

Metagenomic analysis of a throat swab sample collected in China on a patient infected with Varicella Zoster Virus

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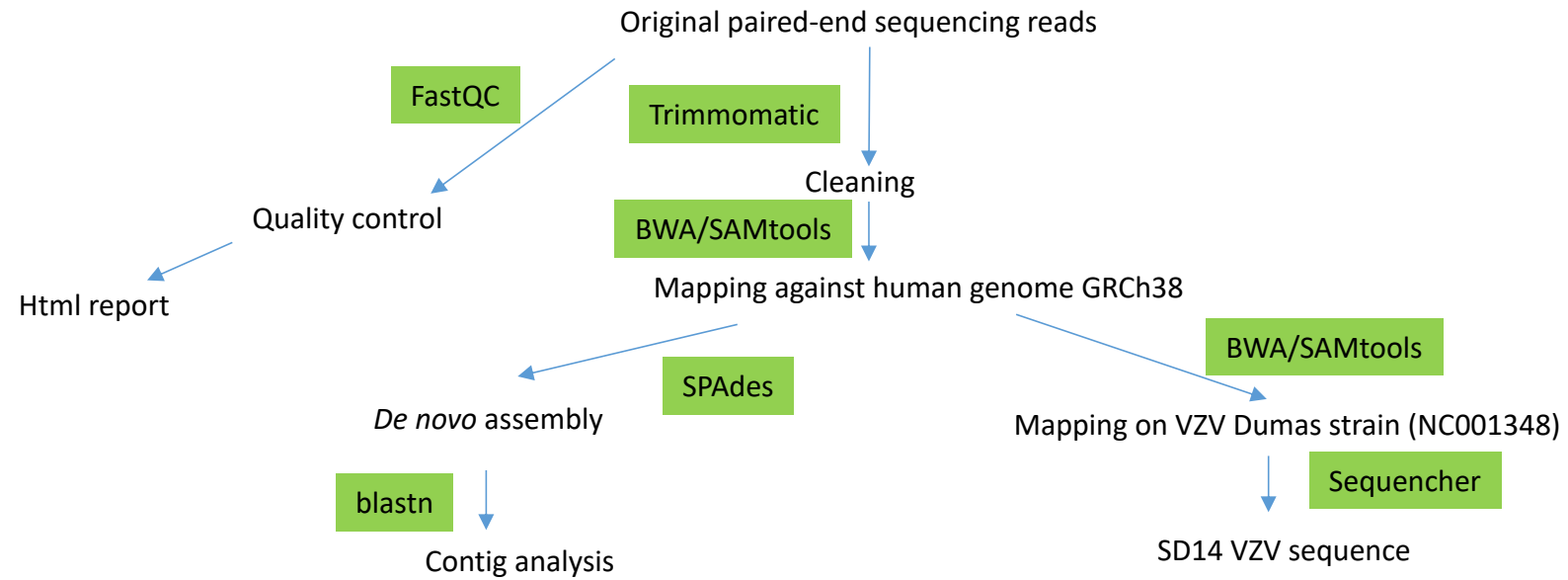
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A



B

Number of reads			
Total	After cleaning	Not human (% relative to total number of reads)	Mapped to Dumas strain NC001348 (% relative to total number of reads)
144412431 paired-end	229,493,683	33141150 (14.4)	11275 (0.03)

Figure S1

Figure S1: Analysis pipeline and number of sequencing reads at each step of the analysis. A. Analysis pipeline. Briefly, after cleaning with trimmomatic, the sequencing reads were depleted from the human genome sequences. The remaining sequences were either assembled using SPAdes or mapped on the Dumas strain sequences. The mapped sequences were assembled with Sequencher. Analysis tools are shown in green. B. Number of sequencing reads at each step of the analysis.



0.01

Figure S2: ML phylogenetic tree of 2294 concatenated SNPs from 223 VZV genomes. Clades are indicated in brackets. Strains related to the vaccine strain Oka are also indicated in bracket SD14 *de novo* sequence is indicated by a black circle. Bootstrap values greater than 70% are indicated. The corresponding NJ tree is shown in Figure 1.

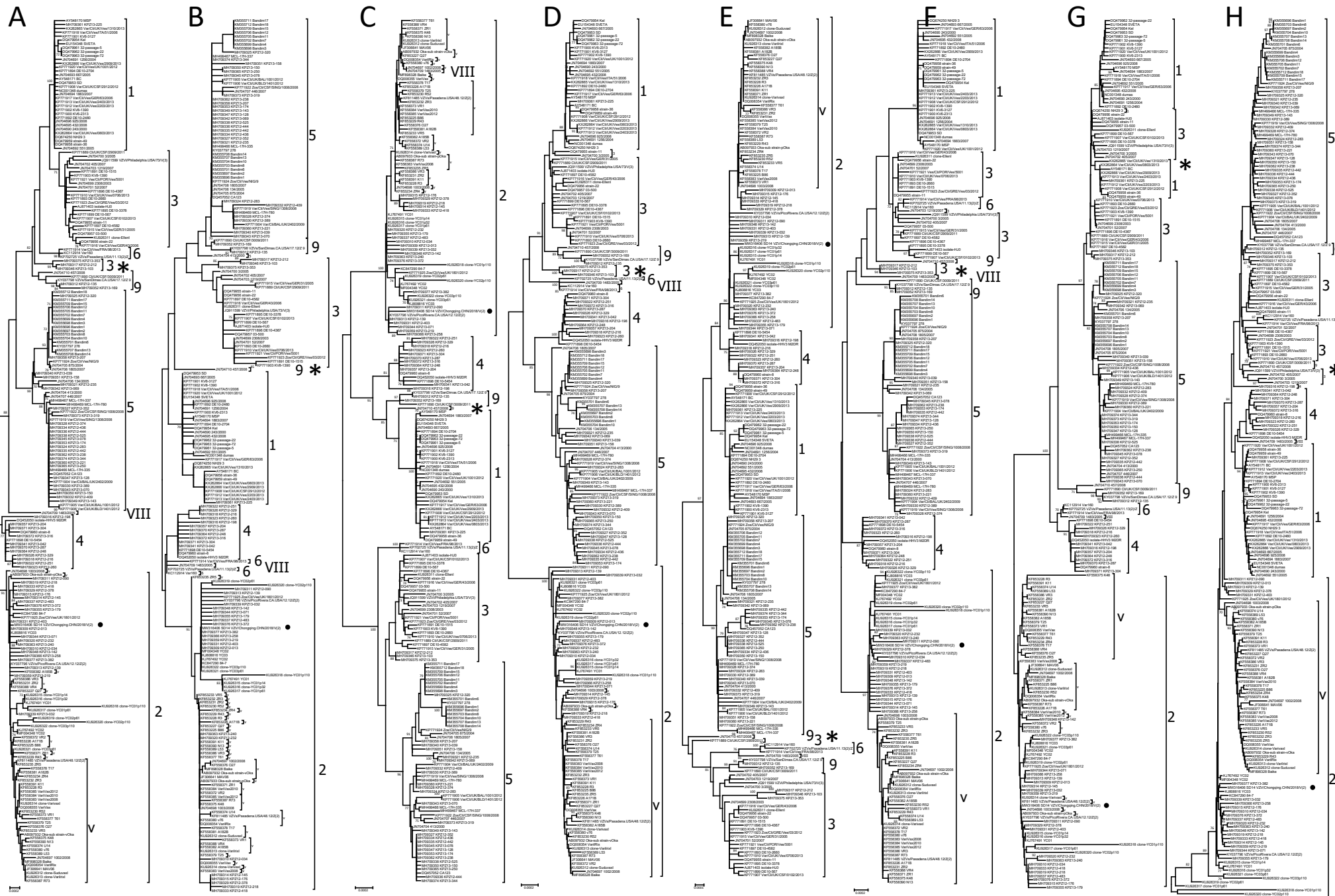


Figure S3

Figure S3: NJ phylogenetic trees on 8 genomic regions (A to H). Genomic regions were previously described (Jensen et al., 2017). Briefly, fragments A, B, C D (5') and H (3') are defined by repeat elements. Fragments D (3'), E, F, G and H (5') are defined by start/stop codon of ORFs. Sequences are identified based on the clade determined in the concatenated SNP tree in Figure 1. Putative interclade recombination events are identified with *. These concern sequences from clades 3, 6 and 9. SD14 did not appear to be involved in any interclade recombination event.

