

Appendix A List of Caprine arthritis arthritis-encephalitis virus strains used in the genome analysis

Strain name	Genbank accession no.	Animal host	Year of collection	Country	Reference
1GA	AF322109.1	Goat	2006	Norway	(Gjerset, Storset, and Rimstad 2006)
Clements	NC_001463.1	Goat	1974	USA	(Saltarelli et al. 1990; Narayan et al. 1980)
FESC-752	HM210570.1	Goat	2004	Mexico	(Ramirez et al. 2011)
Fonni	JF502416.1	Sheep	2003	Italy	(Bertolotti et al. 2011)
Gansu	AY900630.1	Goat	2005	China	(Qu et al. 2005)
Ov496	FJ195346.1	Sheep	2004	Spain	(Glaria et al. 2009)
Roccaverano	EU293537.2	Goat	2008	Italy	(Reina et al. 2009)
Seui	GQ381130.1	Goat	2003	Italy	(Reina et al. 2010)
Shanxi	GU120138.1	Goat	2007	China	(Huang et al. 2012; Huang et al. 2011)
SRLV001	MG554402.1	Sheep	2017	Italy	Unpublished
SRLV010	MG554410.1	Goat	2017	Italy	Unpublished
SRLV014	MG554411.1	Goat	2017	Italy	Unpublished
SRLV016	MG554412.1	Goat	2017	Italy	Unpublished
SRLV017	MG554413.1	Goat	2017	Italy	Unpublished
SRLV020	MG554414.1	Goat	2017	Italy	Unpublished
SRLV042	MH374288.1	Sheep	2017	Italy	Unpublished
SRLV_Taccone	MH374289.1	Goat	2018	Italy	Unpublished
SRLV_To1.89	MH374290.1	Goat	1989	Italy	Unpublished
Volterra	JF502417.1	Sheep	2004	Italy	(Bertolotti et al. 2011)
239	KT749878.1	Goat	1994	China	In this study
CGu-3	KT749880.1	Goat	1990	China	In this study
CSI-4	KT214469.1	Goat	1990	China	In this study
gs-35V	KT749881.1	Goat	1989	China	In this study

SH-1	KT749879.1	Goat	1989	China	In this study
------	------------	------	------	-------	---------------

