

Appendix

CRISPR-Enabled Point-of-Care Genotyping for *APOL1* Genetic Risk Assessment

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Appendix Table S1: Oligonucleotides included in this study.

Description	Used in	Sequence (5' - 3')
<i>APOL1</i> G1 wildtype; Construct for <i>Off-target (A)</i>	Fig. 1b	gaaattaatacactcactataggGCCAATCTCAGCTGAAAG CGGTGAACAGGTGGAGAGGGTTAATGAACCCA GCATCCTGGAAATGAGCAGAGGAGTCAAGCTC ACGGATGTGGCCCCTGTAAGCTTCTTTCTTGTG CTGGATGTAGTCTACCTCGTGTACGAATCAAAG CACTTACATGAGGGGGCAAAGTCAGAGACAGC TGAGGAGCTGAAGAAGGTGGC
<i>APOL1</i> G1 mutant; Construct for <i>On-target (G)</i>	Figs. 1b, 2a	gaaattaatacactcactataggGCCAATCTCAGCTGAAAG CGGTGAACAGGTGGAGAGGGTTAATGAACCCA GCATCCTGGAAATGAGCAGAGGAGTCAAGCTC ACGGATGTGGCCCCTGTAGGCTTCTTTCTTGTG CTGGATGTAGTCTACCTCGTGTACGAATCAAAG CACTTACATGAGGGGGCAAAGTCAGAGACAGC TGAGGAGCTGAAGAAGGTGGC
Construct for crRNA1	Fig. 1b	CAAGCTCACGGATGTGGCCCCTGTGGGCGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCccctat agtgagtcgtattaatttc
Construct for crRNA2	Fig. 1b	CAAGCTCACGGATGTGGCCCCTGTAGGAGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCccctat agtgagtcgtattaatttc
Construct for crRNA3	Fig. 1b	CAAGCTCACGGATGTGGCCCCTGTAGGGGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCccctat agtgagtcgtattaatttc
Construct for crRNA4	Fig. 1b	CAAGCTCACGGATGTGGCCCCTGTAGGTGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCccctat agtgagtcgtattaatttc
Construct for crRNA5	Fig. 1b	CAAGCTCACGGATGTGGCCCCTGTGGGGGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCccctat agtgagtcgtattaatttc
Construct for crRNA6	Fig. 1b	CAAGCTCACGGATGTGGCCCCTGTGGCCGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCccctat agtgagtcgtattaatttc
Construct for crRNA7	Fig. 1b	CAAGCTCACGGATGTGGCCCCTGAGGGCGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCccctat agtgagtcgtattaatttc
Construct for crRNA8	Fig. 1b	CAAGCTCACGGATGTGGCCCCTCTGGGCGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCccctat agtgagtcgtattaatttc
Construct for crRNA9	Fig. 1b	CAAGCTCACGGATGTGGCCCCAGTGGGCGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCccctat agtgagtcgtattaatttc

<i>APOL1</i> G2 mutant; Construct for <i>Off-target</i> (<i>delTTATAA</i>)	Figs. 1d, EV3d	gaaattaatacagactcactataggATCAAAGCACTTACATGA GGGGGCAAAGTCAGAGACAGCTGAGGAGCTGA AGAAGGTGGCTCAGGAGCTGGAGGAGAAGCTA AACATTCTCAACAATAAGATTCTGCAGGGCGGAC CAAGAACTGTGACCACAGGGCAGGGCAGCCAC CAGGAGAGATATGCCTGGCAGGGGCCAGGACA AAATGCAAACCTT
<i>APOL1</i> G2 wildtype; Construct for <i>On-target</i> (<i>TTATAA</i>)	Figs. 1d, 2d, EV3d	gaaattaatacagactcactataggATCAAAGCACTTACATGA GGGGGCAAAGTCAGAGACAGCTGAGGAGCTGA AGAAGGTGGCTCAGGAGCTGGAGGAGAAGCTA AACATTCTCAACAATAATTATAAGATTCTGCAG GCGGACCAAGAACTGTGACCACAGGGCAGGGC AGCCACCAGGAGAGATATGCCTGGCAGGGGCC AGGACAAAATGCAAACCTT
Construct for crRNA10	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACGAGGAGAAGCTAAACATTCTCAACAATAA Tcctatagtgagtcgtattaatttc
Construct for crRNA11	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACAGGAGAAGCTAAACATTCTCAACAATAAT Tcctatagtgagtcgtattaatttc
Construct for crRNA12	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACGGAGAAGCTAAACATTCTCAACAATAATT Acctatagtgagtcgtattaatttc
Construct for crRNA13	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACGAGAAGCTAAACATTCTCAACAATAATTAT cctatagtgagtcgtattaatttc
Construct for crRNA14	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACAGAAGCTAAACATTCTCAACAATAATTATA cctatagtgagtcgtattaatttc
Construct for crRNA15	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACGAAGCTAAACATTCTCAACAATAATTATAA cctatagtgagtcgtattaatttc
Construct for crRNA16	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACAAGCTAAACATTCTCAACAATAATTATAAG cctatagtgagtcgtattaatttc
Construct for crRNA17	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACAGCTAAACATTCTCAACAATAATTATAAGA cctatagtgagtcgtattaatttc
Construct for crRNA18	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACGCTAAACATTCTCAACAATAATTATAAGAT cctatagtgagtcgtattaatttc
Construct for crRNA19	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACCTAAACATTCTCAACAATAATTATAAGATT cctatagtgagtcgtattaatttc
Construct for crRNA20	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACTAAACATTCTCAACAATAATTATAAGATTC cctatagtgagtcgtattaatttc