Supplementary Table 1: list of the 222 VZV genomes analyzed in this study

VZV strain	GenBank ID	Clade based on NJ tree (Figure)	Length	Country	Year	Sample	Disease	Reference
Dumas	NC_001348	1	124,884	The Netherlands	Late 1970s	Unknown	Varicella	Davison, A.J., Scott, J.E., 1986. The complete DNA sequence of varicella-zoster virus. J Gen Virol. 67, 1759-1816. doi: 1710.1099/0022-1317-1767-1759-1759.
MSP	AY548170	1	124,883	Minnesota, USA	1995	Vesicle fluid	Varicella	Santos, R.A., Padilla, J.A., Hatfield, C., Grose, C., 1998. Antigenic variation of varicella zoster virus Fc receptor gE: loss of a major B cell epitope in the ectodomain. Virology. 249, 21-31. doi: 10.1006/viro.1998.9313.
BC	AY548171	1	125,459	British Columbia, Canada	1999	Vesicle fluid	Zoster	Tipplés, G.A., Stephens, G.M., Sherlock, C., Bowler, M., Hoy, B., Cook, D., Grose, C., 2002. New variant of varicella-zoster virus. Emerg Infect Dis. 8, 1504-1505. doi: 1510.3201/eid0812.020118.
SD	DQ479953	1	125,087	South Dakota, USA	1980	Unknown	Unknown	Peters, G.A., Tyler, S.D., Grose, C., Severini, A., Gray, M.J., Upton, C., Tipplés, G.A., 2006. A full-genome phylogenetic analysis of varicella-zoster virus reveals a novel origin of replication-based genotyping scheme and evidence of recombination between major circulating clades. J Virol. 80, 9850-9860. doi: 9810.1128/JVI.00715-00706.
Kel	DQ479954	1	125,374	Iowa, USA	2002	Unknown	Zoster	
strain 36	DQ479958	1	125,030	New Brunswick, Canada	1998	Unknown	Varicella	
strain 49	DQ479959	1	125,041	New Brunswick, Canada	1999	Unknown	Varicella	
32 passage 5	DQ479961	1	124,945	Texas, USA	1976	Unknown	Varicella	
32 passage 22	DQ479962	1	125,084	Texas, USA	1976	Unknown	Varicella	
32 passage 72	DQ479963	1	125,169	Texas, USA	1976	Unknown	Varicella	
NH29_3	DQ674250	1	124,811	NH, USA	2000	Unknown	Varicella	Loparev, V.N.; Unpublished; NCID, Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA
SVETA	EU154348	1	124,813	Russia	1999	Vesicle fluid	Varicella	Loparev, V.N., Rubtcova, E.N., Bostik, V., Tzaneva, V., Sauerbrei, A., Robo, A., Sattler-Dornbacher, E., Hanovcova, I., Stepanova, V., Splino, M., Eremin, V., Koskiniemi, M., Vankova, O.E., Schmid, D.S., 2009. Distribution of varicella-zoster virus (VZV) wild-type genotypes in northern and southern Europe: evidence for high conservation of circulating genotypes. Virology. 383, 216-225. doi: 210.1016/j.virol.2008.1010.1026. Epub 2008 Nov 1020.
243/2000	JN704690	1	124,845	Germany	2000	Unknown	Zoster	Zell, R., Taudien, S., Pfaff, F., Wutzler, P., Platzer, M., Sauerbrei, A., 2012. Sequencing of 21 varicella-zoster virus genomes reveals two novel genotypes and evidence of recombination. J Virol. 86, 1608-1622. doi: 1610.1128/JVI.06233-06211. Epub 02011 Nov 06230.
1256/2004	JN704691	1	124,757	Germany	2004	Unknown	Zoster	
551/2005	JN704692	1	124,688	Germany	2005	Unknown	Varicella	
667/2005	JN704693	1	124,884	Germany	2005	Unknown	Varicella	
1883/2007	JN704694	1	124,851	Germany	2007	Unknown	Varicella	
432/2008	JN704695	1	124,867	Germany	2008	Unknown	Zoster	
925/2008	JN704696	1	124,848	Germany	2008	Unknown	Varicella	
Var/Cli/UK/Ves/0803/2013	KX262864	1	124,852	United Kingdom	2013	Vesicle fluid	Varicella	
Var/Cli/UK/Ves/1310/2013	KX262865	1	124,862	United Kingdom	2013	Vesicle fluid	Varicella	Depledge, D.P., Brown, J., Macanovic, J., Underhill, G., Breuer, J., 2016. Viral Genome Sequencing Proves Nosocomial Transmission of Fatal Varicella. J Infect Dis. 214, 1399-1402. doi: 1310.1093/infdis/jiw1398. Epub 2016 Aug 1328.
Var/Cli/UK/Ves/2909/2013	KX262866	1	124,873	United Kingdom	2013	Vesicle fluid	Varicella	
DE10-2480	KP771892	1	124864	Sweden	2010	Vesicle fluid	Zoster	Norberg, P., Depledge, D.P., Kundu, S., Atkinson, C., Brown, J., Haque, T., Hussaini, Y., MacMahon, E., Molyneaux, P., Papaevangelou, V., Sengupta, N., Koay, E.S., Tang, J.W., Underhill, G.S., Grah, A., Studahl, M., Breuer, J., Bergström, T., 2015. Recombination of Globally Circulating Varicella-Zoster Virus. J Virol. 89, 7133-7146. doi: 7110.1128/JVI.00437-00415.
DE10-2704	KP771894	1	124864	Sweden	2010	Vesicle fluid	Zoster	
KV6-2313	KP771901	1	124855	Sweden	2010	CSF	Encephalitis	
KV6-3127	KP771902	1	124836	Sweden	2010	CSF	Encephalitis	
KV8-1390	KP771903	1	124878	Sweden	2010	CSF	Encephalitis	
Var/Cli/UK/CSF/2912/2012	KP771908	1	124852	United Kingdom	2012	CSF	Varicella with	
Var/Cli/UK/Ves/2203/2013	KP771912	1	124818	United Kingdom	2013	Vesicle fluid	Varicella	
Var/Cli/UK/Ves/2403/2013	KP771913	1	124758	United Kingdom	2013	Vesicle fluid	Varicella	
Var/Cli/Ves/GER/63/2006	KP771917	1	124846	Germany	2006	Vesicle fluid	Varicella	
Var/Cli/Ves/ITA/51/2006	KP771918	1	124858	Italy	2006	Vesicle fluid	Varicella	
Var/Cli/Ves/UK/1001/2012	KP771920	1	124874	United Kingdom	2012	Vesicle fluid	Varicella	
KPZ13-225	MH709361	1	125,127	USA	2013	Unknown	Zoster	Jensen, N.J., Depledge, D.P., Ng, T.F.F., Leung, J., Quinlivan, M., Radford, K.W., Folster, J., Tseng, H.F., LaRossa, P., Jacobsen, S.J., Breuer, J., Schmid, D.S., 2020. Analysis of the reiteration regions (R1 to R5) of varicella-zoster virus. Virology. 546:38-50., 10.1016/j.virol.2020.1003.1008. Epub 2020 Apr 1014.
84-7	KC847290	2	125,083	China	1984	Unknown		Li Xiuling, Wang Xiaoxiao, Zhang zhongyang, Hao Chunsheng, Zhang Chen, He Weiwei. Sequencing of Whole Genome of Varicella-Zoster Virus 84-7 Strain[J]. Zhongguo Sheng Wu Zhi Pin Xue Za Zhi, 2010, 23(01):1-8.
YC01	KJ767491	2	125,144	South Korea	2012	Unknown	Zoster	Kim, J.I., Ji, G.Y., Park, H.S. and Lee, C.H. unpublished. Microbiology, Chungbuk National University, 52 Naesudong-Ro, Cheongju, Chungbuk 361-763, Korea
YC02	KJ767492	2	125,150	South Korea	2012	Unknown	Varicella	
YC03	KJ808816	2	125,162	South Korea	2012	Unknown	Zoster	Kim, J.A., Park, S.K., Kumar, M., Lee, C.H., Shin, O.S., 2015. Insights into the role of immunosenescence during varicella zoster virus infection (shingles) in the aging cell model. Oncotarget 6, 35324-35343. doi: 35310.18632/oncotarget.36117.
clone YC01p14	KU926315	2	125,135	South Korea	2012	Unknown	Zoster	Jeon, J.S., Won, Y.H., Kim, I.K., Ahn, J.H., Shin, O.S., Kim, J.H., Lee, C.H., 2016. Analysis of single nucleotide polymorphism among Varicella-Zoster Virus and identification of vaccine-specific sites. Virology. 496:277-286., 10.1016/j.virol.2016.1006.1017. Epub 2016 Jul 1011.
clone YC01p32	KU926316	2	125,134	South Korea	2012	Unknown	Zoster	
clone YC01p61	KU926317	2	125,138	South Korea	2012	Unknown	Zoster	
clone YC01p110	KU926318	2	125,120	South Korea	2012	Unknown	Zoster	
clone YC02p61	KU926319	2	125,121	South Korea	2012	Unknown	Varicella	
clone YC02p110	KU926320	2	125,131	South Korea	2012	Unknown	Varicella	
clone YC03p61	KU926321	2	125,150	South Korea	2012	Unknown	Varicella	
clone YC03p110	KU926322	2	125,141	South Korea	2012	Unknown	Varicella	