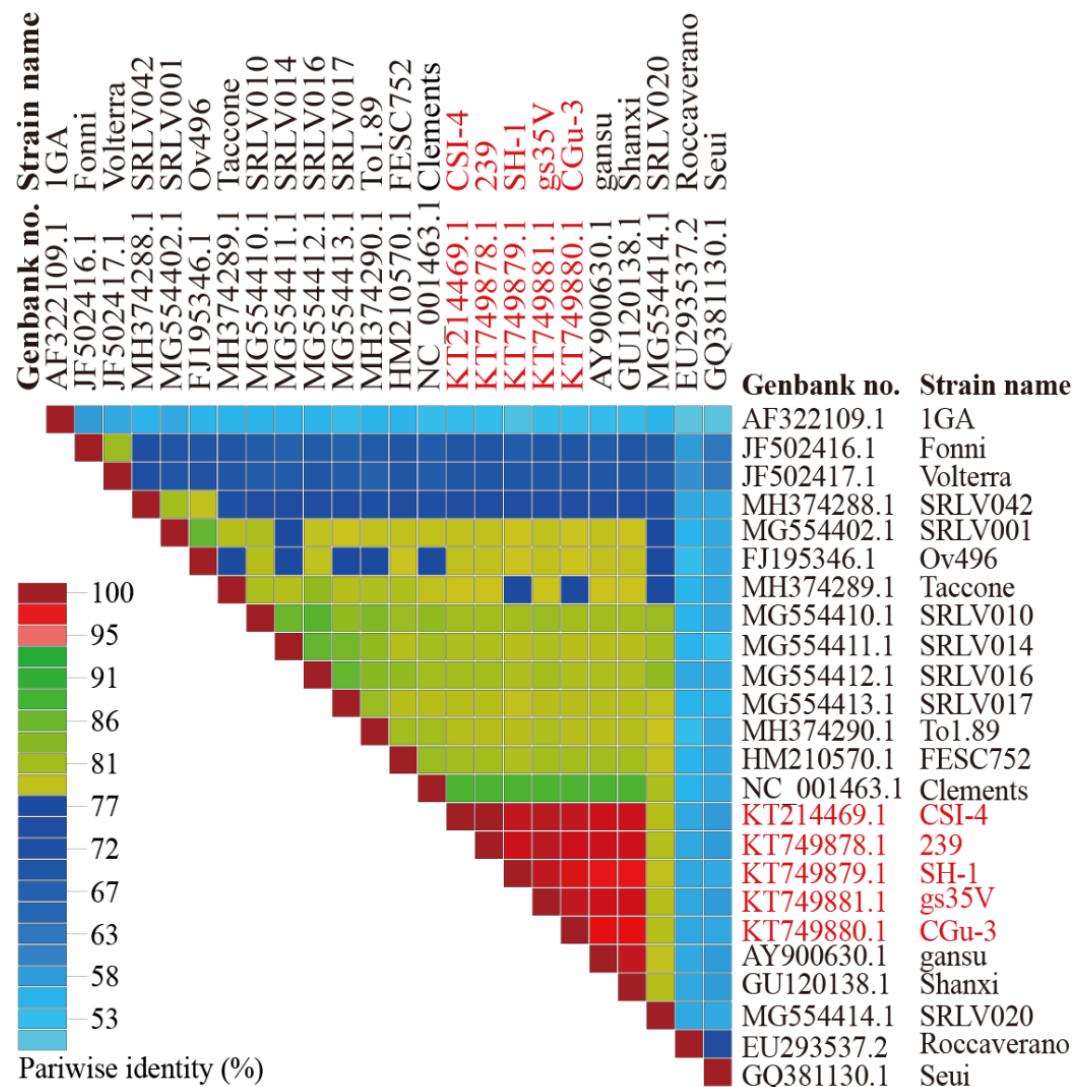
References

- Bertolotti L, Mazzei M, Puggioni G, Carrozza M L, Giudici S D, Muz D, Juganaru M, Patta C, Tolari F, Rosati S. 2011. Characterization of new small ruminant lentivirus subtype B3 suggests animal trade within the Mediterranean Basin. *Journal of General Virology*, **92**, 1923-1229.
- Gjerset B, Storset A K, Rimstad E. 2006. Genetic diversity of small-ruminant lentiviruses: characterization of Norwegian isolates of Caprine arthritis encephalitis virus. *Journal of General Virology*, **87**, 573-580.
- Glaria I, Reina R, Crespo H, de Andrés X, Ramírez H, Biescas E, Pérez M M, Badiola J, Luján L, Amorena B, de Andrés D. 2009. Phylogenetic analysis of SRLV sequences from an arthritic sheep outbreak demonstrates the introduction of CAEV-like viruses among Spanish sheep. *Veterinary Microbiology*, **138**, 156-162.
- Huang J, Sun Y, Liu Y, Xiao H, Zhuang S. 2012. Development of a loop-mediated isothermal amplification method for rapid detection of caprine arthritis-encephalitis virus proviral DNA. *Archives of Virology*, **157**, 1463-1469.
- Huang J, Sun Y, Zhuang S, Xiao H, Zhang L. 2011. Cloning and sequence analysis of the whole genome of caprine arthritis-encephalitis virus Shaanxi strain. *Chinese Veterinary Science*, **41**, 789-93. (In Chinese)
- Narayan O, Clements J E, Strandberg J D, Cork L C, Griffin D E. 1980. Biological Characterization of the Virus Causing Leukoencephalitis and Arthritis in Goats. *Journal of General Virology*, **50**, 69-79.
- Qu J, Guo W, Zhao Li, Shen R, Xiang W. 2005. The Gene Cloning and Sequence Analysis of the Whole Genome of Caprine Arthritis Encephalitis Virus (CAEV) -GANSU Strain. *Chinese Journal of Virology*, **21**, 389-392. (In Chinese)
- Ramirez H, Glaria I, de Andres X, Martinez H A, Hernandez M M, Reina R, Iraizoz E, Crespo H, Berriatua E, Vazquez J, Amorena B, de Andres D. 2011. Recombinant small ruminant lentivirus subtype B1 in goats and sheep of imported breeds in Mexico. *Veterinary Journal*, **190**, 169-172.
- Reina R, Bertolotti L, Giudici S D, Puggioni G, Ponti N, Profiti M, Patta C, Rosati S. 2010. Small ruminant lentivirus genotype E is widespread in Sarda goat. *Veterinary Microbiology*, **144**, 24-31.

