
EasySeq™ Human DNA Sample Identification Kits

Technical Performance sheet



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- ✓ Human DNA Sample ID Kit 96 rxn
 - ✓ Human DNA Sample ID Blood Direct Kit 96 rxn
 - ✓ Human DNA Sample ID Hereditary Cancer Kit 96 rxn



Sequencing.
Simpler. Smarter. Safer.

Introduction - EasySeq™ Human DNA Sample Identification Kits

Addressing Sample Misidentification in NGS Workflows

Complex sample preparation workflows and challenges handling multiple Next-Generation Sequencing (NGS) samples make misidentification of samples at any stage of the analytical process a recognizable concern.

A method for independent confirmation of sample identity is therefore highly desirable, preferably using an identification method that is intrinsic to the WGS/WES data of the biological sample and simple to incorporate into the existing NGS workflow.

EasySeq™ Human DNA Sample Identification Kits, powered by patented Reverse Complement PCR (RC-PCR) technology, facilitate an effective end-to-end identification and tracking of independent samples in a single targeted sequencing assay that is purpose-designed for fast and efficient lab processing.

EasySeq™ Human DNA Sample Identification Kits are complementary to both Whole Exome and Whole Genome Sequencing workflows. Sample IDs are matched with WES/WGS data and, as a result, data integrity and validity can be confirmed.

Another application of the EasySeq™ Human DNA Sample Identification Kit is the confirmation of cell line authentication in Human Cell-line Culturing.

→ [Read more about all human sample identification kits](#)



Optimized panel of 40 exonic targets

EasySeq™ Human DNA Sample Identification Kits comprise an optimized panel of 40 exonic targets, the genotypic profile which can be utilized to extract intrinsic identifiers from the human exome and genome. 37 exonic single nucleotide polymorphisms (SNPs) with high minor allele frequency (MAF), and Amelogenin X - Y and TXLNGY for gender determination (Table 1).

Table 1 EasySeq™ Human DNA Sample Identification Kit Targets Overview							
#	SNP	Chr	Gene	Location hg38	Location hg19	MAF	ALFA Total
1	rs1410592	1	NPHS2	179557371	179520506	G	0,374144
2	rs2229546	1	IL12RB2	67395837	67861520	C	0,35182
3	rs10203363	2	COL4A4	227032260	227896976	T	0,44476
4	rs2819561	3	SUMF1	4362083	4403767	A	0,432928
5	rs4688963	4	EVC	5748177	5749904	C	0,375104
6	rs309557	5	VCAN	83538811	82834630	T	0,495618
7	rs7738	7	BLVRA	43807004	43846603	G	0,39911
8	rs4735258	8	PDP1	93923709	94935937	C	0,42266
9	rs4870723	8	COL14A1	120216440	121228679	C	0,492677
10	rs7465584	8	FER1L6	123975238	124987478	C	0,466264
11	rs1381532	9	TDRD7	97428498	100190780	G	0,494669
12	rs1536928	9	OR1B1	122629130	125391409	G	0,48492
13	rs1572983	9	BAAT	101371346	104133628	C	0,315905
14	rs577993	9	PRUNE2	76706955	79321871	C	0,372343
15	rs10883099	10	HPSE2	98459557	100219314	G	0,489745
16	rs4617548	11	SOX6	16111867	16133413	A	0,496018
17	rs7300444	12	WNK1	884764	993930	T	0,426319
18	rs495680	13	STARD13	33129519	33703656	T	0,384773
19	rs9532292	13	FREM2	38859469	39433606	G	0,333352
20	rs11158685	14	PLEKHH1	67575857	68042574	A	0,495745
21	rs4577050	15	SLC12A6	34236747	34528948	G	0,339184
22	rs17715450	16	CDH3	68695882	68729785	C	0,43336
23	rs1026128	17	COG1	73200670	71196809	A	0,474133
24	rs1037256	17	COG1	73201609	71197748	G	0,478103
25	rs1292053	17	TUBD1	59886176	57963537	G	0,450754
26	rs2159132	17	COX10	14102122	14005439	G	0,436677
27	rs1805034	18	TNFRSF11A	62360008	60027241	C	0,47866
28	rs3826616	18	SERPINB8	63987229	61654463	A	0,432558
29	rs9962023	18	LAMA3	23833905	21413869	T	0,30934
30	rs2228611	19	DNMT1	10156401	10267077	C	0,499414
31	rs10373	20	FERMT1	6119441	6100088	A	0,466702
32	rs2296241	20	CYP24A1	54169680	52786219	G	0,469989
33	rs4148973	21	NDUFV3	42903480	44323590	T	0,416006
34	rs760482	22	DNAL4	38782696	39178701	G	0,31297
35	rs2073787	X	RGAG1	710451457	109694685	A	0,44298
36	rs5930933	X	ADGRG4	136349199	135431358	T	0,474134
37	rs6568050	X	ZCCHC16	712454808	111698036	C	0,460272
38	AMELOGENIN-X	X					
39	AMELOGENIN-Y	Y					
40	TXLNGY	Y					



