

Supplementary Table S1. SFV sequences used to characterize the novel SFVlro.

Accession	Host	Host genus	Annotation
NC_039027.1	<i>Ateles sp.</i>	<i>Ateles</i>	Atelidae
NC_039030.1	<i>Callithrix</i>	<i>Callithrix</i>	Callitrichidae
NC_039031.1	<i>Sapajus xanthosternos</i>	<i>Sapajus</i>	Cebidae
LC487610.1	<i>Macaca fuscata</i>	<i>Macaca</i>	Cercopithecidae
LC487611.1	<i>Macaca fuscata yakui</i>	<i>Macaca</i>	Cercopithecidae
LC487615.1	<i>Macaca fuscata</i>	<i>Macaca</i>	Cercopithecidae
LC487619.1	<i>Macaca mulatta</i>	<i>Macaca</i>	Cercopithecidae
LC487620.1	<i>Macaca cyclopis</i>	<i>Macaca</i>	Cercopithecidae
LC487623.1	<i>Macaca fuscata yakui</i>	<i>Macaca</i>	Cercopithecidae
LC487624.1	<i>Macaca fuscata yakui</i>	<i>Macaca</i>	Cercopithecidae
LC487626.1	<i>Macaca fuscata yakui</i>	<i>Macaca</i>	Cercopithecidae
MN178627.1	<i>Leontopithecus chrysomelas</i>	<i>Leontopithecus</i>	Callitrichidae
MN178628.1	<i>Leontopithecus chrysomelas</i>	<i>Leontopithecus</i>	Callitrichidae
MN178629.1	<i>Leontopithecus chrysomelas</i>	<i>Leontopithecus</i>	Callitrichidae
MN178630.1	<i>Leontopithecus chrysomelas</i>	<i>Leontopithecus</i>	Callitrichidae
MN178631.1	<i>Leontopithecus chrysomelas</i>	<i>Leontopithecus</i>	Callitrichidae
MN178632.1	<i>Leontopithecus chrysomelas</i>	<i>Leontopithecus</i>	Callitrichidae
MN178633.1	<i>Leontopithecus chrysomelas</i>	<i>Leontopithecus</i>	Callitrichidae
MN178635.1	<i>Leontopithecus chrysomelas</i>	<i>Leontopithecus</i>	Callitrichidae
MN178636.1	<i>Leontopithecus chrysomelas</i>	<i>Leontopithecus</i>	Callitrichidae
MH368762.1	<i>Brachyteles arachnoides</i>	<i>Brachyteles</i>	Atelidae
KR528435.1	<i>Sapajus xanthosternos</i>	<i>Sapajus</i>	Cebidae
KR528436.1	<i>Sapajus nigritus robustus</i>	<i>Sapajus</i>	Cebidae
KR528438.1	<i>Cacajao melanocephalus</i>	<i>Cacajao</i>	Pitheciidae
KR528439.1	<i>Sapajus nigritus robustus</i>	<i>Sapajus</i>	Cebidae
KR528442.1	<i>Alouatta guariba</i>	<i>Alouatta</i>	Atelidae
KR528443.1	<i>Leontopithecus chrysomelas</i>	<i>Leontopithecus</i>	Callitrichidae