Supplementary Table 1: list of the 222 VZV genomes analyzed in this study

VZV strain	GenBank ID	Clade based on NJ tree (Figure)	Length	Country	Year	Sample	Disease	Reference
Zos/Cli/Ves/UK/1801/2012	KP771925	2	124,882	United Kingdom	2012	Vesicle fluid	Zoster	Norberg, P., Depledge, D.P., Kundu, S., Atkinson, C., Brown, J., Haque, T., Hussaini, Y., MacMahon, E., Molyneaux, P., Papaevangelou, V., Sengupta, N., Koay, E.S., Tang, J.W., Underhill, G.S., Grah, A., Studahl, M., Breuer, J., Bergström, T., 2015. Recombination of Globally Circulating Varicella-Zoster Virus. J Virol. 89, 7133-7146. doi: 7110.1128/JVI.00437-00415.
'092	KY037796	2	125,220	USA	2012	Skin lesion	Zoster	Jensen, N.J., Rivaller, P., Tseng, H.F., Quinlivan, M.L., Radford, K., Folster, J., Harpaz, R., LaRussa, P., Jacobsen, S., Scott Schmid, D., 2017. Revisiting the genotyping scheme for varicella-zoster viruses based on whole-genome comparisons. J Gen Virol. 98, 1434-1438. doi: 1410.1099/jgv.1430.000772. Epub 002017 Jun 000714.
YC02	MF004348	2	125,134	South Korea	2012	Unknown	Varicella	Won,Y.H., Park,J.S., Kang,J.H., Jeon,J.S., Ahn,J.H., Song,M.J., Ok Sarah,O.S. and Lee,C.H. unpublished. Microbiology, Chungbuk National University, 1, Chungdae-ro, Seowon-gu, Cheongju, Chungbuk 28644, Korea
KPZ12-013	MH709309	2	125,289	USA	2012	Skin lesion	Zoster	Jensen, N.J., Depledge, D.P., Ng, T.F.F., Leung, J., Quinlivan, M., Radford, K.W., Folster, J., Tseng, H.F., LaRussa, P., Jacobsen, S.J., Breuer, J., Schmid, D.S., 2020. Analysis of the reiteration regions (R1 to R5) of varicella-zoster virus. Virology. 546:38-50., 10.1016/j.virol.2020.1003.1008. Epub 2020 Apr 1014.
KPZ12-034	MH709310	2	125,073	USA	2012	Skin lesion	Zoster	
KPZ12-090	MH709311	2	125,196	USA	2012	Skin lesion	Zoster	
KPZ12-139	MH709313	2	124,751	USA	2012	Skin lesion	Zoster	
KPZ12-145	MH709314	2	125,187	USA	2012	Skin lesion	Zoster	
KPZ12-176	MH709315	2	125,303	USA	2012	Skin lesion	Zoster	
KPZ12-218	MH709319	2	125,082	USA	2012	Skin lesion	Zoster	
KPZ12-232	MH709320	2	124,965	USA	2012	Skin lesion	Zoster	
KPZ12-378	MH709329	2	124,922	USA	2012	Skin lesion	Zoster	
KPZ12-403	MH709331	2	125,143	USA	2012	Skin lesion	Zoster	
KPZ12-418	MH709333	2	125,030	USA	2012	Skin lesion	Zoster	
KPZ12-483	MH709337	2	125,231	USA	2012	Skin lesion	Zoster	
KPZ13-032	MH709339	2	125,032	USA	2013	Skin lesion	Zoster	
KPZ13-071	MH709344	2	125,045	USA	2013	Skin lesion	Zoster	
KPZ13-142	MH709348	2	125,220	USA	2013	Skin lesion	Zoster	
KPZ13-179	MH709355	2	125,176	USA	2013	Skin lesion	Zoster	
KPZ13-219	MH709359	2	124,940	USA	2013	Skin lesion	Zoster	
KPZ13-240	MH709363	2	124,992	USA	2019	Skin lesion	Zoster	
KPZ13-258	MH709366	2	124,928	USA	2013	Skin lesion	Zoster	
KPZ13-372	MH709376	2	124,981	USA	2013	Skin lesion	Zoster	
KPZ13-382	MH709377	2	124,999	USA	2013	Skin lesion	Zoster	
isolate HJ0	AJ871403	3	124,928	Erlangen, Germany	Unknown	Unknown	Unknown	Fickenscher,H. unpublished. Department of Virology, University of Heidelberg Medical School, Im Neuenheimer Feld 324, D-69120, GERMANY
strain 11	DQ479955	3	125,370	New Brunswick	1996	Unknown	Zoster	Peters, G.A., Tyler, S.D., Grose, C., Severini, A., Gray, M.J., Upton, C., Tipples, G.A., 2006. A full-genome phylogenetic analysis of varicella-zoster virus reveals a novel origin of replication-based genotyping scheme and evidence of recombination between major circulating clades. J Virol. 80, 9850-9860. doi: 9810.1128/JVI.00715-00706.
strain 22	DQ479956	3	124,868	New Brunswick	1998	Unknown	Zoster	
03-500	DQ479957	3	125,239	Alberta, Canada	2003	Unknown	Unknown	Zell, R., Taudien, S., Pfaff, F., Wutzler, P., Platzer, M., Sauerbrei, A., 2012. Sequencing of 21 varicella-zoster virus genomes reveals two novel genotypes and evidence of recombination. J Virol. 86, 1608-1622. doi: 1610.1128/JVI.06233-06211. Epub 02011 Nov 06230.
2308/2003	JN704699	3	124,847	Germany	2003	Unknown	Varicella	
3/2005	JN704700	3	124,756	Germany	2005	Unknown	Varicella	
52/2007	JN704701	3	124,816	Germany	2007	Unknown	Zoster	
405/2007	JN704702	3	124,697	Germany	2007	Unknown	Varicella	
1219/2007	JN704703	3	124,617	Germany	2007	Unknown	Zoster	Jeon, J.S., Won, Y.H., Kim, I.K., Ahn, J.H., Shin, O.S., Kim, J.H., Lee, C.H., 2016. Analysis of single nucleotide polymorphism among Varicella-Zoster Virus and identification of vaccine-specific sites. Virology. 496:277-286., 10.1016/j.virol.2016.1006.1017. Epub 2016 Jul 1011.
clone EllenI	KU926311	3	124,789	South Korea	2014	Unknown	Varicella	
Cli/UK/CSF/2909/2011	KP771889	3	124844	United Kingdom	2011	CSF	Encephalitis	Norberg, P., Depledge, D.P., Kundu, S., Atkinson, C., Brown, J., Haque, T., Hussaini, Y., MacMahon, E., Molyneaux, P., Papaevangelou, V., Sengupta, N., Koay, E.S., Tang, J.W., Underhill, G.S., Grah, A., Studahl, M., Breuer, J., Bergström, T., 2015. Recombination of Globally Circulating Varicella-Zoster Virus. J Virol. 89, 7133-7146. doi: 7110.1128/JVI.00437-00415.
DE10-1515	KP771891	3	124766	Sweden	2010	Vesicle fluid	Zoster	
DE10-2660	KP771893	3	124859	Sweden	2010	Vesicle fluid	Zoster	
DE10-3378	KP771895	3	124875	Sweden	2010	Vesicle fluid	Zoster	
DE10-4367	KP771896	3	124864	Sweden	2010	Vesicle fluid	Zoster	
DE10-4582	KP771897	3	124866	Sweden	2010	Vesicle fluid	Zoster	
DE10-567	KP771899	3	124878	Sweden	2010	Vesicle fluid	Zoster	
KV8-1390	KP771903	3	124878	Sweden	2010	CSF	Encephalitis	
Var/Cli/UK/CSF/0102/2013	KP771907	3	124854	United Kingdom	2013	CSF	Varicella	
Var/Cli/UK/Ves/0706/2013	KP771910	3	124799	United Kingdom	2013	Vesicle fluid	Zoster with encephalitis	
Var/Cli/Ves/GER/31/2005	KP771915	3	124858	Germany	2005	Vesicle fluid	Varicella	
Var/Cli/Ves/GER/43/2006	KP771916	3	124827	Germany	2010	Vesicle fluid	Varicella	
Ves/Cli/POR/Ves/5001	KP771921	3	124792	Portugal	2010	Vesicle fluid	Varicella	
Zos/Cli/GRE/Ves/03/2012	KP771923	3	124855	Greece	2013	Vesicle fluid	Zoster	

