

Hem Select

Next Generation Blood Group Genotyping

Next Generation Sequencing (NGS) Makes the Difference

- High throughput, low hands-on time
- Capable of assaying hundreds of variants in one reaction
- Easy incorporation of newly observed variants and phenotypes
- Extremely high accuracy
- The only approach that enables low-cost screening of a donor cohort at population scale

A Modular Assay

- Run up to 384 samples of the CORE panel (19 blood group systems) in a single run*
- Run up to 192 samples of the CORE and EXPANDED panels together (39 blood group systems) in a single run*

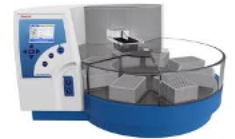
**Illumina MiniSeq System Mid Output Kit*

An Ideal Laboratory Workflow

With a rapid and robust protocol that takes only two and a half hours from DNA to Sequencing, you can obtain next day results for over 300 predicted phenotypes from as few as 96 to as many as 864 samples per day using an Illumina Benchtop Sequencer.

How it Works

DNA samples extracted from whole blood are amplified using a targeted multiplex PCR reaction barcoded using provided index reagents and multiplexed by simply combining the individual reactions to create an NGS library. Following quantification, the NGS library is loaded on an Illumina Benchtop Sequencer for data acquisition. Upon completion, the raw data files are uploaded to the HaploGNX analysis server, where the analysis software assigns the genotypes and generates predicted phenotypes.



DNA Extraction



Library Prep



Multiplexing



Sequencing



Analysis

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Hapl GNX

Hem Select V4

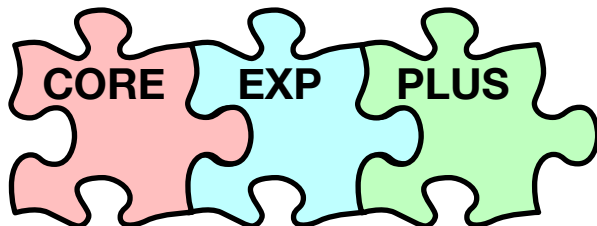
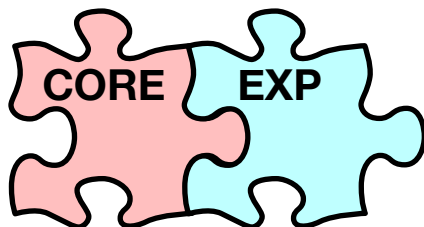
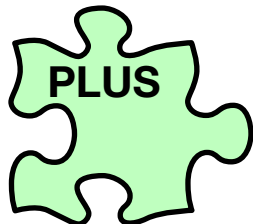
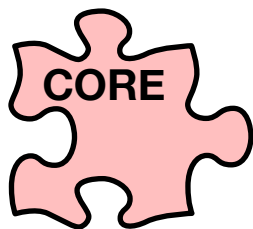
Next Generation Blood Group Genotyping

