

RH (ISBT 004) Blood Group Alleles: RHCE

The Rh blood group system consists of 54 antigens, many of which are encoded at the *RHCE* locus and also include a number encoded by hybrid *RHCE* with *RHD*. Commonly encountered antigens include C, E, c, e, f, Ce, C^w, C^x, V, VS, cE, and CE. The less common include hr^S, hr^B, E^w, Hr₀, Hr, C^G, Rh26 c-like, hr^H, Rh32, Rh33, Rh35, Be^a, Rh39, Rh41, Rh42, Crawford, Nou, Riv, Sec, Dav, JAL, STEM, MAR, JAHK, LOCR, CENR, CEST, CELO, CEAG, PARG, and CEVF. Antigens encoded from either *RHCE* or *RHD* loci include G, FPTT, BARC, DAK, Rh29, and Hr^B. The protein consists of 12 membrane-spanning domains and 417 amino acids.

Gene name: *RHCE*
 Number of exons: 10
 Initiation codon: within exon 1
 Stop codon: within exon 10

Entrez Gene ID: 6006
 NCBI RefSeq: NG_009208 (gene)
 NM_020485 (mRNA)
 NP_065231 (protein)

Preferred: *RHCE*01* or *RHCE*ce*
*RHCE*02* or *RHCE*Ce*
*RHCE*03* or *RHCE*cE*
*RHCE*04* or *RHCE*CE*

RHCE

Phenotype	Allele name *ce=01 *Ce=02 *cE=03 *CE=04	Nucleotide	Exon	Amino Acid	rs number	Allele detail	Reported as: Or Linked to:
RH:4 or c RH:5 or e RH:6 or f (ce)	<i>RHCE*01</i> or <i>RHCE*ce</i> <i>RHCE*c</i> <i>RHCE*e</i>	Reference nucleotides c.307C c.676G	2 5	p.Pro103 p.Ala226	rs676785 rs609320		
	<i>RHCE*01.01</i> <i>RHCE*ce.01</i>	c.48G>C	1	p.Trp16Cys	rs586178	<i>RHCE*ce48C</i>	
partial e partial c	<i>RHCE*01.02.01</i> <i>RHCE*ce.02.01</i>	c.48G>C c.1025C>T	1, 7	p.Trp16Cys p.Thr342Ile	rs586178 rs1053374	<i>RHCE*ce48C</i> , <i>1025T</i>	<i>RHCE*ceTI</i> often linked to <i>RHD*DIVa</i>
	<i>RHCE*01.02.02</i> <i>RHCE*ce.02.02</i>	c.48G>C c.150C>T c.178C>A c.201A>G c.203A>G c.307C>T c.1025C>T	1, 2, 7	p.Trp16Cys silent p.Leu60Ile silent p.Asn68Ser p.Pro103Ser p.Thr342Ile	rs586178 rs200955066 rs181860403 rs1053343 rs1053344 rs676785 rs1053374	<i>RHCE*ce48C</i> , <i>ex2 D, 1025T</i>	<i>RHCE*ceTI</i> (Dex2) reported with <i>RHD*DIVa</i>
partial e	<i>RHCE*01.03</i>	c.1025C>T	7	p.Thr342Ile	rs1053374	<i>RHCE*ce1025T</i>	reported with