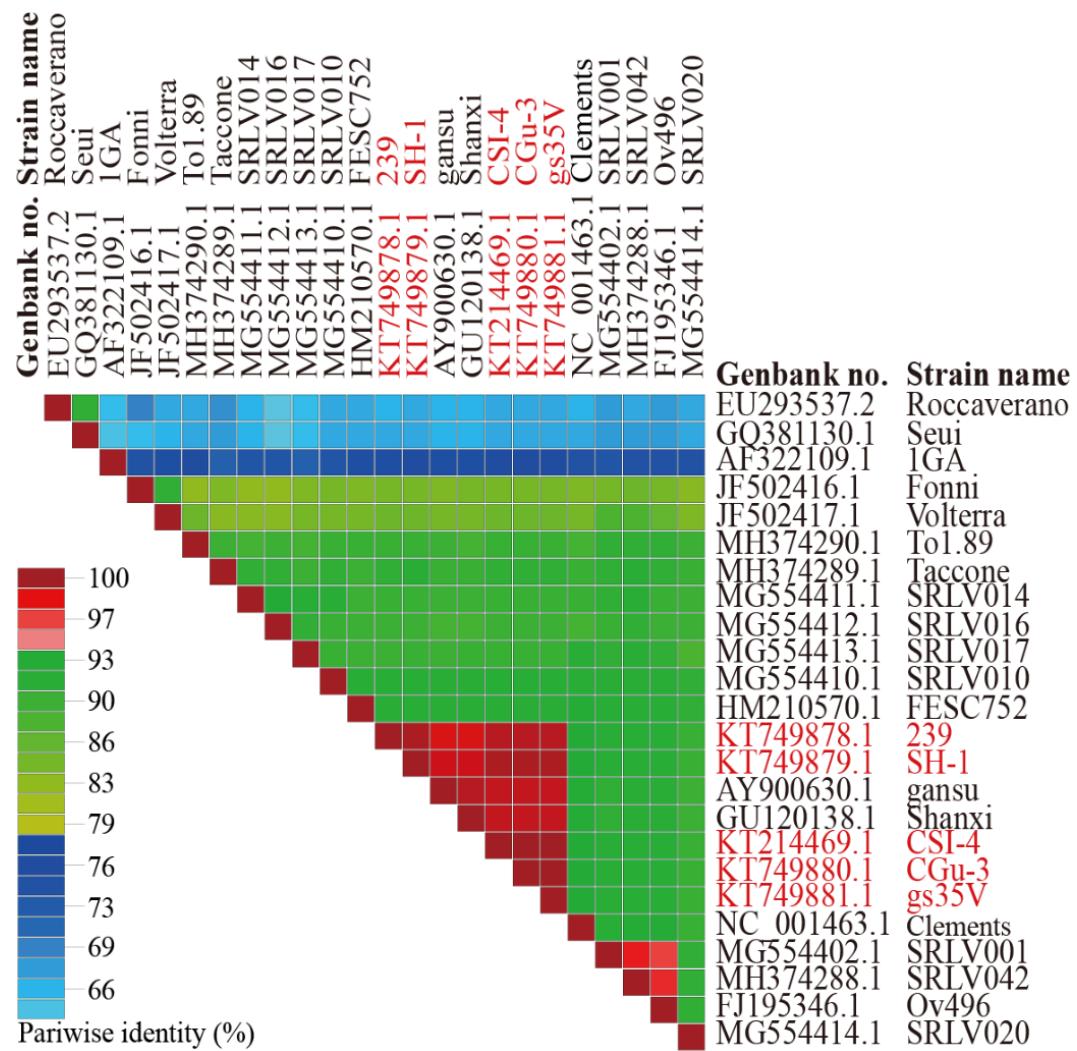
Reina R, Grego E, Bertolotti L, Meneghi D D, Rosati S. 2009. Genome Analysis of Small-Ruminant Lentivirus Genotype E: a Caprine Lentivirus with Natural Deletions of the dUTPase Subunit, vpr-Like Accessory Gene, and 70-Base-Pair Repeat of the U3 Region. *Journal of Virology*, **83**, 1152-55.