KR528444.1	<i>Callithrix geoffroyi</i>	<i>Callithrix</i>	Callitrichidae
KR528445.1	<i>Chiropotes sp.</i>	<i>Chiropotes</i>	Pitheciidae
KR528447.1	<i>Alouatta belzebul</i>	<i>Alouatta</i>	Atelidae
KR902438.1	<i>Ateles chamek</i>	<i>Ateles</i>	Atelidae
KR902443.1	<i>Ateles geoffroyi</i>	<i>Ateles</i>	Atelidae
KR902444.1	<i>Ateles geoffroyi</i>	<i>Ateles</i>	Atelidae
KR902448.1	<i>Ateles geoffroyi</i>	<i>Ateles</i>	Atelidae
KR902451.1	<i>Ateles hybridus</i>	<i>Ateles</i>	Atelidae
KR902454.1	<i>Alouatta sara</i>	<i>Alouatta</i>	Atelidae
KR902456.1	<i>Alouatta seniculus</i>	<i>Alouatta</i>	Atelidae
KR902458.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KR902459.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KR902460.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KR902461.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KR902464.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KR902465.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KR902466.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KR902470.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KR902473.1	<i>Callithrix jacchus</i>	<i>Callithrix</i>	Callitrichidae
KR902481.1	<i>Pithecia pithecia</i>	<i>Pithecia</i>	Pitheciidae
KR902483.1	<i>Pithecia pithecia</i>	<i>Pithecia</i>	Pitheciidae
KR902490.1	<i>Callithrix jacchus</i>	<i>Callithrix</i>	Callitrichidae
KC283230.1	<i>Macaca fascicularis</i>	<i>Macaca</i>	Cercopithecidae
KC283231.1	<i>Macaca fascicularis</i>	<i>Macaca</i>	Cercopithecidae
KC283234.1	<i>Macaca fascicularis</i>	<i>Macaca</i>	Cercopithecidae
KC283236.1	<i>Macaca fascicularis</i>	<i>Macaca</i>	Cercopithecidae
KC196056.1	<i>Macaca mulatta</i>	<i>Macaca</i>	Cercopithecidae
KC196057.1	<i>Macaca mulatta</i>	<i>Macaca</i>	Cercopithecidae
KC196058.1	<i>Macaca mulatta</i>	<i>Macaca</i>	Cercopithecidae

KC196059.1	<i>Macaca mulatta</i>	<i>Macaca</i>	Cercopithecidae
KC331074.1	<i>Alouatta seniculus</i>	<i>Alouatta</i>	Atelidae
KC331075.1	<i>Sapajus albifrons</i>	<i>Cebus</i>	Cebidae
KC331077.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KC331078.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KC331079.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KC331080.1	<i>Sapajus apella</i>	<i>Sapajus</i>	Cebidae
KC331081.1	<i>Sapajus xanthosternos</i>	<i>Sapajus</i>	Cebidae
KC331082.1	<i>Alouatta guariba</i>	<i>Alouatta</i>	Atelidae
JF746869.1	<i>Macaca mulatta</i>	<i>Macaca</i>	Cercopithecidae
EU527595.1	<i>Pan paniscus</i>	<i>Pan</i>	Hominidae
DQ354074.1	<i>Macaca tonkeana</i>	<i>Macaca</i>	Cercopithecidae
DQ354080.1	<i>Macaca tonkeana</i>	<i>Macaca</i>	Cercopithecidae
AY686195.1	<i>Pan paniscus</i>	<i>Pan</i>	Hominidae
AY686198.1	<i>Macaca arctoides</i>	<i>Macaca</i>	Cercopithecidae
AJ627527.1	<i>Pongo pygmaeus pygmaeus</i>	<i>Pongo</i>	Hominidae
AJ627528.1	<i>Pongo pygmaeus pygmaeus</i>	<i>Pongo</i>	Hominidae
AJ627531.1	<i>Pongo pygmaeus pygmaeus</i>	<i>Pongo</i>	Hominidae
AJ627533.1	<i>Pongo pygmaeus pygmaeus</i>	<i>Pongo</i>	Hominidae
AJ627534.1	<i>Pongo pygmaeus pygmaeus</i>	<i>Pongo</i>	Hominidae
AJ627536.1	<i>Pongo pygmaeus pygmaeus</i>	<i>Pongo</i>	Hominidae
AJ627543.1	<i>Pongo abelii</i>	<i>Pongo</i>	Hominidae
AJ627544.1	<i>Pongo abelii</i>	<i>Pongo</i>	Hominidae
AJ627547.1	<i>Pongo abelii</i>	<i>Pongo</i>	Hominidae
AJ627550.1	<i>Pan paniscus</i>	<i>Pan</i>	Hominidae
AJ627551.1	<i>Pan paniscus</i>	<i>Pan</i>	Hominidae
AY278785.1	<i>Cercocebus torquatus</i>	<i>Cercocebus</i>	Cercopithecidae
AY195689.1	<i>Pongo pygmaeus</i>	<i>Pongo</i>	Hominidae
AJ556783.1	<i>Pongo pygmaeus pygmaeus</i>	<i>Pongo</i>	Hominidae