Phenotype	Allele name *ce=01 *Ce=02 *cE=03 *CE=04	Nucleotide	Exon	Amino Acid	rs number	Allele detail	Reported as: Or Linked to:
	RHCE*ce.03						DIIIa
RH:10,—20 (V+ ^w VS—) RH:—19 (hrS—) partial e partial c	RHCE*01.04.01 RHCE*ce.04.01	c.48G>C c.712A>G c.733C>G c.787A>G c.800T>A c.916A>G	1, 5, 6	p.Trp16Cys p.Met238Val p.Leu245Val p.Arg263Gly p.Met267Lys p.Ile306Val	rs586178 rs144163296 rs1053361 rs1132763 rs1132764 rs1132765	RHCE*ce48C , 712G, 733G, 787G, 800A, 916G	RHCE*ceAR often linked to RHD*DAR
partial e	RHCE*01.04.02 RHCE*ce.04.02	c.48G>C c.697C>G c.712A>G c.733C>G c.787A>G c.800T>A c.916A>G	1, 5, 6	p.Trp16Cys p.Gln233Glu p.Met238Val p.Leu245Val p.Arg263Gly p.Met267Lys p.Ile306Val	rs586178 rs142246017 rs144163296 rs1053361 rs1132763 rs1132764 rs1132765	RHCE*ce48C , 697G, 712G, 733G, 787G, 800A, 916G	RHCE*ceAR+ 697G
	RHCE*01.04.03 RHCE*ce.04.03	c.48G>C c.455C>A c.712A>G c.733C>G c.787A>G c.800T>A c.916A>G	1, 3, 5, 6	p.Trp16Cys p.Thr152Asn p.Met238Val p.Leu245Val p.Arg263Gly p.Met267Lys p.Ile306Val	rs586178 rs35109888 rs144163296 rs1053361 rs1132763 rs1132764 rs1132765	RHCE*ce48C 455A, 712G, 733G, 787G, 800A, 916G	RHCE*ceAR+ 455A
RH:—19 (hrS—) partial e partial c	RHCE*01.05.01 RHCE*ce.05.01	c.48G>C c.712A>G c.787A>G c.800T>A	1, 5	p.Trp16Cys p.Met238Val p.Arg263Gly p.Met267Lys	rs586178 rs144163296 rs1132763 rs1132764	RHCE*ce48C , 712G, 787G, 800A	RHCE*ceEK often linked to RHD*DAR
RH:—59 (CEAG—) RH:—31 (hrB—) partial e	RHCE*01.06.01 RHCE*ce.06.01	c.254C>G	2	p.Ala85Gly	rs57992529	RHCE*ce254G	RHCE*ceAG
	RHCE*01.06.02 RHCE*ce.06.02	c.254C>G c.733C>G	2, 5	p.Ala85Gly p.Leu245Val	rs57992529 rs1053361	RHCE*ce254G , 733G	RHDE*ceAG.02
	RHCE*01.06.03 RHCE*ce.06.03	c.254C>G c.733C>G c.941T>C	2, 5, 7	p.Ala85Gly p.Leu245Val p.Val314Ala	rs57992529 rs1053361 rs79321360	RHCE*ce254G , 733G, 941C	RHCE*ceAG.03
	RHCE*01.06.04 RHCE*ce.06.04	c.254C>G c.697C>G	2, 5	p.Ala85Gly p.Gln233Glu	rs57992529 rs142246017	RHCE*ce254G , 697G	RHCE*ceAG.04
RH:2	RHCE*01.06.05	c.254C>G	2	p.Ala85Gly	rs57992529	RHCE*ce 254G ,	RHCE*ceAG.05

Phenotype	Allele name *ce=01 *Ce=02 *cE=03 *CE=04	Nucleotide	Exon	Amino Acid	rs number	Allele detail	Reported as: Or Linked to:
(robust reactivity) partial C+ e+	RHCE*ce.06.05	c.307C>T		p.Pro103Ser	rs676785	307T	reported with RHD psuedogene
RH: -19 (hrS-) RH: -31 (hrB-) RH: -61 (CEVF-) partial e partial c	RHCE*01.07.01 RHCE*ce.07.01	c.48G>C c.667G>T	1,5	p.Trp16Cys p.Val223Phe	rs586178 rs147357308	RHCE*ce48C, 667T	RHCE*ceMO often linked to RHD*DAU0
RH: -19 (hrS-) RH: -31 (hrB-) RH: -61 (CEVF-) partial e partial c	RHCE*01.07.02 RHCE*ce.07.02	c.667G>T	5	p.Val223Phe	rs147357308	RHCE*ce667T	RHCE*ceMO.0 2 also often with RHD*DAU0
RH: -19 (hrS-) RH: 49 (STEM+) e+/-	RHCE*01.08 RHCE*ce.08	c.48G>C c.712A>G c.818C>T c.1132C>G	1, 5, 6, 8	p.Trp16Cys p.Met238Val p.Ala273Val p.Leu378Val	rs586178 rs144163296 rs147094099 rs138917454	RHCE*ce48C,7 12G, 818T, 1132G	RHCE*ceBI often linked to RHD*DOL
RH: -19 (hrS-) Rh: 49+ ^w (STEM+ ^w) e+/-	RHCE*01.09 RHCE*ce.09	c.48G>C c.712A>G c.818C>T	1, 5, 6	p.Trp16Cys p.Met238Val p.Ala273Val	rs586178 rs144163296 rs147094099	RHCE*ce48C, 712G, 818T	RHCE*ceSM
e+ ^w weak reactivity with some anti-D monoclonal	RHCE*01.10.01 RHCE*ce.10.01	c.48G>C c.365C>T	1, 3	p.Trp16Cys p.Ser122Leu	rs586178 rs201407774	RHCE*ce48C, 365T	RHCE*ceSL some alleles have a silent 105C>T change
e+ ^w	RHCE*01.10.02 RHCE*ce.10.02	c.365C>T	3	p.Ser122Leu	rs201407774	RHCE*ce365T	RHCE*ceSL.02
e+ ^w	RHCE*01.11 RHCE*ce.11	c.461G>C	3	p.Arg154Thr	rs747471048	RHCE*ce461C	RHCE*ceRT
e+ ^w	RHCE*01.12 RHCE*ce.12	c.48G>C c.538G>C	1, 4	p.Trp16Cys p.Gly180Arg	rs586178 no rs found	RHCE*ce48C, 538C	RHCE*ceRA
e+ ^w ,	RHCE*01.13	c.685_687del elAGA	5	p.Arg229del		RHCE*ce(685_6 87del)	RHCE*ceBP