Saltarelli M, Querat G, Konings D A, Vigne R, Clements J E. 1990. Nucleotide sequence and transcriptional analysis of molecular clones of CAEV which generate infectious virus. *Virology*, **179**, 347-64.

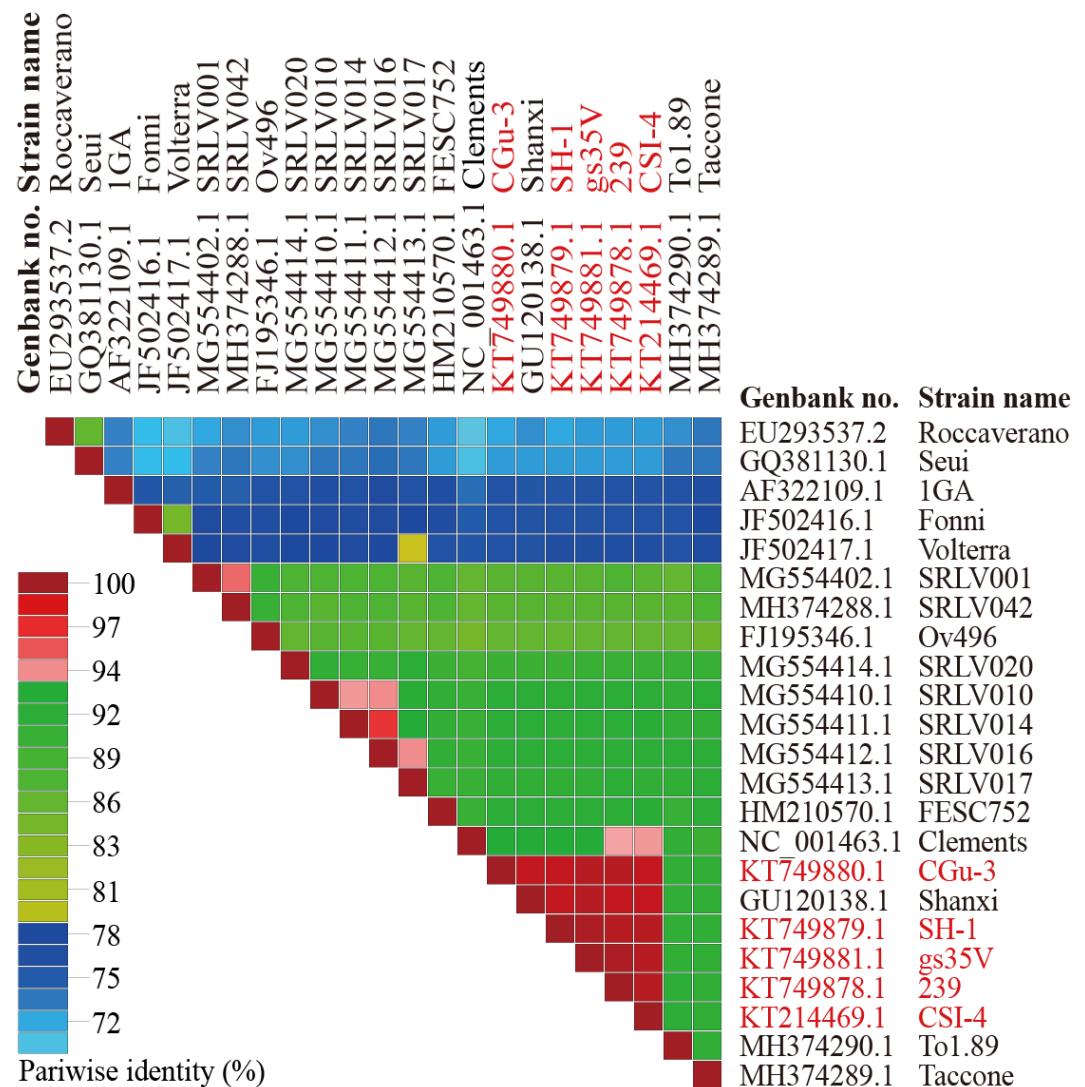
Appendix B Pairwise env protein identity matrix of Caprine arthritis-encephalitis virus strains.