Construct for crRNA21	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACAAACATTCTCAACAATAATTATAAGATTCT cctatagtgagtcgtattaatttc
Construct for crRNA22	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACAAACATTCTCAACAATAATTATAAGATTCTG cctatagtgagtcgtattaatttc
Construct for crRNA23	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACACATTCTCAACAATAATTATAAGATTCTGC cctatagtgagtcgtattaatttc
Construct for crRNA24	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACCATTCTCAACAATAATTATAAGATTCTGCA cctatagtgagtcgtattaatttc
Construct for crRNA25	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACATTCTCAACAATAATTATAAGATTCTGCAG cctatagtgagtcgtattaatttc
Construct for crRNA26	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACTTCTCAACAATAATTATAAGATTCTGCAGG cctatagtgagtcgtattaatttc
Construct for crRNA27	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACTCTCAACAATAATTATAAGATTCTGCAGGC cctatagtgagtcgtattaatttc
Construct for crRNA28	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACCTCAACAATAATTATAAGATTCTGCAGGCG cctatagtgagtcgtattaatttc
Construct for crRNA29	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACTCAACAATAATTATAAGATTCTGCAGGCGG cctatagtgagtcgtattaatttc
Construct for crRNA30	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACCAACAATAATTATAAGATTCTGCAGGCGG Acctatagtgagtcgtattaatttc
Construct for crRNA31	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACAAACAATAATTATAAGATTCTGCAGGCGGA Ccctatagtgagtcgtattaatttc
Construct for crRNA32	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACACAATAATTATAAGATTCTGCAGGCGGAC Ccctatagtgagtcgtattaatttc
Construct for crRNA33	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACCAATAATTATAAGATTCTGCAGGCGGACC Acctatagtgagtcgtattaatttc
Construct for crRNA34	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACAAATAATTATAAGATTCTGCAGGCGGACCA Acctatagtgagtcgtattaatttc
Construct for crRNA35	Fig. 1d	GTTGTCATACCTATCCAAACGATAAGCTTCTAC AACATAATTATAAGATTCTGCAGGCGGACCAA Gcctatagtgagtcgtattaatttc
<i>APOLI</i> G0G0	Figs. 3a- d, 3f, 4c-	gaaattaatacagactcaactataggGCGGTGAACAGGTGGAGA GGGTTAATGAACCCAGCATCCTGGAAATGAGC