AF516486.1	<i>Hylobates pileatus</i>	<i>Hylobates</i>	Hylobatidae
AF516487.1	<i>Nomascus leucogenys</i>	<i>Nomascus</i>	Hylobatidae
AF049086.1	<i>Pongo pygmaeus</i>	<i>Pongo</i>	Hominidae
X83298.1	<i>Ateles sp.</i>	<i>Ateles</i>	Atelidae
KR528446.1	<i>Leontopithecus rosalia</i>	<i>Leontopithecus</i>	Callitrichidae
PP960560.1	<i>Leontopithecus rosalia</i>	<i>Leontopithecus</i>	This Study
NC_039023.1	<i>Otolemur crassicaudatus panganiensis</i>	<i>Otolemur</i>	Outgroup

Supplementary Table S2. Likelihood mapping plots values of used aligned.

Region	Percentage	Interpretation
Corner 1	22.4%	Strong signal for topology A
Corner 2	20%	Strong signal for topology B
Corner 3	20.7%	Strong signal for topology C
Edge 1	1.8%	Partial support between A/B
Edge 2	2.2%	Partial support between B/C
Edge 3	2.1%	Partial support between C/A
Center	30.8%	Unresolved quartets (ambiguity)

Supplementary Table S3. Test of substitution saturation performed in all sites. Two-tailed t-tests are used. Percentage of invariant sites were calculated by building an UPGMA tree under the GTR model, with value of P(invariant) of 0,08403.

NumOTU	Iss	Sym		Asym		Conclusion
		Iss.c	p-value	Iss.c	p-value	
4	0.451	0.756	< 0.0001	0.565	< 0.0001	Little saturation
8	0.452	0.729	< 0.0001	0.634	0.0001	Little saturation
14	0.477	0.648	0,0004	0.456	0.6568	Little saturation*
32	0.489	0.688	0,0001	0.369	0.016	Little saturation

For NumOTU 14 under asymmetrical topology (Iss.c = 0.456), Iss was not significantly lower (p = 0.6568).

Supplementary Table S4. Node dates and confidence intervals of major clades of SFV inferred in this study.

