

Names for CTL2 (ISBT 039) Blood Group Alleles

General description: The CTL2 blood group system consists of two high-prevalence antigens, VER and RIF, carried on the Choline like transporter 2 (CTL2) protein, also known as SLC44A2 (solute carrier family 44 member 2). This multi-pass protein consists of 706 amino acids (isoform 1), with predicted 10 transmembrane domains and 5 extracellular loops. The protein is encoded by *SLC44A2*, 42,103 bases, chromosome *19p13.2* (*chr19:10,602,455-10,644,557*) (GRCh38/hg38). The rare VER– null phenotype is associated with hearing impairment in the upper frequency range.

Gene name: *SLC44A2*

Number of exons: 22

Initiation codon: Within exon 1

Stop codon: Within exon 22

Entrez Gene ID: 57153

LRG: not yet assigned

LRG sequence: NC_000019.10 (genomic)

NM_001145056.2 (transcript)

NP_001138528.1 (protein)

Reference allele: *CTL2*01* (shaded)

Reference allele
*CTL2*01* encodes: CTL2.1 (VER), CTL2.2 (RIF)

Antithetical antigens: n/a

Phenotype	Allele name	Nucleotide change	Exon	Predicted amino acid change	(Reference No.) PMID	Accession number	rs number
CTL2:1 or VER+	<i>CTL2*01</i>						
CTL2:-2 or RIF-	<i>CTL2*01.-02</i>	c.1192C>A	14	p.Pro398Thre	WOS:000502826600026		rs1401833882
Null Phenotypes							
CTL2:-1 or VER-	<i>CTL2*01N.01</i>	Deletion of exons 1 to 14 (37 kbp). Break-points with coordinates from chromosome 19:10,598,733-10,636,021			WOS:000502826600026		

VER: name suggested after the name of the city of origin of the null proband, Verona in Italy

VER-: deletion of 37 kbp (exons 1 to 14 along with the 5' UTR region of *SLC44A2*)

RIF: name suggested after the name of the North Mediterranean coast of Morocco from where all the so far reported RIF- people originate from

References

1. WOS: 000502826600026 Vrignaud, C., Mikdar, M., Koehl, B., Nair, T.S., Yang, L., Laiguillon, G., El Kenz, H., Cartron, J.P., Colin, Y., Detante, O., Le Van Kim, C., Carey, T.E., Azouzi, S., Peyrard, T. (2019) Alloantibodies directed to the SLC44A2/CTL2 transporter define two new red cell antigens and a novel human blood group system. *Transfusion*, 59 (Suppl. S3), 18A[abstract].

Track of changes		v1.0 30-OCT-2020	to
	created by	Thierry Peyrard	
	reviewed by	Slim Azouzi	
General	Document created	First version. Spread-sheets "Intro", "Allele Table", "References", and "Versioning" created.	
Intro	Intro added	General description, gene name, number of exons, initiation codon, stop codon, Entrez Gene ID and Reference allele information added.	
Allele Table	Table created	Table columns "Phenotype", "Allele name", "Nucleotide change", "Exon", "Predicted amino acid change", "(Reference No.) PMID/WOS", "Accession number" and "rs-number" created and content to table columns added.	
Allele Table	Alleles added:	<i>CTL2*01</i> , <i>CTL2*01N.01</i> and <i>CTL2*01.-02</i> added	
References	References added:	References (1)	
End of changes		v1.0 30-OCT-2020	