	e, 5b, 6b, EV3	AGAGGAGTCAAGCTCACGGATGTGGCCCCTGT AAGCTTCTTTCTTGTGCTGGATGTAGTCTACCTC GTGTACGAATCAAAGCACTTACATGAGGGGGC AAAGTCAGAGACAGCTGAGGAGCTGAAGAAGG TGGCTCAGGAGCTGGAGGAGAAGCTAAACATT CTCAACAATAATTATAAGATTCTGCAGGGCGGAC CAAGAAGTGTGACCACAGGGCAGGGCAGCCAC CAGGAGAGATA
<i>APOL1</i> G1G1	Figs. 2c, 3a-e, 4c- e, 5b, 6b, EV2, EV3c	gaaattaatacactactataggGCGGTGAACAGGTGGAGA GGGTTAATGAACCCAGCATCCTGGAAATGAGC AGAGGAGTCAAGCTCACGGATGTGGCCCCTGT AGGCTTCTTTCTTGTGCTGGATGTAGTCTACCTC GTGTACGAATCAAAGCACTTACATGAGGGGGC AAAGTCAGAGACAGCTGAGGAGCTGAAGAAGG TGGCTCAGGAGCTGGAGGAGAAGCTAAACATT CTCAACAATAATTATAAGATTCTGCAGGGCGGAC CAAGAAGTGTGACCACAGGGCAGGGCAGCCAC CAGGAGAGATA
<i>APOL1</i> G2G2	Figs 3a-e, 4c-e, 5b, 6b, EV2, EV3c	gaaattaatacactactataggAAAGCGGTGAACAGGTGG AGAGGGTTAATGAACCCAGCATCCTGGAAATG AGCAGAGGAGTCAAGCTCACGGATGTGGCCCC TGTAAGCTTCTTTCTTGTGCTGGATGTAGTCTAC CTCGTGTACGAATCAAAGCACTTACATGAGGG GGCAAAGTCAGAGACAGCTGAGGAGCTGAAGA AGGTGGCTCAGGAGCTGGAGGAGAAGCTAAAC ATTCTCAACAATAAGATTCTGCAGGGCGGACCAA GAACTGTGACCACAGGGCAGGGCAGCCACCAG GAGAGATATGC
Construct for crRNA36	Fig. 3e	GCCTGCAGAATCTTATTGTTATCTACTTAGT AGAAATTAacctatagtgagtcgtattaatttc
Construct for crRNA37	Fig. 3e	AAGCTAAACATTCTCAACAAATCTACTTAGT AGAAATTAacctatagtgagtcgtattaatttc
RPA primer: F1	Figs. 2a, c	gaaattaatacactactataggGTTAATGAACCCAGCATC CTGGAAATGAGC
RPA primer: F2	Fig. 2a	gaaattaatacactactataggTGAACAGGTGGAGAGGGT TAATGAACCCAG
RPA primer: F3	Fig. 2a	gaaattaatacactactataggTCAGCTGAAAGCGGTGAA CAGGTGGAGAGG
RPA primer: R1	Fig. 2a	ATGTAAGTGCTTTGATTCGTACACGAGGTAGA
RPA primer: R2	Fig. 2a	CCCTCATGTAAGTGCTTTGATTCGTACACG
RPA primer: R3	Fig. 2a	CCTCAGCTGTCTCTGACTTTGCCCCCTCAT
RPA primer: F4	Fig. 2b	gaaattaatacactactataggCTGAAGAAGGTGGCTCAG GAGCTGGAGAG
RPA primer: F5	Fig. 2b	gaaattaatacactactataggATCAAAGCACTTACATGA GGGGGCAAAGTC
RPA primer: F6	Fig. 2b	gaaattaatacactactataggAAGTCAGAGACAGCTGAG GAGCTGAAGAAG