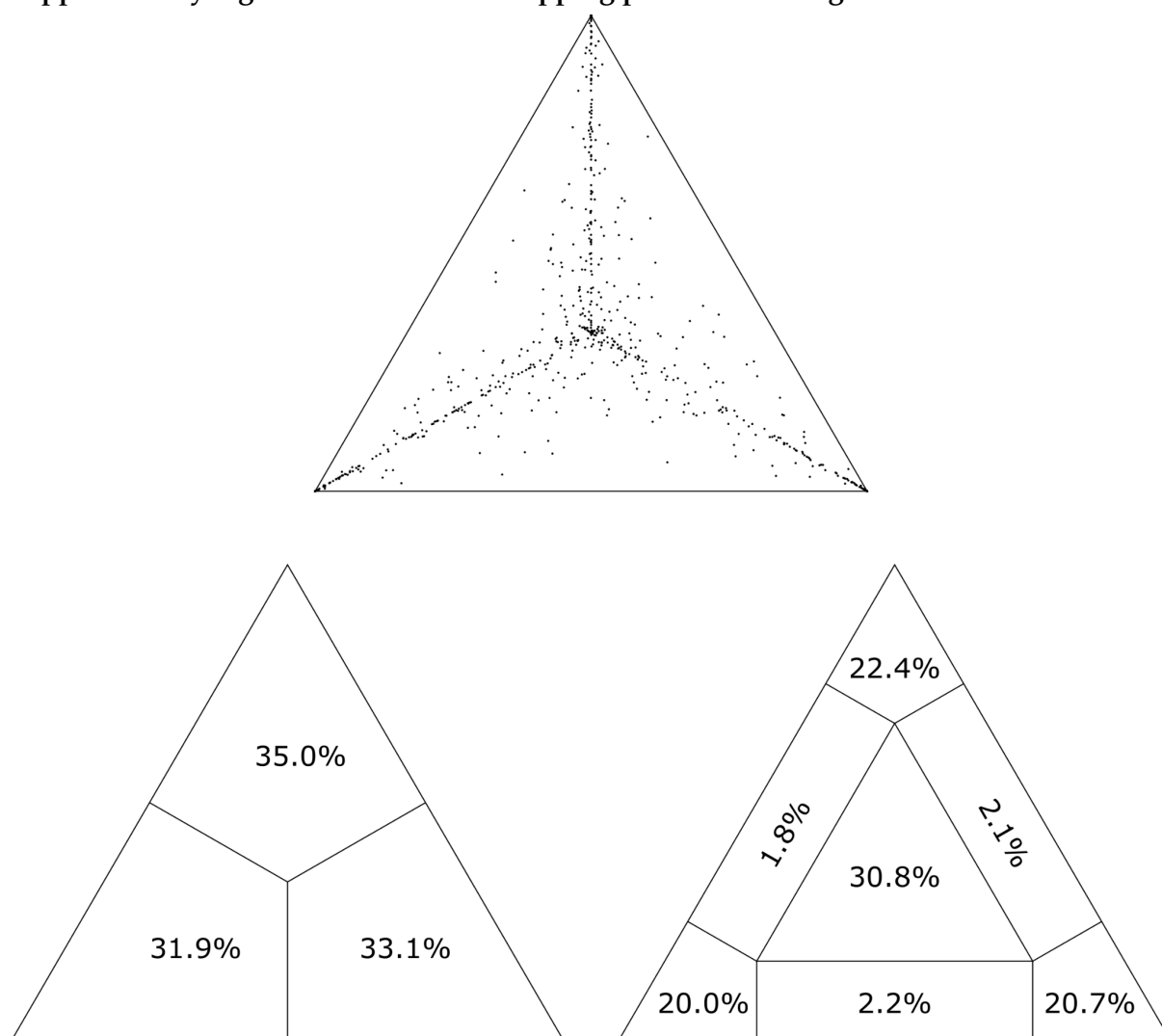
Major SFV Splits	Million Years Ago 95% confidence interval [Lower–Upper]
SFV <i>Leontopithecus rosalia</i>	0.0836 [0.0362 - 0.1931]
SFV <i>Sapajus</i> Strain 1	0.0032 [0 - 0.03588]
SFV <i>Leontopithecus chrysomelas</i> Strain 1	0.0844 [0.021 - 0.3396]
SFV <i>Sapajus</i> Strain 1 & SFV <i>Leontopithecus rosalia</i>	0.7071 [0.3015-1.6858]
SFV <i>Sapajus</i> Strain 1 & SFV <i>Leontopithecus chrysomelas</i> Strain 1	1.1471 [0.5472-2.4046]
SFV <i>Sapajus</i> Strain 2	1.9051 [0.904-3.5752]
SFV <i>Sapajus</i> Strain 1 & 2	3.79 [2.137-6.3811]
SFV Callitrichidae & SFV Cebidae	4.2332 [2.807 - 6.3811]
SFV <i>Sapajus</i> Strain 3	0.2395 [0.1319 - 0.4348]
SFV <i>Sapajus</i> Strain 3 & SFV <i>Leontopithecus chrysomelas</i> Strain 2 & SFV <i>Callithrix</i>	3.652 [2.106 - 6.343]
SFV <i>Callithrix</i>	2.6395 [1.12694 - 5.4884]
SFV <i>Leontopithecus chrysomelas</i> Strain 2	0.0654 [0.0032 - 0.6261]
SFV <i>Leontopithecus chrysomelas</i> Strain 2 & SFV <i>Sapajus nigritus robustus</i> KR528439.1	2.4733 [1.1895 - 5.1426]
SFV Atelidae	12.1589 [9.0628 - 16.3127]
SFV Platyrrhini & Catarrhini*	39.6367 [38.4684 - 40.65]
SFV Platyrrhini	24.5659 [21.8374 - 27.6354]
SFV Catarrhini*	29.1632 [29.1632 - 30.6852]
SFV <i>Macaca</i> *	6.0542 [5.5918 - 6.1425]
SFV <i>Pongo</i> *	1.8633 [1.6461 - 1.8633]
SFV <i>Pan</i> *	8.024 [7.4887 - 8.705]
SFV <i>Pongo</i> & SFV <i>Pan</i> *	20.8554 [19.6804 - 21.8844]
SFV <i>Pongo</i> & SFV <i>Pan</i> & SFV <i>Pongo</i>	21.3642 [19.6804 - 25.6621]