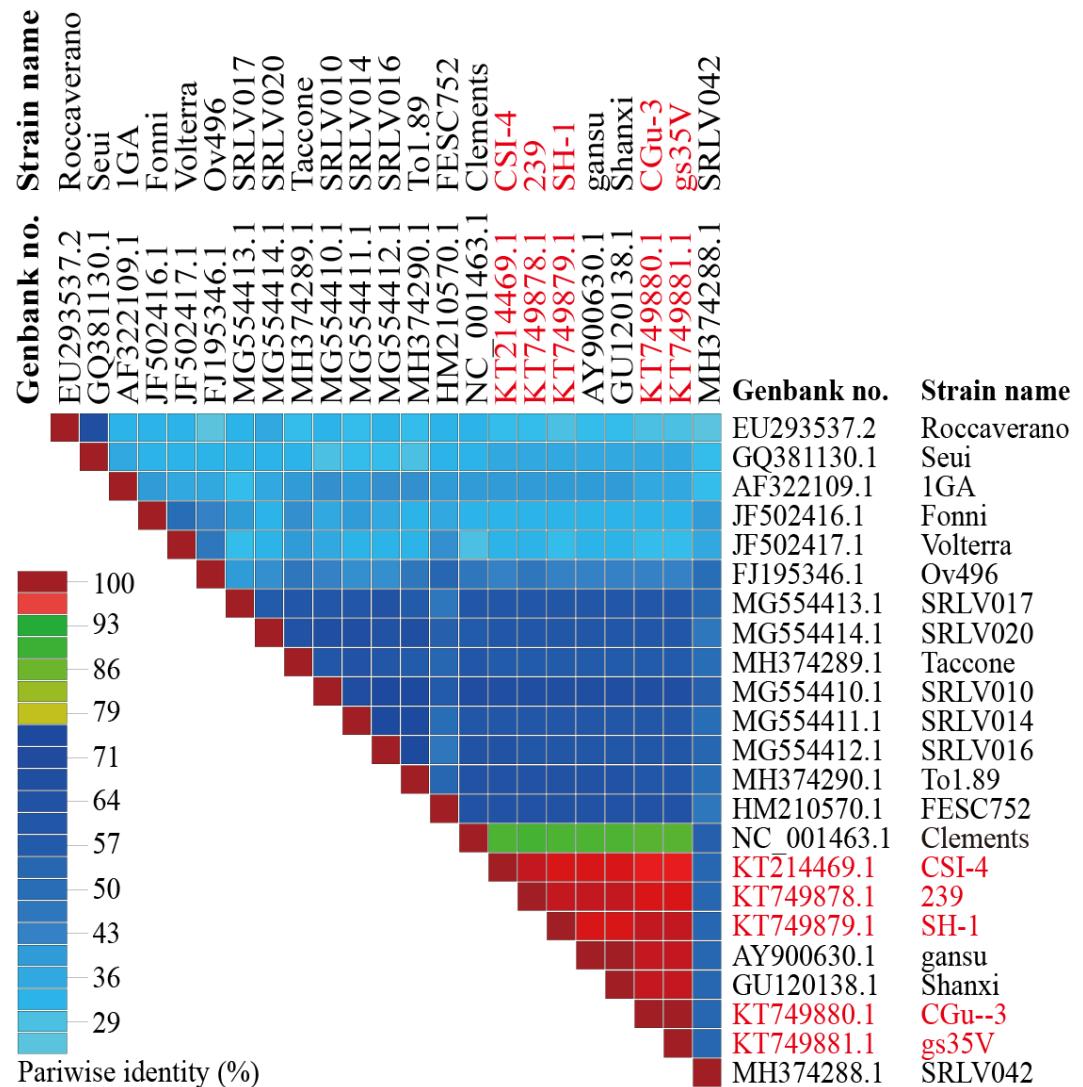
Appendix C Pairwise gag protein identity matrix of Caprine arthritis-encephalitis virus strains.