Phenotype	Allele name *ce=01 *Ce=02 *cE=03 *CE=04	Nucleotide	Exon	Amino Acid	rs number	Allele detail	Reported as: Or Linked to:
RH:58 (CELO+ ^w)	RHCE*ce.13						
e+ ^w , c+ ^w RH:36 (Be(a+))	RHCE*01.14 RHCE*ce.14	c.662C>G	5	p.Pro221Arg	rs141398055	<i>RHCE*ce662G</i>	RHCE*ceBE
c+ ^w , e+ ^w RH:55 (LOCR+) RH:-26	RHCE*01.15 RHCE*ce.15	c.286G>A	2	p.Gly96Ser	rs144348222	<i>RHCE*ce286A</i>	RHCE*ceLOC R
e+	RHCE*01.16 RHCE*ce.16	c.48G>C c.1170C>T c.1193T>A	1, 9	p.Trp16Cys silent p.Val398Glu	rs586178 rs630931 rs630612	<i>RHCE*ce48C- D(9)-ce</i>	Reported with RHD pseudogene
partial e partial c RH:10,20 (V+VS+) RH:31 weak to neg (hrB+ ^w /-)	RHCE*01.20.01 RHCE*ce.20.01 RHCE*ceVS.01	c.733C>G	5	p.Leu245Val	rs1053361	<i>RHCE*ce733G</i>	Often with conventional <i>RHD</i>
partial e partial c RH:10,20 (V+VS+) RH:-31 (hrB-)	RHCE*01.20.02 RHCE*ce.20.02 RHCE*ceVS.02	c.48G>C c.733C>G	1, 5	p.Trp16Cys p.Leu245Val	rs586178 rs1053361	<i>RHCE*ce48C, 733G</i>	Often with <i>RHD*DIIIa</i> or to <i>weak partial D 4.0</i>
partial e partial c RH:-10,20 (V-VS+) RH:-31 (hrB-)	RHCE*01.20.03 RHCE*ce.20.03 RHCE*ceVS.03	c.48G>C c.733C>G c.1006G>T	1, 5, 7	p.Trp16Cys p.Leu245Val p.Gly336Cys	rs586178 rs1053361 rs116261244	<i>RHCE*ce48C, 733G, 1006T</i>	RHCE*ceS Often with <i>RHD*DIIIa</i> or to hybrid <i>RHDIII-CE-D</i> as part of r'S type 1 or <i>RHD-CE-D</i> as part of type 2 haplotype
partial e RH:10,20 (V+VS+) Probable RH:-31 (hrB-)	RHCE*01.20.04 RHCE*ce.20.04 RHCE*ceVS.04	c.48G>C c.733C>G c.1025C>T	1, 5, 7	p.Trp16Cys p.Leu245Val p.Thr342Ile	rs586178 rs1053361 rs1053374	<i>RHCE*ce48C, 733G, 1025T</i>	ceTI type 2
partial e RH:-10,20 (V-VS+)	RHCE*01.20.05 RHCE*ce.20.05 RHCE*ceVS.05	c.733C>G c.1006G>T	5, 7	p.Leu245Val p.Gly336Cys	rs1053361 rs116261244	<i>RHCE*ce733G, 1006T</i>	