* Calibration points

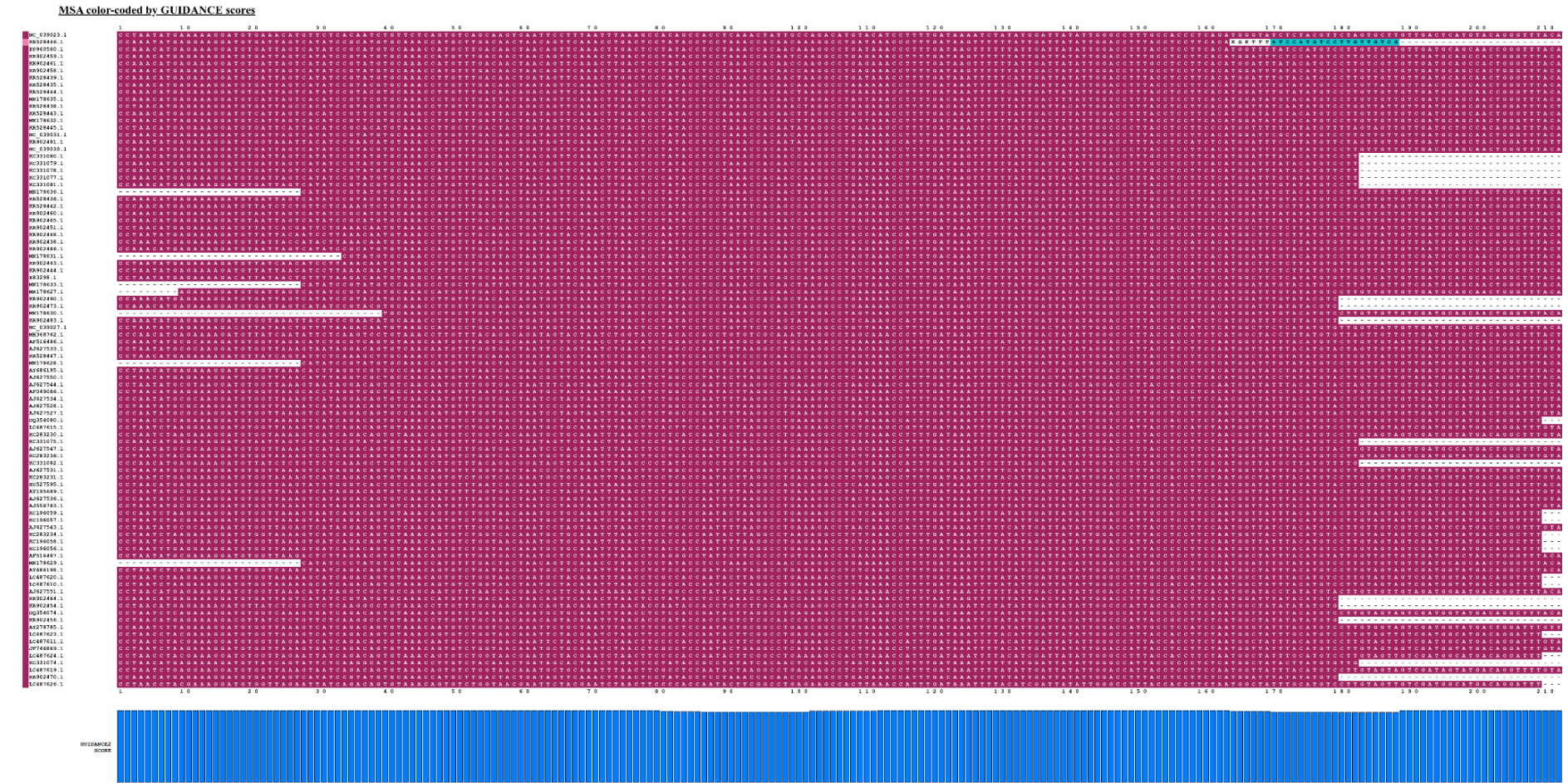
Supplementary Table S5: Geographic Coordinates of *Leontopithecus rosalia*