Supplementary Table 1: list of the 222 VZV genomes analyzed in this study

VZV strain	GenBank ID	Clade based on NJ tree (Figure)	Length	Country	Year	Sample	Disease	Reference
VZV/Philadelphia,USA/73/V[3]	JQ911599	3	124,788	Philadelphia, USA	1973	Unknown	Varicella	Madupu,R., Halpin,R., Fedorova,N., Stockwell,T., Amedeo,P., Bishop,B., Edworthy,P., Gupta,N., Katzel,D., Li,K., Schobel,S., Shrivastava,S., Thovarai,V., Wang,S., Folster,J., Radford,K., Schmid,S., Wentworth,D.E. and Bellini,W. unpublished. J. Craig Venter Institute, 9704 Medical Center Drive, Rockville, MD 20850, USA
KPZ12-212	MH709317	3	125,305	USA	2012	Skin lesion	Zoster	Jensen, N.J., Depledge, D.P., Ng, T.F.F., Leung, J., Quinlivan, M., Radford, K.W., Folster, J., Tseng, H.F., LaRussa, P., Jacobsen, S.J., Breuer, J., Schmid, D.S., 2020. Analysis of the reiteration regions (R1 to R5) of varicella-zoster virus. Virology. 546:38-50., 10.1016/j.virol.2020.1003.1008. Epub 2020 Apr 1014.
KPZ13-103	MH709346	3	124,844	USA	2013	Skin lesion	Zoster	
KPZ13-353	MH709375	3	125,016	USA	2013	Skin lesion	Zoster	
isolate HHV3_M2DR	DQ452050	4	124,770	Morocco	2000	Unknown	Varicella	Norberg, P., Liljeqvist, J.A., Bergström, T., Sammons, S., Schmid, D.S., Loparev, V.N., 2006. Complete-genome phylogenetic approach to varicella-zoster virus evolution: genetic divergence and evidence for recombination. J Virol. 80, 9569-9576. doi: 9510.1128/JVI.00835-00806.
strain 8	DQ479960	4	125,451	New Brunswick, Canada	1995	Unknown	Zoster	Peters, G.A., Tyler, S.D., Grose, C., Severini, A., Gray, M.J., Upton, C., Tipples, G.A., 2006. A full-genome phylogenetic analysis of varicella-zoster virus reveals a novel origin of replication-based genotyping scheme and evidence of recombination between major circulating clades. J Virol. 80, 9850-9860. doi: 9810.1128/JVI.00715-00706.
DE10-5454	KP771898	4	124,856	Sweden	2010	Vesicle fluid	Zoster	Norberg, P., Depledge, D.P., Kundu, S., Atkinson, C., Brown, J., Haque, T., Hussaini, Y., MacMahon, E., Molyneaux, P., Papaevangelou, V., Sengupta, N., Koay, E.S., Tang, J.W., Underhill, G.S., Grah, A., Studahl, M., Breuer, J., Bergström, T., 2015. Recombination of Globally Circulating Varicella-Zoster Virus. J Virol. 89, 7133-7146. doi: 7110.1128/JVI.00437-00415.
KPZ12-198	MH709316	4	124,776	USA	2012	Skin lesion	Zoster	Jensen, N.J., Depledge, D.P., Ng, T.F.F., Leung, J., Quinlivan, M., Radford, K.W., Folster, J., Tseng, H.F., LaRussa, P., Jacobsen, S.J., Breuer, J., Schmid, D.S., 2020. Analysis of the reiteration regions (R1 to R5) of varicella-zoster virus. Virology. 546:38-50., 10.1016/j.virol.2020.1003.1008. Epub 2020 Apr 1014.
KPZ12-216	MH709318	4	125,234	USA	2012	Skin lesion	Zoster	
KPZ12-251	MH709322	4	125,150	USA	2012	Skin lesion	Zoster	
KPZ12-260	MH709323	4	125,056	USA	2012	Skin lesion	Zoster	
KPZ12-329	MH709326	4	124,987	USA	2012	Skin lesion	Zoster	
KPZ13-042	MH709341	4	124,852	USA	2013	Skin lesion	Zoster	
KPZ13-204	MH709357	4	125,032	USA	2013	Skin lesion	Zoster	
KPZ13-248	MH709364	4	124,779	USA	2013	Skin lesion	Zoster	
KPZ13-287	MH709370	4	125,075	USA	2013	Skin lesion	Zoster	
KPZ13-304	MH709371	4	124,776	USA	2013	Skin lesion	Zoster	
KPZ13-316	MH709372	4	124,942	USA	2013	Skin lesion	Zoster	
CA123	DQ457052	5	124,771	California, USA	1990s	Vesicle fluid	Varicella	Loparev, V.N., Rubtcova, E.N., Bostik, V., Govil, D., Birch, C.J., Druce, J.D., Schmid, D.S., Croxson, M.C., 2007. Identification of five major and two minor genotypes of varicella-zoster virus strains: a practical two-amplicon approach used to genotype clinical isolates in Australia and New Zealand. J Virol. 81, 12758-12765. doi: 12710.11128/JVI.01145-12707. Epub 12007 Sep 12726.
413/2000	JN704704	5	124,838	Germany	2000	Unknown	Varicella	Zell, R., Taudien, S., Pfaff, F., Wutzler, P., Platzler, M., Sauerbrei, A., 2012. Sequencing of 21 varicella-zoster virus genomes reveals two novel genotypes and evidence of recombination. J Virol. 86, 1608-1622. doi: 1610.1128/JVI.06233-06211. Epub 02011 Nov 06230.
875/2004	JN704705	5	124,844	Germany	2004	Unknown	Varicella	
134/2005	JN704706	5	124,846	Germany	2005	Unknown	Varicella	
446/2007	JN704707	5	124,861	Germany	2007	Unknown	Varicella	
1805/2007	JN704708	5	124,848	Germany	2007	Unknown	Varicella	
Var/Cli/BAL/UK/2402/2009	KP771904	5	124,862	United Kingdom	2009	Bronchoalveolar	Varicella	Norberg, P., Depledge, D.P., Kundu, S., Atkinson, C., Brown, J., Haque, T., Hussaini, Y., MacMahon, E., Molyneaux, P., Papaevangelou, V., Sengupta, N., Koay, E.S., Tang, J.W., Underhill, G.S., Grah, A., Studahl, M., Breuer, J., Bergström, T., 2015. Recombination of Globally Circulating Varicella-Zoster Virus. J Virol. 89, 7133-7146. doi: 7110.1128/JVI.00437-00415.
Var/Cli/UK/BAL/1001/2012	KP771905	5	124,829	United Kingdom	2012	Bronchoalveolar	Varicella	
Var/Cli/UK/BLD/1401/2012	KP771906	5	124,850	United Kingdom	2012	Blood	Varicella	
Var/Cli/Ves/SING/1308/2008	KP771919	5	124,832	Singapore	2008	Vesicle fluid	Varicella	Norberg, P., Depledge, D.P., Kundu, S., Atkinson, C., Brown, J., Haque, T., Hussaini, Y., MacMahon, E., Molyneaux, P., Papaevangelou, V., Sengupta, N., Koay, E.S., Tang, J.W., Underhill, G.S., Grah, A., Studahl, M., Breuer, J., Bergström, T., 2015. Recombination of Globally Circulating Varicella-Zoster Virus. J Virol. 89, 7133-7146. doi: 7110.1128/JVI.00437-00415.
Zos/Cli/CSF/SING/1008/2008	KP771922	5	124,824	Singapore	2008	CSF	Zoster and cerebellitis	
Zos/Cli/Ves/NIG/9	KP771924	5	124,867	Nigeria	2010	Vesicle fluid	Zoster	Depledge, D.P., Gray, E.R., Kundu, S., Cooray, S., Poulsen, A., Aaby, P., Breuer, J., 2014a. Evolution of cocirculating varicella-zoster virus genotypes during a chickenpox outbreak in Guinea-Bissau. J Virol. 88, 13936-13946. doi: 13910.11128/JVI.02337-13914. Epub 12014 Oct 13931.
Bandim1	KM355696	5	125,039	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim2	KM355697	5	124,843	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim3	KM355698	5	125,212	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim4	KM355699	5	125,212	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim6	KM355701	5	125,065	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim7	KM355702	5	124,830	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim8	KM355703	5	124,826	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim10	KM355704	5	124,783	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim11	KM355705	5	125,208	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim12	KM355706	5	125,212	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim13	KM355707	5	125,060	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim14	KM355708	5	125,065	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim15	KM355709	5	125,234	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim17	KM355711	5	125,234	Guinea-Bissau	2001	Vesicle fluid	Varicella	
Bandim18	KM355712	5	124,810	Guinea-Bissau	2001	Vesicle fluid	Varicella	