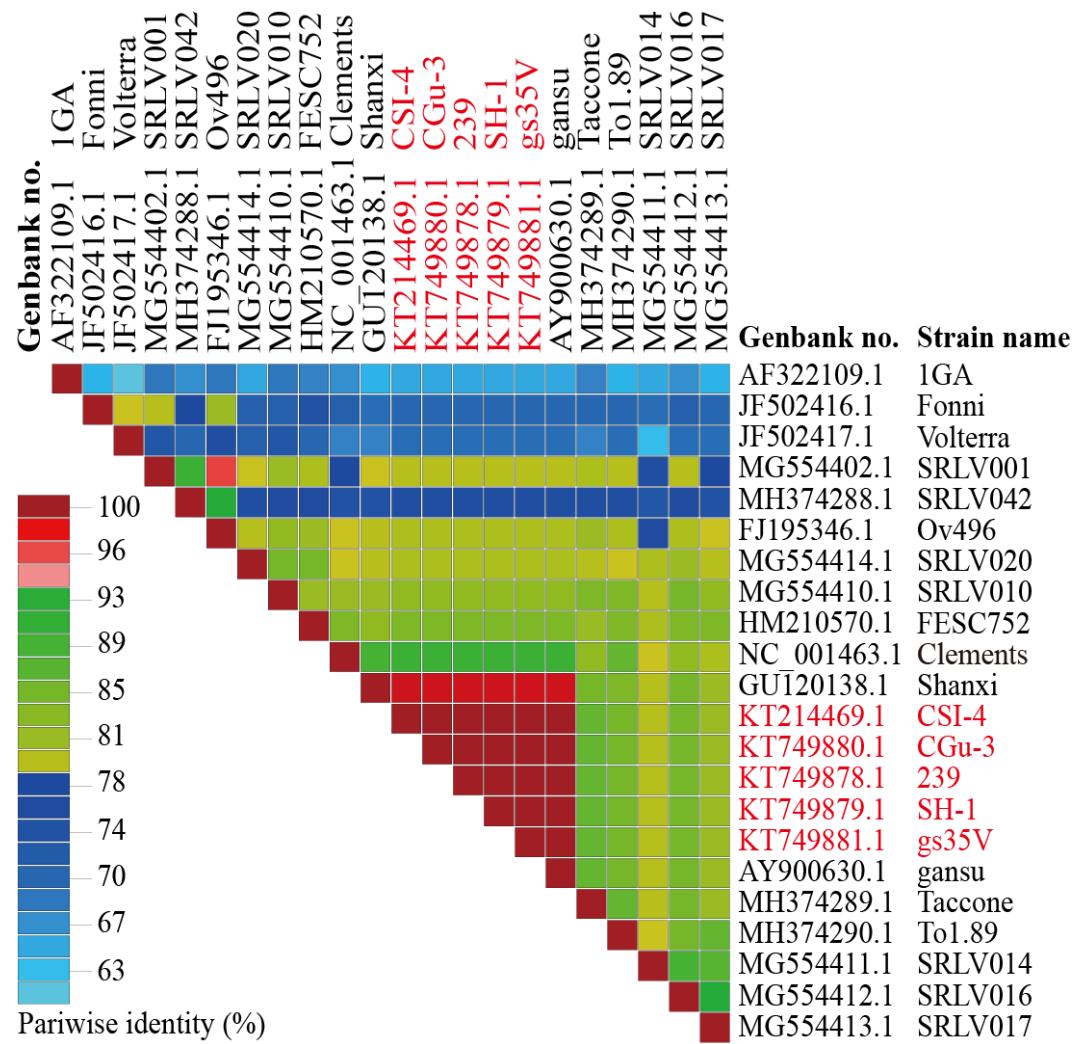
Appendix D Pairwise pol protein identity matrix of Caprine arthritis-encephalitis virus strains.