EasySeq™ Human DNA Sample Identification Kit

Part Number: RC-SID096

- A set of 40 exonic targets for extensive spread in the exome, to obtain a complete data set
- Additional Y-chromosomal targets for sex determination
- High sensitivity and specificity; extremely low number of off-target reads
- Optimized intra-locus balancing; optimal use of sequencing capacity
- Short amplicons; shorter sequencing time and lower costs

→ Webshop link

Figure 1 | Integrated Sample Tracking and Data Confirmation Workflow

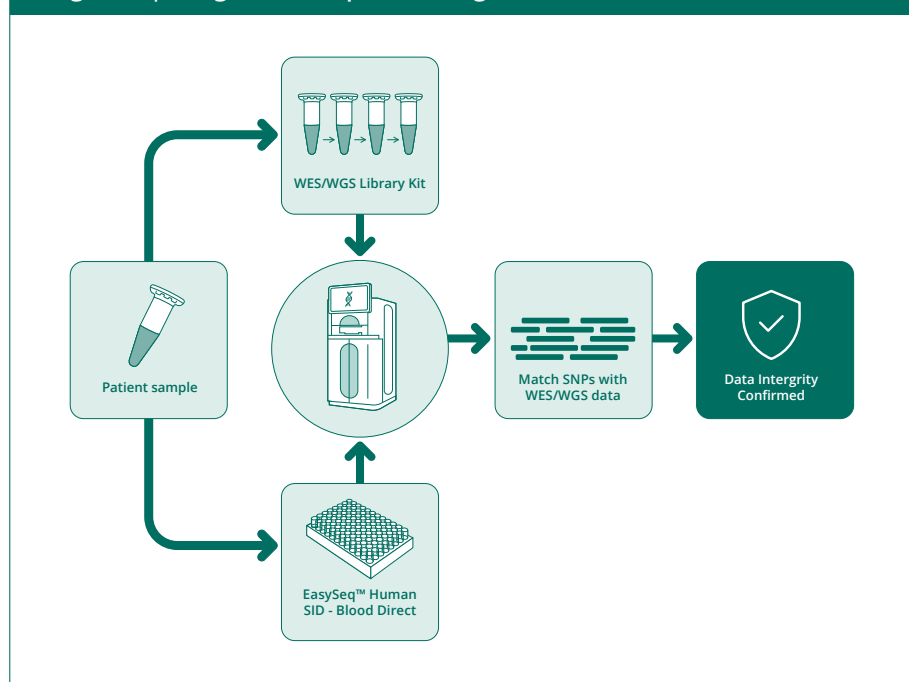
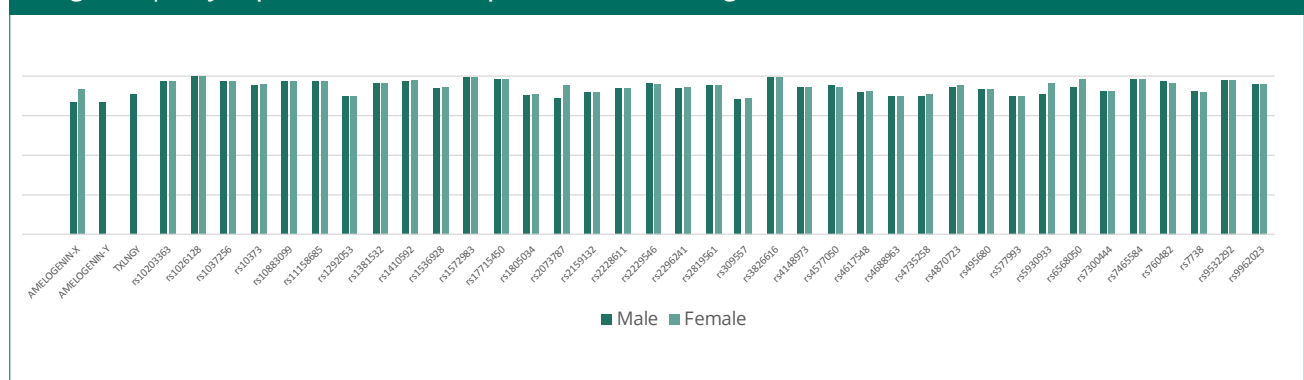