Supplementary Table 1: list of the 222 VZV genomes analyzed in this study

VZV strain	GenBank ID	Clade based on NJ tree (Figure)	Length	Country	Year	Sample	Disease	Reference
278	KY037797	5	124,840	USA	2014	Skin lesion	Zoster	Jensen, N.J., Rivaller, P., Tseng, H.F., Quinlivan, M.L., Radford, K., Folster, J., Harpaz, R., LaRussa, P., Jacobsen, S., Scott Schmid, D., 2017. Revisiting the genotyping scheme for varicella-zoster viruses based on whole-genome comparisons. J Gen Virol. 98, 1434-1438. doi: 1410.1099/jgv.1430.000772. Epub 002017 Jun 000714.
MCL-17H-335	MH499466	5	124,832	Delhi, India	2017	Unknown	Unknown	Yadav, P.D. Unpublished. Maximum Containment Laboratory, National Institute of Virology, Pashan, Pune, Maharashtra 411021, India
MCL-17H-337	MH499467	5	121,562	India	2017	Unknown	Unknown	
MCL-17H-780	MH499469	5	123,769	India	2017	Unknown	Unknown	
KPZ12-235	MH709321	5	125,062	USA	2012	Skin lesion	Zoster	Jensen, N.J., Depledge, D.P., Ng, T.F.F., Leung, J., Quinlivan, M., Radford, K.W., Folster, J., Tseng, H.F., LaRussa, P., Jacobsen, S.J., Breuer, J., Schmid, D.S., 2020. Analysis of the reiteration regions (R1 to R5) of varicella-zoster virus. Virology. 546:38-50., 10.1016/j.virol.2020.1003.1008. Epub 2020 Apr 1014.
KPZ12-283	MH709324	5	125,091	USA	2012	Skin lesion	Zoster	
KPZ12-320	MH709325	5	125,072	USA	2012	Skin lesion	Zoster	
KPZ12-352	MH709327	5	124,806	USA	2012	Skin lesion	Zoster	
KPZ12-374	MH709328	5	124,859	USA	2012	Skin lesion	Zoster	
KPZ12-389	MH709330	5	124,716	USA	2012	Skin lesion	Zoster	
KPZ12-409	MH709332	5	124,984	USA	2012	Skin lesion	Zoster	
KPZ12-436	MH709334	5	124,845	USA	2012	Skin lesion	Zoster	
KPZ12-442	MH709335	5	124,911	USA	2012	Skin lesion	Zoster	
KPZ12-444	MH709336	5	124,899	USA	2012	Skin lesion	Zoster	
KPZ12-525	MH709338	5	125,065	USA	2012	Skin lesion	Zoster	
KPZ13-039	MH709340	5	125,194	USA	2013	Skin lesion	Zoster	
KPZ13-069	MH709342	5	124,915	USA	2013	Skin lesion	Zoster	
KPZ13-070	MH709343	5	124,886	USA	2013	Skin lesion	Zoster	
KPZ13-078	MH709345	5	124,808	USA	2013	Skin lesion	Zoster	
KPZ13-128	MH709347	5	125,007	USA	2013	Skin lesion	Zoster	
KPZ13-143	MH709349	5	125,103	USA	2013	Skin lesion	Zoster	
KPZ13-150	MH709350	5	125,037	USA	2013	Skin lesion	Zoster	
KPZ13-158	MH709351	5	124,613	USA	2013	Skin lesion	Zoster	
KPZ13-174	MH709353	5	124,967	USA	2013	Skin lesion	Zoster	
KPZ13-207	MH709358	5	125,123	USA	2013	Skin lesion	Zoster	
KPZ13-221	MH709360	5	124,994	USA	2013	Skin lesion	Zoster	
KPZ13-238	MH709362	5	124,996	USA	2013	Skin lesion	Zoster	
KPZ13-250	MH709365	5	124,846	USA	2013	Skin lesion	Zoster	
KPZ13-319	MH709373	5	124,951	USA	2013	Skin lesion	Zoster	
KPZ13-344	MH709374	5	125,069	USA	2013	Skin lesion	Zoster	
Var160	KC112914	6	124,884	Mexico	2007	Vesicle fluid	Varicella	Garcés-Ayala, F., Rodríguez-Castillo, A., Ortiz-Alcántara, J.M., Gonzalez-Durán, E., Segura-Candelas, J.M., Pérez-Agüeros, S.I., Escobar-Escamilla, N., Méndez-Tenorio, A., Diaz-Quinónez, J.A., Ramirez-González, J.E., 2015. Full-Genome Sequence of a Novel Varicella-Zoster Virus Clade Isolated in Mexico. Genome Announc. 3, e00752-00715. doi: 00710.01128/genomeA00752-00715.
Var/Cli/Ves/FRA/98/2013	KP771914	6	124822	France	2013	Vesicle fluid	Varicella	Norberg, P., Depledge, D.P., Kundu, S., Atkinson, C., Brown, J., Haque, T., Hussaini, Y., MacMahon, E., Molyneaux, P., Papaevangelou, V., Sengupta, N., Koay, E.S., Tang, J.W., Underhill, G.S., Grah, A., Studahl, M., Breuer, J., Bergström, T., 2015. Recombination of Globally Circulating Varicella-Zoster Virus. J Virol. 89, 7133-7146. doi: 7110.1128/JVI.00437-00415.
VZVs/PasadenaUSA/11.13 (2)/Z	KP702725	6	125,148	USA	2013	Skin lesion	Zoster	Jensen, N.J., Rivaller, P., Tseng, H.F., Quinlivan, M.L., Radford, K., Folster, J., Harpaz, R., LaRussa, P., Jacobsen, S., Scott Schmid, D., 2017. Revisiting the genotyping scheme for varicella-zoster viruses based on whole-genome comparisons. J Gen Virol. 98, 1434-1438. doi: 1410.1099/jgv.1430.000772. Epub 002017 Jun 000714.
457/2008	JN704710	9	124,472	Germany	2008	Unknown	Varicella	Zell, R., Taudien, S., Pfaff, F., Wutzler, P., Platzter, M., Sauerbrei, A., 2012. Sequencing of 21 varicella-zoster virus genomes reveals two novel genotypes and evidence of recombination. J Virol. 86, 1608-1622. doi: 1610.1128/JVI.06233-06211. Epub 02011 Nov 06230.
Cli/UK/CSF/3009/2011	KP771890	9		United Kingdom	2011	CSF	Encephalitis	Norberg, P., Depledge, D.P., Kundu, S., Atkinson, C., Brown, J., Haque, T., Hussaini, Y., MacMahon, E., Molyneaux, P., Papaevangelou, V., Sengupta, N., Koay, E.S., Tang, J.W., Underhill, G.S., Grah, A., Studahl, M., Breuer, J., Bergström, T., 2015. Recombination of Globally Circulating Varicella-Zoster Virus. J Virol. 89, 7133-7146. doi: 7110.1128/JVI.00437-00415.
VZVs/SanDimasCAUSA/17.12/Z_9	KY037798	9	125,213	USA	2012	Skin lesion	Zoster	Jensen, N.J., Rivaller, P., Tseng, H.F., Quinlivan, M.L., Radford, K., Folster, J., Harpaz, R., LaRussa, P., Jacobsen, S., Scott Schmid, D., 2017. Revisiting the genotyping scheme for varicella-zoster viruses based on whole-genome comparisons. J Gen Virol. 98, 1434-1438. doi: 1410.1099/jgv.1430.000772. Epub 002017 Jun 000714.
KPZ12-135	MH709312	9	124,930	USA	2012	Skin lesion	Zoster	Jensen, N.J., Depledge, D.P., Ng, T.F.F., Leung, J., Quinlivan, M., Radford, K.W., Folster, J., Tseng, H.F., LaRussa, P., Jacobsen, S.J., Breuer, J., Schmid, D.S., 2020. Analysis of the reiteration regions (R1 to R5) of varicella-zoster virus. Virology. 546:38-50., 10.1016/j.virol.2020.1003.1008. Epub 2020
KPZ13-169	MH709352	9	125,157	USA	2013	Skin lesion	Zoster	
1483/2005	JN704709	VIII	124,718	Germany	2005	Unknown	Varicella	Zell, R., Taudien, S., Pfaff, F., Wutzler, P., Platzter, M., Sauerbrei, A., 2012. Sequencing of 21 varicella-zoster virus genomes reveals two novel genotypes and evidence of recombination. J Virol. 86, 1608-1622. doi: 1610.1128/JVI.06233-06211. Epub 02011 Nov 06230.

Supplementary Table 1: list of the 222 VZV genomes analyzed in this study

VZV strain	GenBank ID	Clade based on NJ tree (Figure)	Length	Country	Year	Sample	Disease	Reference
vOka	AB097932	vac	125,078	Japan	1976	Vaccine lot	N/A	Gomi, Y., Sunamachi, H., Mori, Y., Nagaïke, K., Takahashi, M., Yamanishi, K., 2002. Comparison of the complete DNA sequences of the Oka varicella vaccine and its parental virus. J Virol. 76, 11447-11459. doi: 11410.11128/jvi.11476.11422.11447-11459.12002.
pOka	AB097933	vac	125,125	Japan	1970	Vesicle fluid	Varicella	
VariRix	DQ008354	vac	124,821	Japan	1984	Vaccine lot	N/A	
VariVax	DQ008355	vac	124,815	Japan	1995	Vaccine lot	N/A	
MAV06	JF306641	vac	124,758	South Korea	1989	Vaccine lot	N/A	Kim, J.I., Jung, G.S., Kim, Y.Y., Ji, G.Y., Kim, H.S., Wang, W.D., Park, H.S., Park, S.Y., Kim, G.H., Kwon, S.N., Lee, K.M., Ahn, J.H., Yoon, Y., Lee, C.H., 2011. Sequencing and characterization of Varicella-zoster virus vaccine strain SuduVax. Virol J. 8:547., 10.1186/1743-1422X-1188-1547.
1002/2008	JN704697	vac	124,814	Germany	2008	Vaccine lot	N/A	Zell, R., Taudien, S., Pfaff, F., Wutzler, P., Platzer, M., Sauerbrei, A., 2012. Sequencing of 21 varicella-zoster virus genomes reveals two novel genotypes and evidence of recombination. J Virol. 86, 1608-1622. doi: 1610.1128/JVI.06233-06211. Epub 02011 Nov 06230.
1003/2008	JN704698	vac	124,772	Germany	2008	Vesicle fluid	Varicella	
clone Suduvaxl	KU926312	vac	124,767	South Korea	2013	Vaccine lot	N/A	
clone Varilrixl	KU926313	vac	124,825	South Korea	2012	Vaccine lot	N/A	
clone Varivaxl	KU926314	vac	124,816	South Korea	2012	Vaccine lot	N/A	Jeon, J.S., Won, Y.H., Kim, I.K., Ahn, J.H., Shin, O.S., Kim, J.H., Lee, C.H., 2016. Analysis of single nucleotide polymorphism among Varicella-Zoster Virus and identification of vaccine-specific sites. Virology. 496:277-286., 10.1016/j.virol.2016.1006.1017. Epub 2016 Jul 1011.
ZR1	KF558371	vac	125,129	United Kingdom	2006	Skin lesion	Zoster	
VR2	KF558372	vac	125,128	United Kingdom	2006	Skin lesion	Varicella	
VR1	KF558373	vac	125,125	USA	2007	Skin lesion	Varicella	
U14	KF558374	vac	125,128	USA	1997	Skin lesion	Zoster	
K48	KF558375	vac	125,125	USA	1995	Skin lesion	Zoster	
O27	KF558376	vac	125,128	USA	1999	Skin lesion	Varicella	
T61	KF558377	vac	125,125	USA	2001	Skin lesion	Zoster	
T17	KF558378	vac	125,129	USA	2000	Skin lesion	Zoster	
T25	KF558379	vac	125,125	USA	2000	Skin lesion	Zoster	
v76	KF558380	vac	125,128	USA	1988	Skin lesion	Varicella	
A182B	KF558381	vac	125,130	USA	1988	Skin lesion	Varicella	
A185B	KF558382	vac	125,130	USA	1988	Skin lesion	Varicella	
VariVax2008	KF558383	vac	125,125	USA	2008	Skin lesion	N/A	
VariVax2010	KF558384	vac	125,125	United Kingdom	2010	Skin lesion	N/A	
VariVax2012	KF558385	vac	125,125	United Kingdom	2012	Skin lesion	N/A	
VR3	KF558386	vac	125,124	United Kingdom	2006	Skin lesion	Varicella	
R73	KF558387	vac	125,124	USA	Unknown	Skin lesion	Zoster	
VR4	KF558388	vac	125,125	United Kingdom	2010	Skin lesion	Varicella	
L53	KF558389	vac	125,127	USA	1997	Skin lesion	Zoster	
N13	KF558390	vac	125,127	USA	1998	Skin lesion	Varicella	
K11	KF558391	vac	125,130	USA	1997	Skin lesion	Zoster	
VZVs/PasadenaUSA/48.12/Z[2]	KF811485	vac	125,410	USA	2012	Skin lesion	Zoster	Tseng, H.F., Schmid, D.S., Harpaz, R., LaRussa, P., Jensen, N.J., Rivailler, P., Radford, K., Folster, J., Jacobsen, S.J., 2014. Herpes zoster caused by vaccine-strain varicella zoster virus in an immunocompetent recipient of zoster vaccine. Clin Infect Dis. 58, 1125-1128. doi: 1110.1093/cid/ciu1058. Epub 2014 Jan 1126.
B86	KF853225	vac	125,128	United Kingdom	1986	Unknown	N/A	
A171B	KF853226	vac	125,127	United Kingdom	1988	Unknown	Varicella	Weinert, L.A., Depledge, D.P., Kundu, S., Gershon, A.A., Nichols, R.A., Balloux, F., Welch, J.J., Breuer, J., 2015. Rates of vaccine evolution show strong effects of latency: implications for varicella zoster virus epidemiology. Mol Biol Evol. 32, 1020-1028. doi: 1010.1093/molbev/msu1406. Epub 2015 Jan 1026.
Q27	KF853227	vac	125,071	United Kingdom	1998	Unknown	Varicella	
R3	KF853228	vac	125,112	United Kingdom	1999	Unknown	Zoster	
R43	KF853229	vac	125,081	United Kingdom	2000	Unknown	Varicella	
R52	KF853230	vac	125,130	United Kingdom	1999	Unknown	Zoster	
ZR2	KF853231	vac	125,118	United Kingdom	2006	Unknown	Zoster	
ZR3	KF853232	vac	125,072	United Kingdom	2007	Unknown	Zoster	
VR5	KF853233	vac	125,073	United Kingdom	2008	Unknown	Varicella	
ZR4	KF853234	vac	125,048	United Kingdom	2010	Unknown	Zoster	
ZR5	KF853235	vac	125,056	United Kingdom	2013	Unknown	Zoster	
Baïke	MF898328	vac	125,095	China	2015	Vaccine lot	N/A	Wu, Q., Rivailler, P., Xu, S., Xu, W., 2019. Comparison of the Whole-Genome Sequence of an Oka Varicella Vaccine from China with Other Oka Vaccine Strains Reveals Sites Putatively Critical for Vaccine Efficacy. J Virol. 93, e02281-02218. doi: 02210.01128/JVI.02281-02218. Print 02019 May 02281.