Phenotype	Allele name *ce=01 *Ce=02 *cE=03 *CE=04	Nucleotide	Exon	Amino Acid	rs number	Allele detail	Reported as: Or Linked to:
RH:-31							
partial c partial e RH:43 (Crawford+) RH:20 (VS+) RH:-19,-31 RH:-58 (CELO-) moderate to strongly reactive with some monoclonal anti-D	RHCE*01.20.06 RHCE*ce.20.06 RHCE*ceVS.06	c.48G>C c.697C>G c.733C>G	1, 5	p.Trp16Cys p.Gln233Glu p.Leu245Val	rs586178 rs142246017 rs1053361	RHCE*ce48C, 697G, 733G	RHCE*ceCF
partial e partial c RH:48,(JAL +) RH:-57 (CEST-) RH:20(V/V S+ ^w) RH:19(hrS+ w/-) RH:31(hrB+ w/-)	RHCE*01.20.07 RHCE*ce.20.07 RHCE*ceVS.07	c.340C>T c.733C>G	3, 5	p.Arg114Trp p.Leu245Val	rs148487630 rs1053361	RHCE*ce340T, 733G	RHCE*ceJAL
e+ ^w RH:10,20 (V+VS+) Probable RH:-31 (hrB-)	RHCE*01.20.08 RHCE*ce.20.08 RHCE*ceVS.08	c.48G>C c.733C>G c.748G>A	1, 5	p.Trp16Cys p.Leu245Val p.Val250Met	rs586178 rs1053361 no rs found	RHCE*ce48C, 733G, 748A	
e+ ^w RH:-10,20 (V-VS+) RH:31 (hrB+ ^w)	RHCE*01.20.09 RHCE*ce.20.09 RHCE*ceVS.09	c.48G>C c.733C>G c.941T>C	1, 5, 7	p.Trp16Cys p.Leu245Val p.Val314Ala	rs586178 rs1053361 rs79321360	RHCE*ce48C, 733G, 941C	
probable partial e and partial c	RHCE*01.20.10 RHCE*ce.20.10 RHCE*ceVS.10	c.48G>C c.712A>G c.733C>G	1, 5	p.Trp16Cys p.Met238Val p.Leu245Val	rs586178 rs144163296 rs1053361	RHCE*ce48C, 712G, 733G	
e+ ^w RH:48 (JAL+)	RHCE*01.21.01 RHCE*ce.21.01	c.341G>A	3	p.Arg114Gln	no rs found	RHCE*ce341A	

Phenotype	Allele name *ce=01 *Ce=02 *cE=03 *CE=04	Nucleotide	Exon	Amino Acid	rs number	Allele detail	Reported as: Or Linked to:
e+ ^w RH:48 (JAL+)	RHCE*01.21.02 RHCE*ce.21.02	c.48G>C c.187G>C c.341G>A	1, 2, 3	p.Trp16Cys p.Gly63Arg p.Arg114Gln	rs586178 no rs found no rs found	<i>RHCE*ce48C</i> , <i>187C</i> , <i>341A</i> ,	
e+ ^w strongly D+ with some monoclonal anti-D RH:33(DHA R+) RH:50 (FPPT+)	RHCE*01.22 RHCE*ce.22	c.667G>T c.697C>G c.712A>G c.733C>G c.744T>C c.787A>G c.800T>A	5	p.Val223Phe p.Gln233Glu p.Mer238Val p.Leu245Val silent p.Arg263Gly p.Met267Lys	rs147357308 rs142246017 rs144163296 rs1053361 rs149352457 rs1132763 rs1132764	<i>RHCE*ce-D(5)- ce</i>	DHAR RHCE*ceHAR
e+ ^w	RHCE*01.23 RHCE*ce.23	c.649T>C	5	p.Trp217Arg	no rs found	<i>RHCE*ce649C</i>	
e+ ^w	RHCE*01.24 RHCE*ce.24	c.512G>A	4	p.His171Arg	rs781037009	<i>RHCE*ce512A</i>	
e+ ^w	RHCE*01.25 RHCE*ce.25	c.730G>A	5	p.Ala244Thr	no rs found	<i>RHCE*ce730A</i>	
e+ ^w	RHCE*01.26 RHCE*ce.26	c.872C>T	6	p.Pro291Leu	rs374399829	<i>RHCE*ce872T</i>	
e+ ^w	RHCE*01.27 RHCE*ce.27	c.1154G>C	9	p.Gly385Ala	no rs found	<i>RHCE*ce1154C</i>	
c+ ^w	RHCE*01.28 RHCE*ce.28	c.1254A>C	10	p.Ter418Tyr	no rs found	<i>RHCE*ce1254C</i>	
c+e-	RHCE*01.29 RHCE*ce.29	<i>RHD</i> exons 4-9	4-9			<i>RHCE*ce-D(4- 9)-ce</i>	RHCE*ceBOL Haplotype (Dc- Bol)
e+ ^w	RHCE*01.30 RHCE*ce30	c.526G>A	4	p.Ala176Thr	rs753965768	<i>RHCE*ce526A</i>	
	RHCE*01.31 RHCE*ce31	c.695T>C	5	p.Ile232Thr	no rs found	<i>RHCE*ce695C</i>	
	RHCE*01.32 RHCE*ce32	c.827C>A	6	p.Ala276Gln	no rs found	<i>RHCE*ce827A</i>	
partial e e+ ^{w/-} RH:-31 (hrB-)	RHCE*01.33 RHCE*ce33	c.506T>C	4	p.Leu169Pro	no rs found	<i>RHCE*ce506C</i>	
partial c+e-	RHCE*01.34 RHCE*ce34	<i>RHD</i> exons 4-7	4-7			<i>RHCE*ce-D(4- 7)-ce</i>	Haplotype Dc- made antibody to high