RPA primer: R4	Fig. 2b	CTGCCCTGCCCTGTGGTCACAGTTCTTGGT
RPA primer: R5	Fig. 2b	CCCTGCCAGGCATATCTCTCCTGGTGGCTG
RPA primer: R6	Fig. 2b	AAGTTTGCATTTTGTCCCTGGCCCCTGCCAG
RPA primer: F8	Fig. 2c	gaaattaatacactcactataggTTAATGAACCCAGCATC CTGGAAATGAG
RPA primer: F9	Fig. 2c	gaaattaatacactcactataggTTAATGAACCCAGCATCC TGGAAATGAGC
RPA primer: R7	Fig. 2c	ACAGTTCTTGGTCCGCCTGCAGAAT
RPA primer: R8	Fig. 2c	TGCCCTGTGGTCACAGTTCTTGGTC
RPA primer: R9	Fig. 2c	CTGCCCTGTGGTCACAGTTCTTGGT
AU-Texas Red reporter molecule	Fig. 4a	5TEX615/TArArUGC/3IAbRQSp
UUUUU-Fam reporter molecule	Fig. 4a	56-FAM/rUrUrUrUrU/3IABkFQ
AAAAA-Fam reporter molecule	Fig. 4a	56-FAM/rArArArArA/3IABkFQ
AAAAA-Texas Red reporter molecule	Fig. 4a	5TEX615/rArA rArArA /3IAbRQSp
TTATT-Hex reporter molecule	Fig. 4a	5HEX/TTATT/3IABkFQ
Digoxigenin-Fam reporter	Fig. 6b	56-FAM/TTATTATT/3DigN
Biotin-Fam reporter	Fig. 6b	56-FAM/UUUUUUUUUUUUUU/3Bio
Construct for crRNA38	Fig. EV3c	GCTCACGGATGTGGCCCCTGATCTACACTTAGT AGAAATTACCTATAGTGAGTCGTATTAATTTC
Construct for crRNA39	Fig. EV3c	GCTTACAGGGGCCACATCCGATCTACACTTAGT AGAAATTACCTATAGTGAGTCGTATTAATTTC
Construct for crRNA40	Fig. EV3c	CTCACGGATGTGGCCCCTGTATCTACACTTAGT AGAAATTACCTATAGTGAGTCGTATTAATTTC
Construct for crRNA41	Fig. EV3c	CAGCACAAGAAAGAAGCTTAATCTACACTTAG TAGAAATTACCTATAGTGAGTCGTATTAATTTC
Construct for crRNA42	Fig. EV3c	CCAGCACAAGAAAGAAGCTTATCTACACTTAGT AGAAATTACCTATAGTGAGTCGTATTAATTTC
Construct for crRNA43	Fig. EV3c	TCCAGCACAAGAAAGAAGCTATCTACACTTAGT AGAAATTACCTATAGTGAGTCGTATTAATTTC
Construct for crRNA44	Fig. EV3c	AGCTCACGGATGTGGCCCCTATCTACACTTAGT AGAAATTACCTATAGTGAGTCGTATTAATTTC
Construct for crRNA45	Fig. EV3c	GCACAAGAAAGAAGCTTACAATCTACACTTAG TAGAAATTACCTATAGTGAGTCGTATTAATTTC
Construct for crRNA46	Fig. EV3d	CTCAACAATAATTATAAGATTCTGCAGGGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCccat agtgagtcgtattaatttc
Construct for crRNA47	Fig. EV3d	TCAACAATAATTATAAGATTCTGCAGGCGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA48	Fig. EV3d	CAACAATAATTATAAGATTCTGCAGGCGTTTT AGTCCCCTTCGTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC

Construct for crRNA49	Fig. EV3d	AACAATAATTATAAGATTCTGCAGGCGGGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA50	Fig. EV3d	ACAATAATTATAAGATTCTGCAGGCGGAGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA51	Fig. EV3d	CAATAATTATAAGATTCTGCAGGCGGACGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA52	Fig. EV3d	AATAATTATAAGATTCTGCAGGCGGACCGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA53	Fig. EV3d	TCTCAACAATAATTATAAGATTCTGCAGGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA54	Fig. EV3d	TTCTCAACAATAATTATAAGATTCTGCAGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA55	Fig. EV3d	ATTCTCAACAATAATTATAAGATTCTGCGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA56	Fig. EV3d	CATTCTCAACAATAATTATAAGATTCTGGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA57	Fig. EV3d	ACATTCTCAACAATAATTATAAGATTCTGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA58	Fig. EV3d	AACATTCTCAACAATAATTATAAGATTTCGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA59	Fig. EV3d	AAACATTCTCAACAATAATTATAAGATTGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA60	Fig. EV3d	AGCTAAACATTCTCAACAATAATTATAAGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCccat agtgagtcgtattaatttc
Construct for crRNA61	Fig. EV3d	AGAAGCTAAACATTCTCAACAATAATTAGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA62	Fig. EV3d	TAAACATTCTCAACAATAATTATAAGATGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA63	Fig. EV3d	CTAAACATTCTCAACAATAATTATAAGAGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC

Construct for crRNA64	Fig. EV3d	GCTAAACATTCTCAACAATAATTATAAGGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA65	Fig. EV3d	AAGCTAAACATTCTCAACAATAATTATAGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
Construct for crRNA66	Fig. EV3d	GAAGCTAAACATTCTCAACAATAATTATGTTTT AGTCCCCTTCGTTTTTTGGGGTAGTCTAAATCCCT ATAGTGAGTCGTATTAATTTC
PCR reverse primer for sequencing		CTGCCAGGCATATCTCTCCT
PCR forward primer for sequencing		gaaattaatacgactcactataggACCAACTCACACGAGGCA TT

Appendix Table S2: P values.