Species	Location	GPS	Sample type	Number of individuals
<i>Leontopithecus rosalia</i>	Afetiva Farm, Silva Jardim, RJ	22°37'58.4"S 42°25'48.6"W	Oral swab	26
<i>Leontopithecus rosalia</i>	Tamarins Farm, Silva Jardim, RJ	22°36'00.8"S 42°23'35.8"W	Oral swab	5
<i>Leontopithecus rosalia</i>	Igarapé, Silva Jardim, RJ	22°30'25.1"S 42°18'34.4"W	Oral swab	12
<i>Leontopithecus rosalia</i>	Nova esperança, Silva Jardim, RJ	22°37'58.4"S 42°25'48.6"W	Oral swab	19
<i>Leontopithecus rosalia</i>	Rio Vermelho, Rio Bonito, RJ	22°43'20.4"S 42°34'41.9"W	Oral swab	9
<i>Leontopithecus rosalia</i>	Ribeirão, Silva Jardim, RJ	22°31'44.7"S 42°20'41.3"W	Oral swab	2
<i>Leontopithecus rosalia</i>	Santa Helena, Silva Jardim, RJ	22°31'43.5"S 42°20'49.0"W	Oral swab	13
<i>Leontopithecus rosalia</i>	Santa Helena I, Silva Jardim, RJ	22°31'47.4"S 42°19'08.2"W	Oral swab	4
<i>Leontopithecus rosalia</i>	Sítio Quelinho, Silva Jardim, RJ	22°30'26.7"S 42°18'53.9"W	Oral swab	2
<i>Leontopithecus rosalia</i>	Tertúlio, Silva Jardim, RJ	22°36'39.8"S 42°24'48.3"W	Oral swab	2
<i>Leontopithecus rosalia</i>	Monte Moriá, Casemiro de Abreu, RJ	22°25'50.9"S 42°17'38.5"W	Oral swab	5
<i>Leontopithecus rosalia</i>	Andorinha, Casemiro de Abreu, RJ	22°25'50.9"S 42°17'38.5"W	Oral swab	3

Supplementary Figure S1. Likelihood mapping plots of used aligned.



Supplementary Figure S2 - GUIDANCE2 alignment confidence.



Supplementary Figure S3 - Complete timescale phylogenetic tree generated by RelTime-ML. Estimated host divergence dates were used to calibrate internal nodes of the viral tree. The node labels are colored according to the host family used in the dataset. The sequence generated in the current study is marked with a golden star. The x-axis summarizes the geological time scale of the timetree: Oligocene (Ol), Miocene (Mio), Pliocene (Pli) and Pleistocene (Ple).