Figure 2 | EasySeq™ Human DNA Sample Identification target balance



EasySeq™ Human DNA Sample Identification Kit – Blood Direct

Part Number: RC-BDSID096

- Directly compatible with fresh or frozen blood and dried blood spots; validate your sample identity from the very first step of the WES/WGS workflow, including DNA isolation
- A set of 40 exonic targets for extensive spread in the exome, to obtain a complete data set
- Additional Y-chromosomal targets for sex determination
- High sensitivity and specificity; extremely low number of off-target reads
- Optimized intra-locus balancing; optimal use of sequencing capacity
- Short amplicons; shorter sequencing time and lower costs

→ Webshop link

Figure 3 | Integrated Sample Identification and Data Confirmation Workflow – Blood Direct

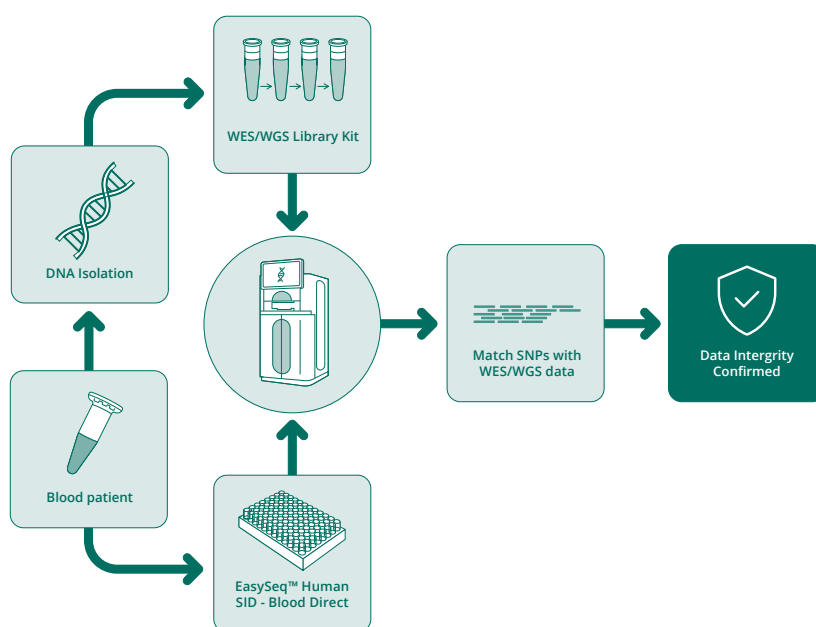
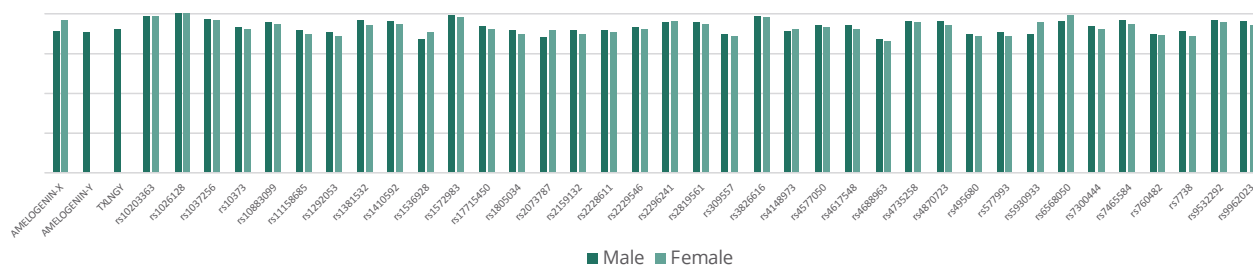


Figure 3 | Integrated Sample Identification and Data Confirmation Workflow – Blood Direct