Description	Figure	P value
crRNA 1	Fig. 1b	0.0007
crRNA 2	Fig. 1b	<0.0001
crRNA 3	Fig. 1b	<0.0001
crRNA 4	Fig. 1b	0.0004
crRNA 5	Fig. 1b	0.0024
crRNA 6	Fig. 1b	0.0063
crRNA 7	Fig. 1b	0.0006
crRNA 8	Fig. 1b	0.007
crRNA 9	Fig. 1b	<0.0001
crRNA 10	Fig. 1d	0.3263
crRNA 11	Fig. 1d	0.0004
crRNA 12	Fig. 1d	<0.0001
crRNA 13	Fig. 1d	0.0004
crRNA 14	Fig. 1d	0.0002
crRNA 15	Fig. 1d	0.0002
crRNA 16	Fig. 1d	<0.0001
crRNA 17	Fig. 1d	<0.0001
crRNA 18	Fig. 1d	<0.0001
crRNA 19	Fig. 1d	<0.0001
crRNA 20	Fig. 1d	<0.0001
crRNA 21	Fig. 1d	<0.0001
crRNA 22	Fig. 1d	<0.0001
crRNA 23	Fig. 1d	0.0001
crRNA 24	Fig. 1d	0.0027
crRNA 25	Fig. 1d	<0.0001
crRNA 26	Fig. 1d	<0.0001
crRNA 27	Fig. 1d	<0.0001

crRNA 28	Fig. 1d	0.0002
crRNA 29	Fig. 1d	<0.0001
crRNA 30	Fig. 1d	0.0002
crRNA 31	Fig. 1d	<0.0001
crRNA 32	Fig. 1d	0.0008
crRNA 33	Fig. 1d	<0.0001
crRNA 34	Fig. 1d	<0.0001
crRNA 35	Fig. 1d	0.0017
F2R1 (1 pM)	Fig. 2a	0.9980
F2R1 (10 fM)	Fig. 2a	0.0392
F3R1 (1 pM)	Fig. 2a	0.0376
F3R1 (10 fM)	Fig. 2a	0.1417
F1R2 (1 pM)	Fig. 2a	<0.0001
F1R2 (10 fM)	Fig. 2a	<0.0001
F2R2 (1 pM)	Fig. 2a	<0.0001
F2R2 (10 fM)	Fig. 2a	<0.0001
F3R2 (1 pM)	Fig. 2a	<0.0001
F3R2 (10 fM)	Fig. 2a	<0.0001
F1R3 (1 pM)	Fig. 2a	<0.0001
F1R3 (10 fM)	Fig. 2a	<0.0001
F2R3 (1 pM)	Fig. 2a	<0.0001
F2R3 (10 fM)	Fig. 2a	<0.0001
F3R3 (1 pM)	Fig. 2a	<0.0001
F3R3 (10 fM)	Fig. 2a	<0.0001
F4R4 (1 pM)	Fig. 2b	<0.0001
F4R4 (10 fM)	Fig. 2b	<0.0001
F5R4 (1 pM)	Fig. 2b	<0.0001
F5R4 (10 fM)	Fig. 2b	<0.0001
F6R4 (1 pM)	Fig. 2b	<0.0001
F6R4 (10 fM)	Fig. 2b	<0.0001

F4R5 (1 pM)	Fig. 2b	0.9970
F4R5 (10 fM)	Fig. 2b	<0.0001
F6R5 (1 pM)	Fig. 2b	0.5757
F6R5 (10 fM)	Fig. 2b	<0.0001
F4R6 (1 pM)	Fig. 2b	0.9220
F4R6 (10 fM)	Fig. 2b	<0.0001
F5R6 (1 pM)	Fig. 2b	0.9690
F5R6 (10 fM)	Fig. 2b	<0.0001
F6R6 (1 pM)	Fig. 2b	0.2113
F6R6 (10 fM)	Fig. 2b	<0.0001
F1R7 (1 pM)	Fig. 2c	0.9997
F1R7 (10 fM)	Fig. 2c	<0.0001
F8R7 (1 pM)	Fig. 2c	>0.9999
F8R7 (10 fM)	Fig. 2c	<0.0001
F7R8 (1 pM)	Fig. 2c	<0.0001
F7R8 (10 fM)	Fig. 2c	<0.0001
F8R8 (1 pM)	Fig. 2c	<0.0001
F8R8 (10 fM)	Fig. 2c	<0.0001
F9R8 (1 pM)	Fig. 2c	0.9971
F9R8 (10 fM)	Fig. 2c	<0.0001
F7R9 (1 pM)	Fig. 2c	<0.0001
F7R9 (10 fM)	Fig. 2c	<0.0001
F8R9 (1 pM)	Fig. 2c	<0.0001
F8R9 (10 fM)	Fig. 2c	<0.0001
F9R9 (1 pM)	Fig. 2c	0.0001
F9R9 (10 fM)	Fig. 2c	<0.0001
crRNA 36	Fig. 3f	<0.0001
crRNA 37	Fig. 3f	<0.0001
crRNA 38	Fig. EV3b	0.8309
crRNA 39	Fig. EV3b	0.204