Phenotype	Allele name *ce=01 *Ce=02 *cE=03 *CE=04	Nucleotide	Exon	Amino Acid	rs number	Allele detail	Reported as: Or Linked to:
c+ e+	RHCE*01.35 RHCE*ce35	c.202A>G	2	p.Asn68Asp	rs772058645	<i>RHCE*ce202G</i>	
c-	RHCE*01.36 RHCE*ce36	c.307C>T	2	p.PRo103Ser	rs676785	<i>RHCE*ce307T</i>	
c+ e+	RHCE*01.37 RHCE*ce37	c.697C>G c.712A>G c.733C>G c.744T>C	5	p.Gln233Glu p.Met238Val p.Leu245Val p.Ser248Ser	rs142246017 rs144163296 rs1053361 rs149352457	<i>RHCE*ce697G</i> , <i>712G</i> , <i>733G</i> , <i>744C</i>	Reported as weakly reactive with anti-D in absence of <i>RHD</i>
Nulls							
c-e-	RHCE*01N.01 RHCE*ceN.01	c.80_84delT CTTC	1	p.Tyr29Phefs *5	no rs found	<i>RHCE*ce(del80_84)</i>	
c-e-	RHCE*01N.02 RHCE*ceN.02	c.963delG	7	p.Iso322Phefs *37	no rs found	<i>RHCE*ce963delG</i>	
c-e-	RHCE*01N.03 RHCE*ceN.03	c.634+1G>T	Intron 4	Splice site	no rs found	<i>RHCE*ce634+1g>t</i>	
c-e-	RHCE*01N.04 RHCE*ceN.04	c.676delG	5	p.Ala226Leu fs*2	rs609320	<i>RHCE*ce676delG</i>	
c-e-	RHCE*01N.05 RHCE*ceN.05	c.335+3A>T	Intron 2	Splice site	no rs found	<i>RHCE*ce335+3A>T</i>	
Ce RH:2 or C RH:5 or e RH:7 or rh_i(Ce)	RHCE*02 or RHCE*Ce RHCE*C RHCE*e	Reference nucleotides c.48G>C c.150C>T c.178C>A c.201A>G c.203A>G c.307C>T c.676G	1, 2, 5	p.Trp16Cys silent p.Leu60Ile silent p.Asn68Ser p.Pro103Ser p.Ala226			
C+ ^{w/-} e+ ^w RH:48 (JAL+)	RHCE*02.01 RHCE*Ce.01	c.340C>T	3	p.Arg114Trp	rs148487630	<i>RHCE*Ce340T</i>	RHCE*CeMA RHCE*CeJAL
C+e+	RHCE*02.02 RHCE*Ce.02	c.667G>T c.697C>G c.712A>G	5	p.Val223Phe p.Gln233Glu p.Met238Val	rs147357308 rs142246017 rs144163296	<i>RHCE*Ce667T</i> , <i>697G</i> , <i>712G</i>	RHCE*CeFV
C+ ^w e+ ^w RH:53 (JAHK+) rG	RHCE*02.03 RHCE*Ce.03	c.365C>T	3	p.Ser122Leu	rs201407774	<i>RHCE*Ce365T</i>	RHCE*CeJAHK