A Modular Assay - Mix and Match

CORE: 17 Blood Group Systems

EXPANDED: 21 Blood Group Systems

PLUS: ABO, Platelets, Neutrophils, G6PD, HBB



More
Samples / Run

More
Variants / Sample

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HemoSelect V4

Next Generation Blood Group Genotyping

Blood Group Antigens in HemoSelect V4 CORE

System	Gene	Antigens
002-MNS	GYPA	N,M,Mg,Mc,MNTD,SUMI,He,Vw,Vr,Mta,Ria,Nya,Hut,Or,ERIK,Osa,MARS,ENEV,SAR A,Hil,MINY,Mur,DANE,Enda,Hop,Nob,ENKT,Sta
002-MNS	GYPB	S,s,U,Mv,sD,Mit,Dantu,He,Mia
004-RH	RHCE	C,c,E,e,V,VS,hrB,hrS,Crawford,CEAG,CELO,Bea,LOCR,RH26,JAL,CEST,DHAR,FP PT,MAR,PARG,JAHK,CW,CX,PERG,RH32,Sec,DAK
004-RH	RHD	D,Dneg,Dweak,DDE,DMH,DKK,DVII,DFR,DNT,DSPM,DKK,DNS,DFR,DFW,DFL,DMA ,DSPM,DDN,DHQ,DMI,DFV,DCS,DHO,DHR,DYU,DTO,DVL,DUC2,DSPM,DBU,DCC ,DLX,DBA,DBS,DHMi,DIIeM,DLO,DBU,DLX,DNT,DII,DNAK,DNB,DNU,DWI,DBU,DW N,DAU,DIII, DIV,DV,DVI,DAR,DAU,DOL,DBT
005-LU	BCAM	Lua,Lub,Lu5,Lu7,Aua,Aub,Lu4,Lu5,Lu6,Lu7,Lu8,Lu9,Lu12,Lu13,Lu14,Lu16,Lu1 7,Lu18Lu19,Lu20,Lu21,Lu22,Lu23,Lu24,Lu25,Lu26,Lu27,Lu28,Lu29, Lu30
006-KEL	KEL	K,k,kpa,kpb,kpc,Jsa,Jsb,Ula,KEL11,KEL12,KEL14,KEL17,KEL18,KEL19, KEL22,KEL23,KEL24,VLAN,VONG,TOU,RAZ,KALT,KTIM,KEL31,KEL38,KUCI,KA NT,KASH,KELP,KETI,KHUL,KEAL,KHIZ,KHOZ
008-FY	ACKR1	Fya,Fyb,FY3,Fyx,GATA
009-JK	SLC14A1	Jka,Jkb,Jk3
010-DI	SLC4A1	Dia,Dib,Wra,Wrb,DISK,Wd,Rb,WARR,ELO,Wu,Bpa,Moa,Hga,Vga,Swa,BOW,NFLD, Jna,KREP,Tra,Fra,DIST
011-YT	ACHE	Yta,Ytb,YTEG,YTLI,YTOT
013-SC	ERMAP	Sc1,Sc2,Sc3,Rd,STAR,SCER,SCAN,SCAC
014-DO	ART4	Doa,Dob,Hy,Joa,DOMR,DODE,Gya
015-CO	AQP1	Coa,Cob,Co3,Co4
016-LW	ICAM4	LWa,LWb,LWEM
017-ChRg	C4A	Rg1,Rg2,WH
017-ChRg	C4B	Ch1,Ch2,Ch3,Ch4,Ch5,Chr6
020-GE	GYPC	Ge2,Ge3,Ge4,Lsa,Ana,GEIS,GEPL,GEAT,GETI,GECT,GEAR,Wb,Dha
021-CROM	CD55	Cra,Tca,Tcb,Tcc,Esa,WESa,WESb,UMC,GUTI,ZENA,CRAM,CRAG, CROK,CROV,CROZ,CRUE,CORS,Dra,SERF,Inab
022-KN	CR1	Kna,Knb,McCa,McCb,Yka,SI1,Vil,SI3,KCAM,KDAS,DACY,YCAD
023-IN	CD44	Ina,Inb,INFI,INJA,INRA,INSL

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Blood Group Antigens in HemoSelectV4 EXPANDED

System	Gene	Antigens
018-H	FUT1	H
019-KX	XK	Kx
024-OK	BSG	Oka
025-RAPH	CD151	Raph
026-JMH	SEMA7A	Jmh,Jmhk,Jmhl,Jmhg,Jmhm,Jmhq,Jmhn,Jmha
027-I	GCNT2	I
028-GLOB	B3GALNT1	P
029-GIL	AQP3	Gil
030-RHAG	RHAG	RHAG1,RHAG2,DSLK,Kg,SHER,THIN
031-FORS	GBGT1	Fors
032-JR	ABCG2	Jra
033-Lan	ABCB6	Lan
034-VEL	SMIM1	Vel
035-CD59	CD59	CD59
036-AUG	SLC29A1	AUG,Ata,ATML,ATAM
037-KANNO	PRNP	Kanno
038-SID	B4GALNT2	Sda
039-CTL2	SLC44A2	Ver,Rif
040-PEL	ABCC4	Pel
041-MAM	EMP3	Mam
044-ER	PIEZO1	Era,Erb,Er3,ERSA,ERAMA

Blood Group Antigens in HemoSelectV4 PLUS

System	Gene	Antigens
001-ABO	ABO	A1,A2,A3,Am,Ael,cisAB,A,BA,B1,B2,B3,Bel,B,O1,O2,O3,O5,O6,O7,O8,O11,O12,O13,O14,O15,O16,O
HPA	ITGB3	HPA1,HPA4,HPA6,HPA8,HPA10,HPA11,HPA14,HPA16,HPA19,HPA21,HPA23,HPA26,HPA32,HPA34,HPA35
HPA	GP1BA	HPA2
HPA	ITGA2B	HPA3,HPA9,HPA27
HPA	ITGA2	HPA5,HPA13
HPA	CD109	HPA15
HPA	GP9	HPA31
HNA	FCGR3B	HNA1a,HNA1b
HNA	CD177	HNA2
HNA	SLC44A2	HNA3
HNA	ITGAM	HNA4
HNA	ITGAL	HNA5
HBB	HBB	HbC,HbE,HbS, β -thalassemia mutations
G6PD	G6PD	Glucose-6-phosphate-dehydrogenase deficiency

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Support & Ordering: info@haplognx.com

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