Supplementary Table 2: 2880 SNPs identified among 223 VZV genomes

SNP-ID	Chromosome	Position in Genome	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1488	1489	1490	1491	1492	1493	1494	1495	1496	1497	1498	1499	1500	1501	1502	1503	1504	1505	1506	1507	1508	1509	1510	1511	1512	1513	1514	1515	1516	1517	1518	1519	1520	1521	1522	1523	1524	1525	1526	1527	1528	1529	1530	1531	1532	1533	1534	1535	1536	1537	1538	1539	1540	1541	1542	1543	1544	1545	1546	1547	154
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[illegible]

Supplementary Table 2. 2860 SNPs

SNP	Chromosome	Position (kb)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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Supplementary Table 2: 2880 SNPs

18-02	18-03	18-04	18-05	18-06	18-07	18-08	18-09	18-10	18-11	18-12	18-13	18-14	18-15	18-16	18-17	18-18	18-19	18-20	18-21	18-22	18-23	18-24	18-25	18-26	18-27	18-28	18-29	18-30	18-31	18-32	18-33	18-34	18-35	18-36	18-37	18-38	18-39	18-40	18-41	18-42	18-43	18-44	18-45	18-46	18-47	18-48	18-49	18-50	18-51	18-52	18-53	18-54	18-55	18-56	18-57	18-58	18-59	18-60	18-61	18-62	18-63	18-64	18-65	18-66	18-67	18-68	18-69	18-70	18-71	18-72	18-73	18-74	18-75	18-76	18-77	18-78	18-79	18-80	18-81	18-82	18-83	18-84	18-85	18-86	18-87	18-88	18-89	18-90	18-91	18-92	18-93	18-94	18-95	18-96	18-97	18-98	18-99	18-100	18-101	18-102	18-103	18-104	18-105	18-106	18-107	18-108	18-109	18-110	18-111	18-112	18-113	18-114	18-115	18-116	18-117	18-118	18-119	18-120	18-121	18-122	18-123	18-124	18-125	18-126	18-127	18-128	18-129	18-130	18-131	18-132	18-133	18-134	18-135	18-136	18-137	18-138	18-139	18-140	18-141	18-142	18-143	18-144	18-145	18-146	18-147	18-148	18-149	18-150	18-151	18-152	18-153	18-154	18-155	18-156	18-157	18-158	18-159	18-160	18-161	18-162	18-163	18-164	18-165	18-166	18-167	18-168	18-169	18-170	18-171	18-172	18-173	18-174	18-175	18-176	18-177	18-178	18-179	18-180	18-181	18-182	18-183	18-184	18-185	18-186	18-187	18-188	18-189	18-190	18-191	18-192	18-193	18-194	18-195	18-196	18-197	18-198	18-199	18-200	18-201	18-202	18-203	18-204	18-205	18-206	18-207	18-208	18-209	18-210	18-211	18-212	18-213	18-214	18-215	18-216	18-217	18-218	18-219	18-220	18-221	18-222	18-223	18-224	18-225	18-226	18-227	18-228	18-229	18-230	18-231	18-232	18-233	18-234	18-235	18-236	18-237	18-238	18-239	18-240	18-241	18-242	18-243	18-244	18-245	18-246	18-247	18-248	18-249	18-250	18-251	18-252	18-253	18-254	18-255	18-256	18-257	18-258	18-259	18-260	18-261	18-262	18-263	18-264	18-265	18-266	18-267	18-268	18-269	18-270	18-271	18-272	18-273	18-274	18-275	18-276	18-277	18-278	18-279	18-280	18-281	18-282	18-283	18-284	18-285	18-286	18-287	18-288	18-289	18-290	18-291	18-292	18-293	18-294	18-295	18-296	18-297	18-298	18-299	18-300	18-301	18-302	18-303	18-304	18-305	18-306	18-307	18-308	18-309	18-310	18-311	18-312	18-313	18-314	18-315	18-316	18-317	18-318	18-319	18-320	18-321	18-322	18-323	18-324	18-325	18-326	18-327	18-328	18-329	18-330	18-331	18-332	18-333	18-334	18-335	18-336	18-337	18-338	18-339	18-340	18-341	18-342	18-343	18-344	18-345	18-346	18-347	18-348	18-349	18-350	18-351	18-352	18-353	18-354	18-355	18-356	18-357	18-358	18-359	18-360	18-361	18-362	18-363	18-364	18-365	18-366	18-367	18-368	18-369	18-370	18-371	18-372	18-373	18-374	18-375	18-376	18-377	18-378	18-379	18-380	18-381	18-382
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Supplementary Table 2: 2880 SNPs

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Supplementary Table 2: 2880 SNPs

40	Circle numbers Practical in Dumas			32070	32071	32072	32073	32074	32075	32076	32077	32078	32079	32080	32081	32082	32083	32084	32085	32086	32087	32088	32089	32090	32091	32092	32093	32094	32095	32096	32097	32098	32099	32100	32101	32102	32103	32104	32105	32106	32107	32108	32109	32110	32111	32112	32113	32114	32115	32116	32117	32118	32119	32120	32121	32122	32123	32124	32125	32126	32127	32128	32129	32130	32131	32132	32133	32134	32135	32136	32137	32138	32139	32140	32141	32142	32143	32144	32145	32146	32147	32148	32149	32150	32151	32152	32153	32154	32155	32156	32157	32158	32159	32160	32161	32162	32163	32164	32165	32166	32167	32168	32169	32170	32171	32172	32173	32174	32175	32176	32177	32178	32179	32180	32181	32182	32183	32184	32185	32186	32187	32188	32189	32190	32191	32192	32193	32194	32195	32196	32197	32198	32199	32200	32201	32202	32203	32204	32205	32206	32207	32208	32209	32210	32211	32212	32213	32214	32215	32216	32217	32218	32219	32220	32221	32222	32223	32224	32225	32226	32227	32228	32229	32230	32231	32232	32233	32234	32235	32236	32237	32238	32239	32240	32241	32242	32243	32244	32245	32246	32247	32248	32249	32250	32251	32252	32253	32254	32255	32256	32257	32258	32259	32260	32261	32262	32263	32264	32265	32266	32267	32268	32269	32270	32271	32272	32273	32274	32275	32276	32277	32278	32279	32280	32281	32282	32283	32284	32285	32286	32287	32288	32289	32290	32291	32292	32293	32294	32295	32296	32297	32298	32299	32300	32301	32302	32303	32304	32305	32306	32307	32308	32309	32310	32311	32312	32313	32314	32315	32316	32317	32318	32319	32320	32321	32322	32323	32324	32325	32326	32327	32328	32329	32330	32331	32332	32333	32334	32335	32336	32337	32338	32339	32340	32341	32342	32343	32344	32345	32346	32347	32348	32349	32350	32351	32352	32353	32354	32355	32356	32357	32358	32359	32360	32361	32362	32363	32364	32365	32366	32367	32368	32369	32370	32371	32372	32373	32374	32375	32376	32377	32378	32379	32380	32381	32382	32383	32384	32385	32386	32387	32388	32389	32390	32391	32392	32393	32394	32395	32396	32397	32398	32399	32400	32401	32402	32403	32404	32405	32406	32407	32408	32409	32410	32411	32412	32413	32414	32415	32416	32417	32418	32419	32420	32421	32422	32423	32424	32425	32426	32427	32428	32429	32430	32431	32432	32433	32434	32435	32436	32437	32438	32439	32440	32441	32442	32443	32444	32445	32446	32447	32448	32449	32450	32451	32452	32453	32454	32455	32456	32457	32458	32459	32460	32461	32462	32463	32464	32465	32466	32467	32468	32469	32470	32471	32472	32473	32474	32475	32476</
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Supplementary Table 2: 2880 SNPs