EasySeq™ Human DNA Sample Identification Kit – Hereditary Cancer

Part Number: **RC-SIDHC096**

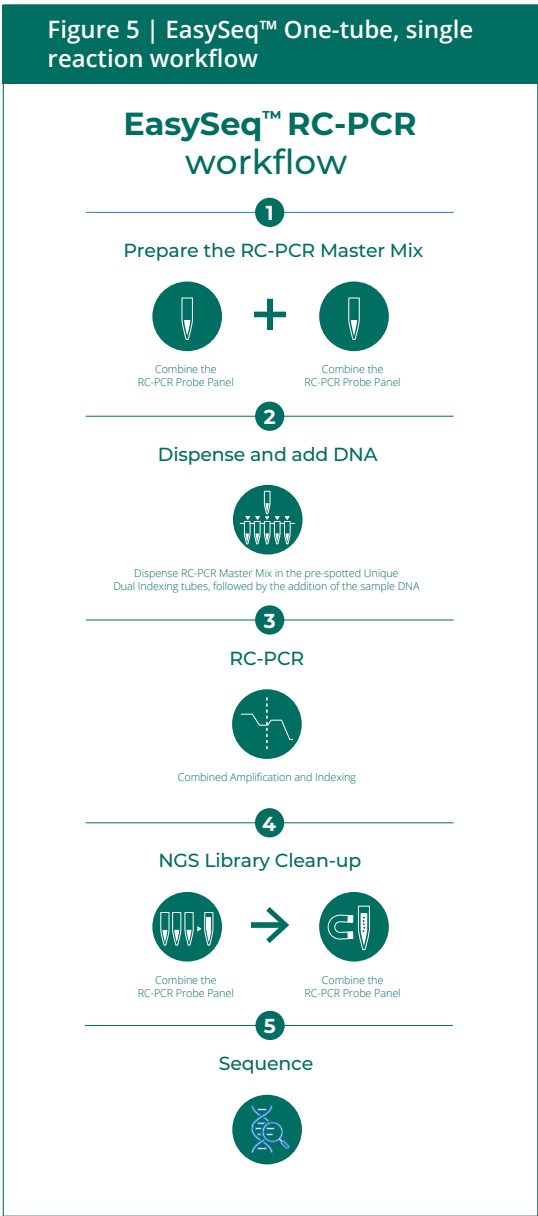
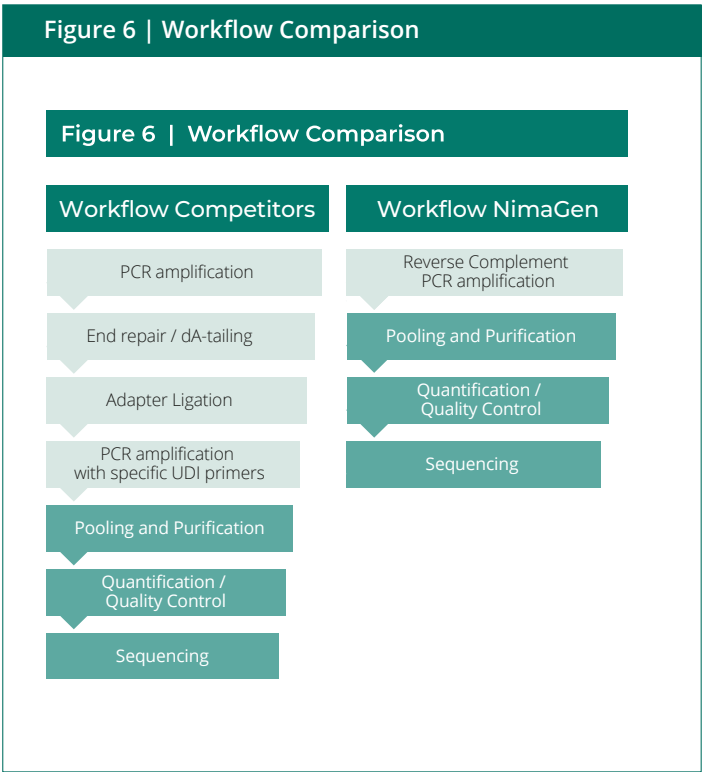
→ Webshop link