crRNA 40	Fig. EV3b	0.0448
crRNA 41	Fig. EV3b	<0.0001
crRNA 42	Fig. EV3b	<0.0001
crRNA 43	Fig. EV3b	0.5172
crRNA 44	Fig. EV3b	0.9474
crRNA 45	Fig. EV3b	<0.0001
crRNA 46	Fig. EV3d	0.0054
crRNA 47	Fig. EV3d	0.0001
crRNA 48	Fig. EV3d	0.0106
crRNA 49	Fig. EV3d	<0.0001
crRNA 50	Fig. EV3d	<0.0001
crRNA 51	Fig. EV3d	0.0004
crRNA 52	Fig. EV3d	0.1664
crRNA 53	Fig. EV3d	<0.0001
crRNA 54	Fig. EV3d	0.0042
crRNA 55	Fig. EV3d	<0.0001
crRNA 56	Fig. EV3d	<0.0001
crRNA 57	Fig. EV3d	0.0033
crRNA 58	Fig. EV3d	<0.0001
crRNA 59	Fig. EV3d	0.0011
crRNA 60	Fig. EV3d	0.0008
crRNA 61	Fig. EV3d	0.0001
crRNA 62	Fig. EV3d	<0.0001
crRNA 63	Fig. EV3d	<0.0001
crRNA 64	Fig. EV3d	<0.0001
crRNA 65	Fig. EV3d	0.0017
crRNA 66	Fig. EV3d	0.0011

Appendix Table S3: APOL1 Genotyping Cost Analysis.

APOL1 genotyping methods	PCR followed by Sanger sequencing	Clinical diagnostics service	CRISPR (lateral-flow)	CRISPR (fluorescence)
Reference	New England Biolabs ^a . Eurofins Genomics ^b .	Wake Forest University School of Medicine ^c . Mass General Brigham Laboratory for Molecular Medicine ^d .	This paper.	This paper.
Time to result	~ 1 day	7 days - 21 days	~ 2.5 hours	~ 2.5 hours
Service cost (€)	~ 4 (sequencing)	~ 360 - 550	NA	NA
Equipment cost (€)	>10,000 (cyclor)	NA	2.90/ stick ^e 250 (heatblock*)	>10,000 (plate reader)
Reagent costs (€)				
PCR reagents	1.101	NA	NA	NA
PCR primers	0.002	NA	NA	NA
RPA reagents	NA	NA	0.45	0.45
RPA primers	NA	NA	0.02	0.02
Cas enzymes	NA	NA	1.24	0.86
crRNAs	NA	NA	0.04	0.01
Reporter molecules	NA	NA	0.06	0.64
Other (buffer/ mase inhibitor/ rNTPs/ T7 polymerase)	NA	NA	1.22	0.64
Total reagent costs (€)	1.1	NA	3.02	2.62
Hands-on time	<1 hr	NA	<1 hr	<1 hr
POC compatibility				
Isothermal incubation	No	No	Yes	Yes
Minimal equipment	No	No	Yes	No
Visual output	No	No	Yes	No

a. New England Biolabs Q5 High Fidelity DNA Polymerase (<https://www.neb-online.de/art/M0491>).

b. Eurofins Genomics Mix2Seq Kits (<https://eurofinsgenomics.eu/de/custom-dna-sequencing/eurofins-services/mix2seq-kits/>).

c. Wake Forest University School of Medicine; APOL1 Genetic Test (<https://school.wakehealth.edu/departments/internal-medicine/nephrology/nephrology-research/apo11-genetic-test>).

d. Mass General Brigham Laboratory for Molecular Medicine (<https://www.massgeneralbrigham.org/en/research-and-innovation/centers-and-programs/personalized-medicine/molecular-medicine/tests/pricing-turnaround-time-cpt-codes>).

e. Milenia Biotec HybriDetect 2T (<https://www.milenia-biotec.com/en/product/hybridetect-2t/>).

* CRISPR-based diagnostics assays have been reported which could be completed without heatblocks and simply used body heat as a heat source: Arizti-Sanz *et al.* Simplified Cas13-based assays for the fast identification of SARS-CoV-2 and its variants. *Nat. Biomed. Eng* 6, 932–943 (2022).