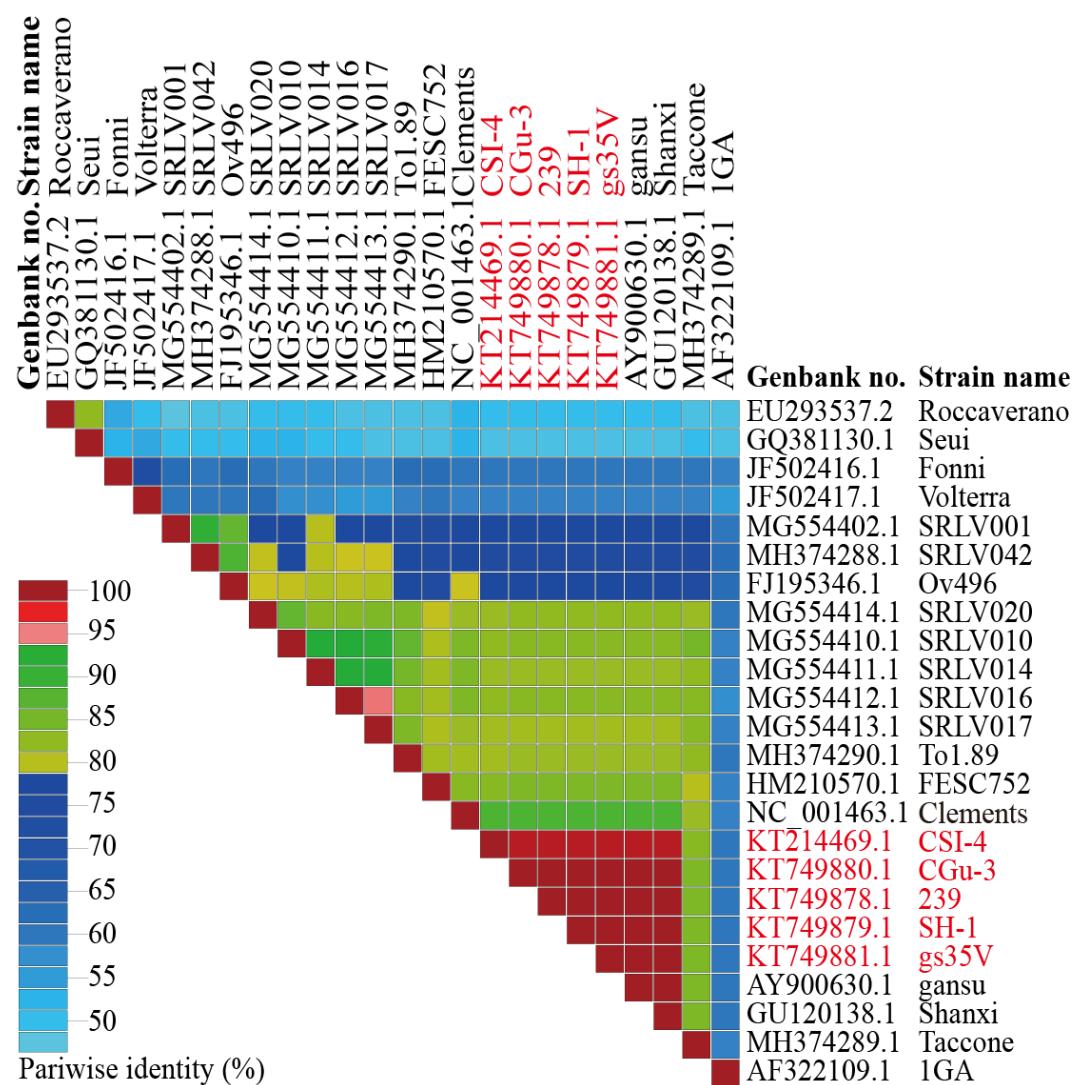
Appendix E Pairwise rev protein identity matrix of Caprine arthritis-encephalitis virus strains



Appendix F Pairwise vpr-like protein identity matrix of Caprine arthritis-encephalitis virus strains.



Appendix G Pairwise vif protein identity matrix of Caprine arthritis-encephalitis virus strains.



Appendix H Analysis of the optimal K for the Caprine arthritis-encephalitis virus population structure.