EasySeq™ Human DNA Sample Identification Hereditary Cancer Kit 96 rxn			
rs3219489	rs1799977	rs2228230	rs1801406
AMEL-X AMEL-Y	rs1042522	rs799917	
rs357564	rs2071313	rs1800860	rs26279
rs1800392	rs7862221	rs1126417	rs1800935
rs17807673	rs13712	rs4986764	rs13054014
rs866006	rs2736098	rs3744093	rs11528010
rs2066827	rs3852673	rs1801552	rs1126497
rs41737	rs7935	rs709816	rs8556



One-Tube, Single-Reaction NGS Library Prep with RC-PCR

Our EasySeq™ Human DNA Sample Identification Kits utilize RC-PCR technology to create a simple and safe one-tube, single reaction NGS library prep workflow. Multiplex target amplification, sequencing adaptor addition and sample-specific unique dual indexing all occur simultaneously in a closed-tube reaction, as simple as any normal PCR. Multiplex reactions are pooled and cleaned-up in a single tube using magnetic bead (AMPure XP or AmpliClean™ recommended), thereby eliminating the need to clean-up reactions separately (Figure 5). Therefore, RC-PCR greatly reduces the amount of hands-on steps and the associated risks of pipetting errors, sample swaps and cross-contamination (Figure 6).



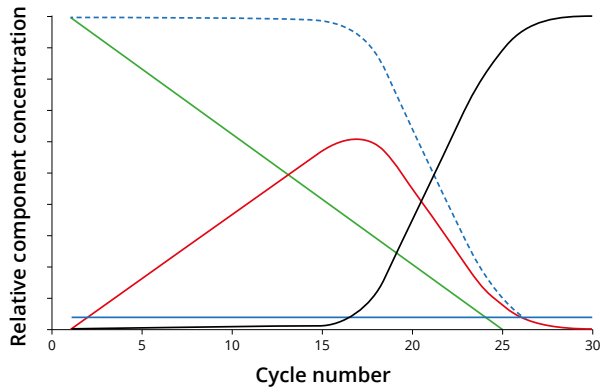
Seamless, High-Sensitivity NGS Library Prep with RC-PCR Technology

The unique kinetics of RC-PCR result in high sensitivity and specificity because target-specific primers are synthesized during the reaction.

Therefore, concentrations of primers and amplicons are more in line, which reduces potential primer dimerization and off-target primer binding (Figure 7).

Every EasySeq NGS Library Prep Kit includes a target-specific Probe Panel and the RC-PCR Master Mix, compatible with universal index (IDX) plates containing pre-spotted and dehydrated Unique Dual Index (UDI) primers.

Figure 7 | RC-PCR Kinetics



Ordering Information

EasySeq™ Human DNA Sample Identification Kits

Part Number	Description
RC-SID096	EasySeq™ Human DNA Sample ID Kit 96 rxn
RC-BDSID096	EasySeq™ Human DNA Sample ID Blood Direct Kit 96 rxn
RC-SIDHC096	EasySeq™ Human DNA Sample ID Hereditary Cancer Kit 96 rxn

Note: Each kit contains 1 panel/sample (96 rxn), including PCR Master Mix and Probe Dilution Buffer.

Magnetic Beads for NGS Library Clean-up

Part Number	Availability	Description
AP-005, AP-050, AP-500	5 mL, 50 mL, 500 mL	AmpliClean™ Cleanup Kit Magnetic Beads

Note: AmpliClean™ Magnetic Beads: required, ordered separately.

Unique Dual Index Primer Plate 96 rxn

Part Number	Unique Dual Index numbers	Part Number	Unique Dual Index numbers
IDX96-U01	UDI #0001-0096	IDX96-U04	UDI #0289-0384
IDX96-U02	UDI #0097-0192	IDX96-U05	UDI #0385-0480
IDX96-U03	UDI #0193-0288	IDX96-U06	UDI #0481-0576

Note: On request we can increase the number of unique numbers and plates to 8 x 96.

Company Information

NimaGen B.V.
Hogelandseweg 88
6545AB Nijmegen
The Netherlands

T +31 (0)24 820 0241
E info@nimagen.com
www.nimagen.com

Product Names

EasySeq™ Human DNA Sample ID Kit 96 rxn
EasySeq™ Human DNA Sample ID Blood Direct Kit 96 rxn
EasySeq™ Human DNA Sample ID Hereditary Cancer Kit 96 rxn
AmpliClean™ Cleanup Kit Magnetic Beads

Product Use

For Research Use Only

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