Mix are used. As such, ID CORE CONTROL samples may not indicate procedural errors when half the recommended volume or less of ID CORE XT Beads Master Mix is pipetted.

In addition, since ID CORE CONTROL can be less sensitive to changes in Veriti Dx thermal cycler settings for ID CORE XT Amplification and Hybridization steps, the use of the correct program settings should be verified in each thermal cycler run.

Table 2. Acceptable assay test condition ranges for ID CORE CONTROL and genomic DNA samples.

ID CORE XT processing step	Test case group definition	Nominal value	Acceptable range	
			ID CORE CONTROL	Genomic DNA samples
Amplification, Hybridization, Labeling	Mixing of reagents by vortexing and spin down reagents by pulse centrifugation	3-5 sec	1-10 sec	1-10 sec
Amplification	PCR master mix volume and PCR reaction mix volume	20 µl	5-80 µl	5-80 µl
	Enzyme (Taq) volume in PCR reaction mix	0.5 µl	0.1-2 µl	0.1-2 µl
	Time for dispensation of PCR reaction mix and addition of DNA samples	Immediate-up to 60 min	Immediate-120 min	Immediate-120 min
	PCR product stability	Storage at 2-8°C: up to 72 h	Immediate-96 h	Immediate-96 h
		Storage at -20°C: up to 4 weeks	Up to 5 weeks	Up to 5 weeks
	PCR cycles	40 cycles	28-80 cycles	29-80 cycles
	Annealing temperature	60°C	56-62°C	58-62°C
	Polymerase activation temperature	95°C	90-99.9°C	90-99.9°C
	Polymerase activation time	15 min	7.5-30 min	7.5-30 min
	Denaturalization temperature	95°C	92-98°C	93-98°C
	Extension temperature	72°C	67-77°C	67-76°C
	Final extension temperature	72°C	67-77°C	67-77°C
	Final extension time	7 min	3.5-14 min	3.5-14 min
	Denaturalization time	30 sec	15 sec-1 min	16 sec-1 min
	Annealing time	30 sec	15 sec-1 min	15 sec-1 min
	Extension time	1 min 20 sec	40 sec-2 min 40 sec	40 sec-2 min 40 sec
	Ramp rate	70%	40-100%	40-100%
	Emulation mode	Default	Default-9600-9700	Default-9600-9700

ID CORE XT processing step	Test case group definition	Nominal value	Acceptable range	
			ID CORE CONTROL	Genomic DNA samples
Hybridization	Mixing time of Beads Master Mix	10-15 sec	5-30 sec	5-30 sec
	Beads MM Volume	46 µl	14-92 µl	24-92 µl
	Time for dispensation of Beads Master Mix and addition of PCR product	Immediate-up to 30 min	Immediate-60 min	Immediate-60 min
	Volume of PCR product	4 µl	1-7 µl	1-8 µl
	Denaturalization time	2 min	1-4 min	1-4 min
	Hybridization time at 52°C	30 min	15-60 min	15-60 min
	Denaturalization temperature	95°C	90-99.9°C	91-99.9°C
Hybridization and Labeling	Hybridization and labeling temperature	52°C	51-54°C	51-55°C
Labeling	Volume of SAPE in the labeling mix	4 µl	3-5 µl	2-5 µl
	Time for labeling mix storage	Up to 35 min	Immediate-70 min	Immediate-70 min
	Time for labeling mix dispense	Immediate-up to 5 min	Immediate-10 min	Immediate-10 min
	Labeling time	10 min	5-20 min	5-20 min
Data Acquisition	Transfer time from labeling to Luminex instrument	Immediate-up to 10 min	Immediate-20 min	Immediate-20 min
	Temperature of data acquisition on Luminex	52°C	47-57°C	47-57°C
	Reading time using Luminex instrument	Time required for reading 4-96 tests	Immediate-45 min	Immediate-45 min

7. ASSAY LIMITATIONS

- The ID CORE CONTROL 1 and ID CORE CONTROL 2 do not monitor the DNA extraction process, a specimen preparation process carried out prior to the ID CORE XT test and required for ID CORE XT performance.
- The ID CORE CONTROL 1 and ID CORE CONTROL 2 do not contain synthetic DNA plasmids for the polymorphism genotype results *RHCE:c.676*, *RHCE:c.712*, *RHCE:c.733* and *RHCE:c.1006* for the prediction of *RHCE-D[5, 7]-CE* allele genotype result and for the polymorphism genotype results *GYPB:c.143*, *GYPB:c.230* and *GYPB:c.270+5* for the prediction of *GYPB*deletion* allele genotype result.

8. TROUBLESHOOTING

Please refer to the ID CORE XT Package Insert (Part Number: 1021700401) for troubleshooting.

9. TRADEMARKS

The following product names and any registered and unregistered trademarks mentioned in this document are used for identification purposes only and remain the exclusive property of their respective owners.

ID CORE CONTROL, ID CORE XT, ID CORE XT ANALYSIS SOFTWARE	Progenika Biopharma S.A.
Veriti	Applera HS Corporation

10. SYMBOLS USED IN PACKAGING



Consult the Instructions for Use



Manufacturer



Sufficient for N Tests



Temperature Limitation

REF

Catalog Number



Expiration Date



Lot Number



In vitro diagnostic medical device

11. CUSTOMER AND TECHNICAL SERVICES

Contact Grifols Customer Service to order additional reagents. Contact Grifols Technical Service for comments or questions on ID CORE CONTROL procedures, equipment, reagents, or data analysis.

Grifols Customer Service:

Telephone: (888) 244-7667

Or: (510) 923-5100

E-mail: DxSCMCustomer.Service@grifols.com

Grifols Technical Service:

Telephone: (800) 452-6877

E-mail: service.americas@grifols.com