Phenotype	Allele name *ce=01 *Ce=02 *cE=03 *CE=04	Nucleotide	Exon	Amino Acid	rs number	Allele detail	Reported as: Or Linked to:
partial C+	RHCE*02.04 RHCE*Ce.04	c.667G>T c.697C>G c.712A>G c.733C>G c.744T>C c.787A>G c.800T>A	5	p.Val223Phe p.Gln233Glu p.Mer238Val p.Leu245Val silent p.Arg263Gly p.Met267Lys	rs147357308 rs142246017 rs144163296 rs1053361 rs149352457 rs1132763 rs1132764	RHCE*CE-D(5)- CE	RHCE*CeVA
RH:60 (PARG+)	RHCE*02.05 RHCE*Ce.05	c.501G>A	4	p.Met167Ile	no rs found	RHCE*Ce501A	RHCE*CePAR G
partial C+ RH:8 (C ^w +) RH:-51 (MAR-)	RHCE*02.08.01 RHCE*Ce.08.01	c.122A>G	1	p.Gln41Arg	rs138268848	RHCE*Ce122G	RHCE*CeCW
RH:8 (Cw+) RH:-56 (CENR-)	RHCE*02.08.02 RHCE*Ce.08.02	c.122A>G & RHD exon 6-10	1 6-10	p.Gln41Arg	rs138268848	RHCE* Ce-D(6- 10)	RHCE*CeNR
partial C+ RH:9 (C ^x +) RH:-51 (MAR-)	RHCE*02.09 RHCE*Ce.09	c.106G>A	1	p.Ala36Thr	rs145034271	RHCE*Ce106A	RHCE*CeCX
C+ ^{w/-} partial e+ ^w RH:32 (RN) RH:54 (DAK+) RH:-46 (Sec-)	RHCE*02.10.01 RHCE*Ce.10.01	c.505C>A c.509G>T c.514T>A c.544A>T c.577A>G c.594T>A c.602G>C	4	p.Leu169Met p.Arg170Met p.Phe172Ile p.Thr182Ser p.Lys193Glu p.Asn198Lys p.Arg201Thr	rs1132761 rs1132762 rs1053349 rs1053350 no rs found rs1053354 rs141398055	RHCE*Ce-D(4)- ce	RHCE*CeRN
C+ ^{w/-} partial e+ ^w RH:32 (RN) RH:54 (DAK+) RH:-46 (Sec-)	RHCE*02.10.02 RHCE*Ce.10.02	c.455C>A c.505C>A c.509G>T c.514T>A c.544A>T c.577A>G c.594T>A c.602G>C	3, 4	p.Thr152Asn p.Leu169Met p.Arg170Met p.Phe172Ile p.Thr182Ser p.Lys193Glu p.Asn198Lys p.Arg201Thr	rs35109888 rs1132761 rs1132762 rs1053349 rs1053350 no rs found rs1053354 rs141398055	RHCE*Ce-D(4)- ce + 455A	RHCE*CeRN.0 2 exists?
C+ ^w	RHCE*02.11 RHCE*Ce.11	c.286G>A	2	p.Gly96Ser	rs144348222	RHCE*Ce286A	
C+ ^w	RHCE*02.12 RHCE*Ce.12	c.344T>G	3	p.Leu115Arg	no rs found	RHCE*Ce344G	
e+ ^w	RHCE*02.13 RHCE*Ce.13	c.364T>C	3	p.Ser122Pro	no rs found	RHCE*Ce364C	
C+ ^w	RHCE*02.14	c.497A>T	4	p.His166Leu	no rs found	RHCE*Ce497T	