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Supplementary Table 2: 2880 SNPs

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Supplementary Table 2: 2880 SNPs

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	Product ID/Name		Date		Status		Category		Region		Sales		Profit		Growth		Market Share		Customer		Feedback		Complaints		Churn		Retention		LTV		CAC		ROI		Net Promoter Score		Customer Satisfaction		Employee		Product		Service		Support		Training		Development		Marketing		Sales		Finance		Operations		HR		Legal		Compliance		Risk		Security		IT		Facilities		Procurement		Supply Chain		Logistics		Manufacturing		Quality Control		Packaging		Distribution		Retail		Wholesale		Export		Import		Inventory		Warehouse		Transportation		Customs		Taxes		Regulatory		Environmental		Social		Environmental		Governance		Ethics		Sustainability		ESG		Stakeholder		Investor		Analyst		Rating		Score		Index		Benchmark		Target		Actual		Variance		Trend		Forecast		Risk		Mitigation		Contingency		Disaster		Recovery		Resilience		Adaptability		Innovation		R&D		Patent		Trademark		Copyright		Trade Secret		Know-How		Talent		Culture		Values		Mission		Vision		Strategy		Business Model		Competitor		Market Position		Competitive Advantage		Differentiation		Value Proposition		Customer Segments		Channels		Partners		Ecosystem		Platform		API		Data		Analytics		Reporting		Dashboard		Tools		Software		Hardware		Infrastructure		Network		Cloud		Security		Compliance		Audit		Certification		Accreditation		Standards		Best Practices		Lessons Learned		Continuous Improvement		Change Management		Communication		Collaboration		Influence		Reputation		Brand		Image		Voice		Visual		Tone		Style		Language		Grammar		Spelling		Punctuation		Formatting		Layout		Design		User Experience		Usability		Accessibility		Performance		Reliability		Availability		Scalability		Flexibility		Interoperability		Compatibility		Integration		Migration		Upgrade		Maintenance		Support		Training		Development		Marketing		Sales		Finance		Operations		HR		Legal		Compliance		Risk		Security		IT		Facilities		Procurement		Supply Chain		Logistics		Manufacturing		Quality Control		Packaging		Distribution		Retail		Wholesale		Export		Import		Inventory		Warehouse		Transportation		Customs		Taxes		Regulatory		Environmental		Social		Environmental		Governance		Ethics		Sustainability		ESG		Stakeholder		Investor		Analyst		Rating		Score		Index		Benchmark		Target		Actual		Variance		Trend		Forecast		Risk		Mitigation		Contingency		Disaster		Recovery		Resilience		Adaptability		Innovation		R&D		Patent		Trademark		Copyright		Trade Secret		Know-How		Talent		Culture		Values		Mission		Vision		Strategy		Business Model		Competitor		Market Position		Competitive Advantage		Differentiation		Value Proposition		Customer Segments		Channels		Partners		Ecosystem		Platform		API		Data		Analytics		Reporting		Dashboard		Tools		Software		Hardware		Infrastructure		Network		Cloud		Security		Compliance		Audit		Certification		Accreditation		Standards		Best Practices		Lessons Learned		Continuous Improvement		Change Management		Communication		Collaboration		Influence		Reputation		Brand		Image		Voice		Visual		Tone		Style		Language		Grammar		Spelling		Punctuation		Formatting		Layout		Design		User Experience		Usability		Accessibility		Performance		Reliability		Availability		Scalability		Flexibility		Interoperability		Compatibility		Integration		Migration		Upgrade		Maintenance		Support		Training		Development		Marketing		Sales		Finance		Operations		HR		Legal		Compliance		Risk		Security		IT		Facilities		Procurement		Supply Chain		Logistics		Manufacturing		Quality Control		Packaging		Distribution		Retail		Wholesale		Export		Import		Inventory		Warehouse		Transportation		Customs		Taxes		Regulatory		Environmental		Social		Environmental		Governance		Ethics		Sustainability		ESG		Stakeholder		Investor		Analyst		Rating		Score		Index		Benchmark		Target		Actual		Variance		Trend		Forecast		Risk		Mitigation		Contingency		Disaster		Recovery		Resilience		Adaptability		Innovation		R&D		Patent		Trademark		Copyright		Trade Secret		Know-How		Talent		Culture		Values		Mission		Vision		Strategy		Business Model		Competitor		Market Position		Competitive Advantage		Differentiation		Value Proposition		Customer Segments		Channels		Partners		Ecosystem		Platform		API		Data		Analytics		Reporting		Dashboard		Tools		Software		Hardware		Infrastructure		Network		Cloud		Security		Compliance		Audit		Certification		Accreditation		Standards		Best Practices		Lessons Learned		Continuous Improvement		Change Management		Communication		Collaboration		Influence		Reputation		Brand		Image		Voice		Visual		Tone		Style		Language		Grammar		Spelling		Punctuation		Formatting		Layout		Design		User Experience		Usability		Accessibility		Performance		Reliability		Availability		Scalability		Flexibility		Interoperability		Compatibility		Integration		Migration		Upgrade		Maintenance		Support		Training		Development		Marketing		Sales		Finance	
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Supplementary Table 2. 2860 SNPs

SNP ID	Chromosome	Position 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Supplementary Table 2: 2880 SNPs

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Supplementary Table 2: 2880 SNPs

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Supplementary Table 2: 2880 SNPs

AS ID	AS Name	Country	ASN	IP Range	AS Size	AS Type	AS Status	AS Contact	AS Website	AS Description	AS Notes
AS1601	AS1601	US	1601	192.168.1.1	1	AS	Active	AS1601	AS1601	AS1601	AS1601
AS1602	AS1602	US	1602	192.168.1.2	1	AS	Active	AS1602	AS1602	AS1602	AS1602
AS1603	AS1603	US	1603	192.168.1.3	1	AS	Active	AS1603	AS1603	AS1603	AS1603
AS1604	AS1604	US	1604	192.168.1.4	1	AS	Active	AS1604	AS1604	AS1604	AS1604
AS1605	AS1605	US	1605	192.168.1.5	1	AS	Active	AS1605	AS1605	AS1605	AS1605
AS1606	AS1606	US	1606	192.168.1.6	1	AS	Active	AS1606	AS1606	AS1606	AS1606
AS1607	AS1607	US	1607	192.168.1.7	1	AS	Active	AS1607	AS1607	AS1607	AS1607
AS1608	AS1608	US	1608	192.168.1.8	1	AS	Active	AS1608	AS1608	AS1608	AS1608
AS1609	AS1609	US	1609	192.168.1.9	1	AS	Active	AS1609	AS1609	AS1609	AS1609
AS1610	AS1610	US	1610	192.168.1.10	1	AS	Active	AS1610	AS1610	AS1610	AS1610
AS1611	AS1611	US	1611	192.168.1.11	1	AS	Active	AS1611	AS1611	AS1611	AS1611
AS1612	AS1612	US	1612	192.168.1.12	1	AS	Active	AS1612	AS1612	AS1612	AS1612
AS1613	AS1613	US	1613	192.168.1.13	1	AS	Active	AS1613	AS1613	AS1613	AS1613
AS1614	AS1614	US	1614	192.168.1.14	1	AS	Active	AS1614	AS1614	AS1614	AS1614
AS1615	AS1615	US	1615	192.168.1.15	1	AS	Active	AS1615	AS1615	AS1615	AS1615
AS1616	AS1616	US	1616	192.168.1.16	1	AS	Active	AS1616	AS1616	AS1616	AS1616
AS1617	AS1617	US	1617	192.168.1.17	1	AS	Active	AS1617	AS1617	AS1617	AS1617
AS1618	AS1618	US	1618	192.168.1.18	1	AS	Active	AS1618	AS1618	AS1618	AS1618
AS1619	AS1619	US	1619	192.168.1.19	1	AS	Active	AS1619	AS1619	AS1619	AS1619
AS1620	AS1620	US	1620	192.168.1.20	1	AS	Active	AS1620	AS1620	AS1620	AS1620
AS1621	AS1621	US	1621	192.168.1.21	1	AS	Active	AS1621	AS1621	AS1621	AS1621
AS1622	AS1622	US	1622	192.168.1.22	1	AS	Active	AS1622	AS1622	AS1622	AS1622
AS1623	AS1623	US	1623	192.168.1.23	1	AS	Active	AS1623	AS1623	AS1623	AS1623
AS1624	AS1624	US	1624	192.168.1.24	1	AS	Active	AS1624	AS1624	AS1624	AS1624
AS1625	AS1625	US	1625	192.168.1.25	1	AS	Active	AS1625	AS1625	AS1625	AS1625
AS1626	AS1626	US	1626	192.168.1.26	1	AS	Active	AS1626	AS1626	AS1626	AS1626
AS1627	AS1627	US	1627	192.168.1.27	1	AS	Active	AS1627	AS1627	AS1627	AS1627
AS1628	AS1628	US	1628	192.168.1.28	1	AS	Active	AS1628	AS1628	AS1628	AS1628
AS1629	AS1629	US	1629	192.168.1.29	1	AS	Active	AS1629	AS1629	AS1629	AS1629
AS1630	AS1630	US	1630	192.168.1.30	1	AS	Active	AS1630	AS1630	AS1630	AS1630
AS1631	AS1631	US	1631	192.168.1.31	1	AS	Active	AS1631	AS1631	AS1631	AS1631
AS1632	AS1632	US	1632	192.168.1.32	1	AS	Active	AS1632	AS1632	AS1632	AS1632
AS1633	AS1633	US	1633	192.168.1.33	1	AS	Active	AS1633	AS1633	AS1633	AS1633
AS1634	AS1634	US	1634	192.168.1.34	1	AS	Active	AS1634	AS1634	AS1634	AS1634
AS1635	AS1635	US	1635	192.168.1.35	1	AS	Active	AS1635	AS1635	AS1635	AS1635
AS1636	AS1636	US	1636	192.168.1.36	1	AS	Active	AS1636	AS1636	AS1636	AS1636
AS1637	AS1637	US	1637	192.168.1.37	1	AS	Active	AS1637	AS1637	AS1637	AS1637
AS1638	AS1638	US	1638	192.168.1.38	1	AS	Active	AS1638	AS1638	AS1638	AS1638
AS1639	AS1639	US	1639	192.168.1.39	1	AS	Active	AS1639	AS1639	AS1639	AS1639
AS1640	AS1640	US	1640	192.168.1.40	1	AS	Active	AS1640	AS1640	AS1640	AS1640
AS1641	AS1641	US	1641	192.168.1.41	1	AS	Active	AS1641	AS1641	AS1641	AS1641
AS1642	AS1642	US	1642	192.168.1.42	1	AS	Active	AS1642	AS1642	AS1642	AS1642
AS1643	AS1643	US	1643	192.168.1.43	1	AS	Active	AS1643	AS1643	AS1643	AS1643
AS1644	AS1644	US	1644	192.168.1.44	1	AS	Active	AS1644	AS1644	AS1644	AS1644
AS1645	AS1645	US	1645	192.168.1.45	1	AS	Active	AS1645	AS1645	AS1645	AS1645
AS1646	AS1646	US	1646	192.168.1.46	1	AS	Active	AS1646	AS1646	AS1646	AS1646
AS1647	AS1647	US	1647	192.168.1.47	1	AS	Active	AS1647	AS1647	AS1647	AS1647
AS1648	AS1648	US	1648	192.168.1.48	1	AS	Active	AS1648	AS1648	AS1648	AS1648
AS1649	AS1649	US	1649	192.168.1.49	1	AS	Active	AS1649	AS1649	AS1649	AS1649
AS1650	AS1650	US	1650	192.168.1.50	1	AS	Active	AS1650	AS1650	AS1650	AS1650
AS1651	AS1651	US	1651	192.168.1.51	1	AS	Active	AS1651	AS1651	AS1651	AS1651
AS1652	AS1652	US	1652	192.168.1.52	1	AS	Active	AS1652	AS1652	AS1652	AS1652
AS1653	AS1653	US	1653	192.168.1.53	1	AS	Active	AS1653	AS1653	AS1653	AS1653
AS1654	AS1654	US	1654	192.168.1.54	1	AS	Active	AS1654	AS1654	AS1654	AS1654
AS1655	AS1655	US	1655	192.168.1.55	1	AS	Active	AS1655	AS1655	AS1655	AS1655
AS1656	AS1656	US	1656	192.168.1.56	1	AS	Active	AS1656	AS1656	AS1656	AS1656
AS1657	AS1657	US	1657	192.168.1.57	1	AS	Active	AS1657	AS1657	AS1657	AS1657
AS1658	AS1658	US	1658	192.168.1.58	1	AS	Active	AS1658	AS1658	AS1658	AS1658
AS1659	AS1659	US	1659	192.168.1.59	1	AS	Active	AS1659	AS1659	AS1659	AS1659
AS1660	AS1660	US	1660	192.168.1.60	1	AS	Active	AS1660	AS1660	AS1660	AS1660
AS1661	AS1661	US	1661	192.168.1.61	1	AS	Active	AS1661	AS1661	AS1661	AS1661
AS1662	AS1662	US	1662	192.168.1.62	1	AS	Active	AS1662	AS1662	AS1662	AS1662
AS1663	AS1663	US	1663	192.168.1.63	1	AS	Active	AS1663	AS1663	AS1663	AS1663
AS1664	AS1664	US	1664	192.168.1.64	1	AS	Active	AS1664	AS1664	AS1664	AS1664
AS1665	AS1665	US	1665	192.168.1.65	1	AS	Active	AS1665	AS1665	AS1665	AS1665
AS1666	AS1666	US	1666	192.168.1.66	1	AS	Active	AS1666	AS1666	AS1666	AS1666
AS1667	AS1667	US	1667	192.168.1.67	1	AS	Active	AS1667	AS1667	AS1667	AS1667
AS1668	AS1668	US	1668	192.168.1.68	1	AS	Active	AS1668	AS1668	AS1668	AS1668
AS1669	AS1669	US	1669	192.168.1.69	1	AS	Active	AS1669	AS1669	AS1669	AS1669
AS1670	AS1670	US	1670	192.168.1.70	1	AS	Active	AS1670	AS1670	AS1670	AS1670
AS1671	AS1671	US	1671	192.168.1.71	1	AS	Active	AS1671	AS1671	AS1671	AS1671
AS1672	AS1672	US	1672	192.168.1.72	1	AS	Active	AS1672	AS1672	AS1672	AS1672
AS1673	AS1673	US	1673	192.168.1.73	1	AS	Active	AS1673	AS1673	AS1673	AS1673
AS1674	AS1674	US	1674	192.168.1.74	1	AS	Active	AS1674	AS1674	AS1674	AS1674
AS1675	AS1675	US	1675	192.168.1.75	1	AS	Active	AS1675	AS1675	AS1675	AS1675
AS1676	AS1676	US	1676	192.168.1.76	1	AS	Active	AS1676	AS1676	AS1676	AS1676
AS1677	AS1677	US	1677	192.168.1.77	1	AS	Active	AS1677	AS1677	AS1677	AS1677
AS1678	AS1678	US	1678	192.168.1.78	1	AS	Active	AS1678	AS1678	AS1678	AS1678
AS1679	AS1679	US	1679	192.168.1.79	1	AS	Active	AS1679	AS1679	AS1679	AS1679
AS1680	AS1680	US	1680	192.168.1.80	1	AS	Active	AS1680	AS1680	AS1680	AS1680
AS1681	AS1681	US	1681	192.168.1.81	1	AS	Active	AS1681	AS1681	AS1681	AS1681
AS1682	AS1682	US	1682	192.168.1.82	1	AS	Active	AS1682	AS1682	AS1682	AS1682
AS1683	AS1683	US	1683	192.168.1.83	1	AS	Active	AS1683	AS1683	AS1683	AS1683
AS1684	AS1684	US	1684	192.168.1.84	1	AS	Active	AS1684	AS1684	AS1684	AS1684
AS1685	AS1685	US	1685	192.168.1.85	1	AS	Active	AS1685	AS1685	AS1685	AS1685
AS1686	AS1686	US	1686	192.168.1.86	1	AS	Active	AS1686	AS1686	AS1686	AS1686
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AS1688	AS1688	US	1688	192.168.1.88	1	AS	Active	AS1688	AS1688	AS1688	AS1688
AS1689	AS1689	US	1689	192.168.1.89	1	AS	Active	AS1689	AS1689	AS1689	AS1689
AS1690	AS1690	US	1690	192.168.1.90	1	AS	Active	AS1690	AS1690	AS1690	AS1690
AS1691	AS1691	US	1691	192.168.1.91	1	AS	Active	AS1691	AS1691	AS1691	AS1691
AS1692	AS1692	US	1692	192.168.1.92	1	AS	Active	AS1692	AS1692	AS1692	AS1692
AS1693	AS1693	US	1693	192.168.1.93	1	AS	Active	AS1693	AS1693	AS1693	AS1693
AS1694	AS1694	US	1694	192.168.1.94	1	AS	Active	AS1694	AS1694	AS1694	AS1694
AS1695	AS1695	US	1695	192.168.1.95	1	AS	Active	AS1695	AS1695	AS1695	AS1695
AS1696	AS1696	US	1696	192.168.1.96	1	AS	Active	AS1696	AS1696	AS1696	AS1696
AS1697	AS1697	US	1697	192.168.1.97	1	AS	Active	AS1697	AS1697	AS1697	AS1697
AS1698	AS1698	US	1698	192.168.1.98	1	AS	Active	AS1698	AS1698	AS1698	AS1698
AS1699	AS1699	US	1699	192.168.1.99	1	AS	Active	AS1699	AS1699	AS1699	AS1699
AS1700	AS1700	US	1700	192.168.2.0	1	AS	Active	AS1700	AS1700	AS1700	AS1700
AS1701	AS1701	US	1701	192.168.2.1	1	AS	Active	AS1701	AS1701	AS1701	AS1701
AS1702	AS1702	US	1702	192.168.2.2	1	AS	Active	AS1702	AS1702	AS1702	AS1702
AS1703	AS1703	US	1703	192.168.2.3	1	AS	Active	AS1703	AS1703	AS1703	AS1703
AS1704	AS1704	US	1704	192.168.2.4	1	AS	Active	AS1704	AS1704	AS1704	AS1704
AS1705	AS1705	US	1705	192.168.2.5	1	AS	Active	AS1705	AS1705	AS1705	AS1705
AS1706	AS1706	US	1706	192.168.2.6	1	AS	Active	AS1706	AS1706	AS1706	AS1706
AS1707	AS1707	US	1707	192.168.2.7	1	AS	Active	AS1707	AS1707	AS1707	AS1707
AS1708	AS1708	US	1708	192.168.2.8	1	AS	Active	AS1708	AS1708	AS1708	AS1708

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