Phenotype	Allele name *ce=01 *Ce=02 *cE=03 *CE=04	Nucleotide	Exon	Amino Acid	rs number	Allele detail	Reported as: Or Linked to:
	RHCE*Ce.14						
e+ ^w	RHCE*02.15 RHCE*Ce.15	c.689G>C	5	p.Ser230Thr	no rs found	<i>RHCE*Ce689C</i>	
C+ ^w e+ ^w	RHCE*02.16 RHCE*Ce.16	c.728A>G	5	p.Tyr243Cys	rs555090649	<i>RHCE*Ce728G</i>	
e+ ^w	RHCE*02.17 RHCE*Ce.17	c.800T>A	5	p.Met267Lys	rs1132764	<i>RHCE*Ce800A</i>	
C+ ^w e+ ^w	RHCE*02.18 RHCE*Ce.18	c.890T>C	6	p.Leu297Pro	rs763017817	<i>RHCE*Ce890C</i>	
e+ ^w	RHCE*02.19 RHCE*Ce.19	c.464T>G c.1118C>T	3 8	p.Met155Arg p.Ala373Val	no rs found	<i>RHCE*Ce464G,</i> <i>1118T</i>	
C+ ^w e+ ^w	RHCE*02.20 RHCE*Ce.20	c.79_81delC TC	1	p.Leu27del	no rs found	<i>RHCE*Ce(79_8</i> <i>1del)</i>	
C+ ^w	RHCE*02.21 RHCE*Ce.21	c.527C>T	4	p.Ala176Val	no rs found	<i>RHCE*Ce527T</i>	
Partial e+ ^w C+ ^w	RHCE*02.22 RHCE*Ce.22	c.667G>T	5	p.Val223Phe	rs147357308	<i>RHCE*Ce667T</i>	
C+ ^w	RHCE*02.23 RHCE*Ce.23	c.941T>C	7	p.Val314Ala	rs79321360	<i>RHCE*Ce941C</i>	
C+ ^w e+ ^w	RHCE*02.24 RHCE*Ce.24	c.1007G>A	7	p.Gly336Asp	rs760319839	<i>RHCE*Ce1007A</i>	
C+ ^w	RHCE*02.25 RHCE*Ce.25	c.1007G>T	7	p.Gly336Val	rs760319839	<i>RHCE*Ce1007T</i>	
C+ ^w e+ ^w	RHCE*02.26 RHCE*Ce.26	c.460A>G	3	p.Arg154Gly	rs755299894	<i>RHCE*Ce460G</i>	
C+ ^w e+ ^w	RHCE*02.27 RHCE*Ce.27	c.375C>G	3	p.Ile125Met	rs143715642	<i>RHCE*Ce375G</i>	
C+ e+	RHCE*02.28 RHCE*Ce.28	c.919G>A	6	p.Gly307Arg	rs200950594	<i>RHCE*Ce919A</i>	Made antibody to high in Rh
C+ e+ E+/-	RHCE*02.29 RHCE*Ce.29	c.674C>G	5	p.Ser225Cys	rs200087488	<i>RHCE*Ce674G</i>	E: 0-4+ depending on reagent in absence of c.676C
C+ e+ V+VS+	RHCE*02.30 RHCE*Ce.30	c.733C>G	5	p.Leu245Val	rs1053361	<i>RHCE*Ce733G</i>	
Nulls							
C-e-	RHCE*02N.01 RHCE*CeN.01	c.966_969d elTCAC	7	p.His323Thr fs*75	no rs found	<i>RHCE*Ce(966_</i> <i>969del)</i>	
C-e-	RHCE*02N.02 RHCE*CeN.02	c.659G>A	5	p.Trp220Ter	no rs found	<i>RHCE*Ce659G</i>	

Phenotype	Allele name *ce=01 *Ce=02 *cE=03 *CE=04	Nucleotide	Exon	Amino Acid	rs number	Allele detail	Reported as: Or Linked to:
C-e-	RHCE*02N.03 RHCE*CeN.03	c.486+1G>A	Intron 3	Splice site	rs199725473	RHCE*Ce486+1 a	
C-e-	RHCE*02N.04 RHCE*CeN.04	c.93_94insT	1	p.Thr32Tyrfs*	no rs found	RHCE*Ce(93_9 4insT)	
C-e-	RHCE*02N.05 RHCE*CeN.05	c.377C>G	3	p.Ser126Ter	no rs found	RHCE*Ce377G	
cE RH:4 or c RH:3 or E RH:27 (cE)	RHCE*03 or RHCE*cE RHCE*c RHCE*E	Reference nucleotides c.307C c.676G>C	2, 5	p.Pro103 p.Ala226Pro		RHCE*cE	
partial E RH:11 (E ^{w+}) E type I	RHCE*03.01 RHCE*cE.01	c.500T>A	4	p.Met167Lys	rs140421430	RHCE*cE500A	RHCE*cEEW
partial E c ^{w/-} E ^{w/-} E type II	RHCE*03.02 RHCE*cE.02	D(1-3)-cE	1-3			RHCE*D(1-3)- cE	RHCE*cEKK
partial E E ^{w+} or E ^{+/-} E type III	RHCE*03.03 RHCE*cE.03	c.697C>G c.712A>G	5	p.Gln233Glu p.Met238Val	rs142246017 rs144163296	RHCE*cE697G, 712G	RHCE*cEFM
partial E E ^{+/-}	RHCE*03.03.02 RHCE*cE.03.02	c.697C>G c.712A>G c.733C>G c.744T>C	5	p.Gln233Glu p.Met238Val p.Leu245Val silent	rs142246017 rs144163296 rs1053361 rs149352457	RHCE*cE697G, 712G, 733G, 744C	
partial E E ^{w+} or E ^{+/-} c ^w E type IV	RHCE*03.04 RHCE*cE.04	c.602G>C	4	p.Arg201Thr	rs141398055	RHCE*cE602C	RHCE*cEIV
partial E E ^{w+} or E ^{+/-} c ^w E type V	RHCE*03.05 RHCE*cE.05	c.461G>C	3	p.Arg154Thr	rs747471048	RHCE*cE461C	RHCE*cEKH
E ^{w+} c ^w	RHCE*03.06 RHCE*cE.06	c.28C>T	1	p.Arg10Trp	rs749601047	RHCE*cE28T	
E ^{w+}	RHCE*03.07 RHCE*cE.07	c.344T>C	3	p.Leu115Pro	no rs found	RHCE*cE344C	
E ^{w+}	RHCE*03.08 RHCE*cE.08	c.356G>A	3	p.Ser119Asn	rs777819701	RHCE*cE356A	
E ^{w+} c ^w	RHCE*03.09 RHCE*cE.09	c.374T>A	3	p.Ile125Asn	no rs found	RHCE*cE374A	
E ^{w+}	RHCE*03.10 RHCE*cE.10	c.506T>A	4	p.Leu169Gln	no rs found	RHCE*cE506A	
E ^{w+} c ^w	RHCE*03.11	c.908T>A	6	p.Leu303Gln	no rs found	RHCE*cE908A	

Phenotype	Allele name *ce=01 *Ce=02 *cE=03 *CE=04	Nucleotide	Exon	Amino Acid	rs number	Allele detail	Reported as: Or Linked to:
	RHCE*cE.11						
E+ ^w	RHCE*03.12 RHCE*cE.12	c.464T>G c.477T>G	3	p.Met155Arg p.Asn159Lys	no rs found no rs found	RHCE*cE464G, 477G	
E+ ^w c+ ^w	RHCE*03.13 RHCE*cE.13	c.728A>G	5	p.Tyr243Cys	rs555090649	RHCE*cE728G	
c+ ^w E-/+ ^{vw}	RHCE*03.14 RHCE*cE.14	c.734T>C	5	p.Leu245Pro	no rs found	RHCE*cE734C	
E+ ^w	RHCE*03.15.01 RHCE*cE.15.01	c.380C>T c.383G>A	3	p.Ala127Val p.Gly128Asp	rs1053346 rs1053347	RHCE*cE380T, 383A	RHCE*cE BA
E+ ^w	RHCE*03.15.02 RHCE*cE.15.02	c.361A>T c.380C>T c.383G>A	3	p.Met121Leu p.Ala127Val p.Gly128Asp	rs1053345 rs1053346 rs1053347	RHCE*cE361T, 380T, 383A	RHCE*cE JU
c+ ^w	RHCE*03.16 RHCE*cE.16	c.94A>G	1	p.Thr32Ala	rs760999674	RHCE*cE94G	RHCE*cE TA anti-c clone 951 non- reactive
partial E	RHCE*03.17 RHCE*cE.17	c.520G>A	4	p.Val174Met	rs146306079	RHCE*cE520A	
c+ E+	RHCE*03.18 RHCE*cE.18	c.48G>C	1	p.Trp16Cys	rs586178	RHE*cE48C	
c+ ^{w/-} E+ ^{w/-}	RHCE*03.19 RHCE*cE.19	c.84C>A	1	p.Phe28Leu	no rs found	RHCE*cE84A	c: 0 to 3+, E: 0 to 1+ depending on reagent
Nulls							
c-E-	RHCE*03N.01 RHCE*cEN.01	c.350_358d elCCATGA GTG	3	p.Arg120_ Ser122del	no rs found	RHCE*cE(350_ 358del)	RHCE*cEMI
c-E-	RHCE*03N.02 RHCE*cEN.02	c.907delC	6	p.Leu303Ter	rs747976226	RHCE*cE907del C	
c-E-	RHCE*03N.03 RHCE*cEN.03	c.554G>A	4	p.Trp185Ter	no rs found	RHCE*cE554A	
CE RH:2 or C RH:3 or E RH:22 or CE	RHCE*CE or RHCE*04 RHCE*C RHCE*E	Reference nucleotides c.48G>C c.150C>T c.178C>A c.201A>G c.203A>G c.307C>T c.676G>C	1, 2, 5	p.Trp16Cys silent p.Leu60Ile silent p.Asn68Ser p.Pro103Ser p.Ala226Pro			
C+ ^w E+/-	RHCE*04.01 RHCE*CE.01	c.722C>T	5	p.Thr241Ile	rs751751505	RHCE*CE722T	

