

Supplementary tables and figures

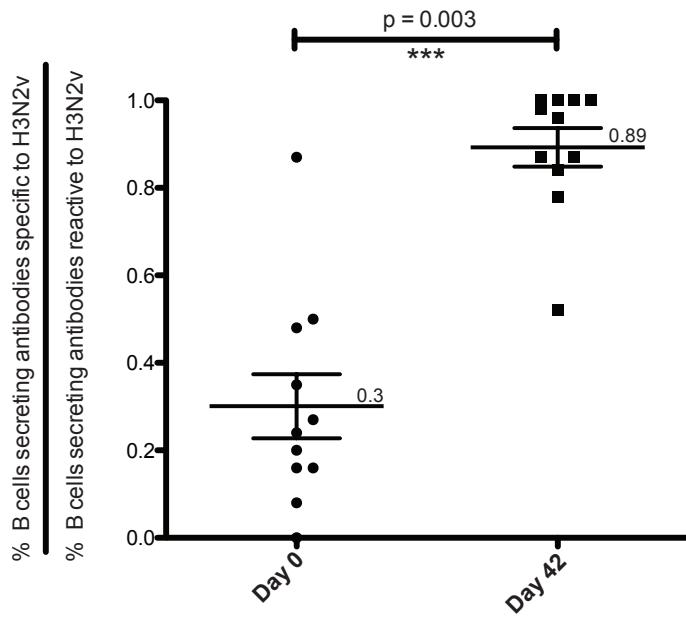


Figure S1. Frequency of influenza A H3N2v HA-specific B cells from 11 vaccinated donors.

PBMCs from day 0 or day 42 post-vaccination were transformed with EBV in 384-well plates and supernatants were screened by ELISA for the presence of antibodies to H3N2v A/Minnesota/11/2010 HA or HAs from two seasonal strains: A/Victoria/361/2011 or A/Wisconsin/67/2005. The graph represents data from 11 donors, showing the ratio of B cells secreting antibodies specific to H3N2v HA that did not cross-react with HA from seasonal strains to the total B cells secreting antibody reactive to H3N2v. The percentage of H3N2v specific or reactive B cells were calculated by the number of wells with ODs greater than 2 times standard deviation above background divided by total number of transformed B cells $\times 100$. The error bars represent standard error of means and the p value was calculated by Wilcoxon test

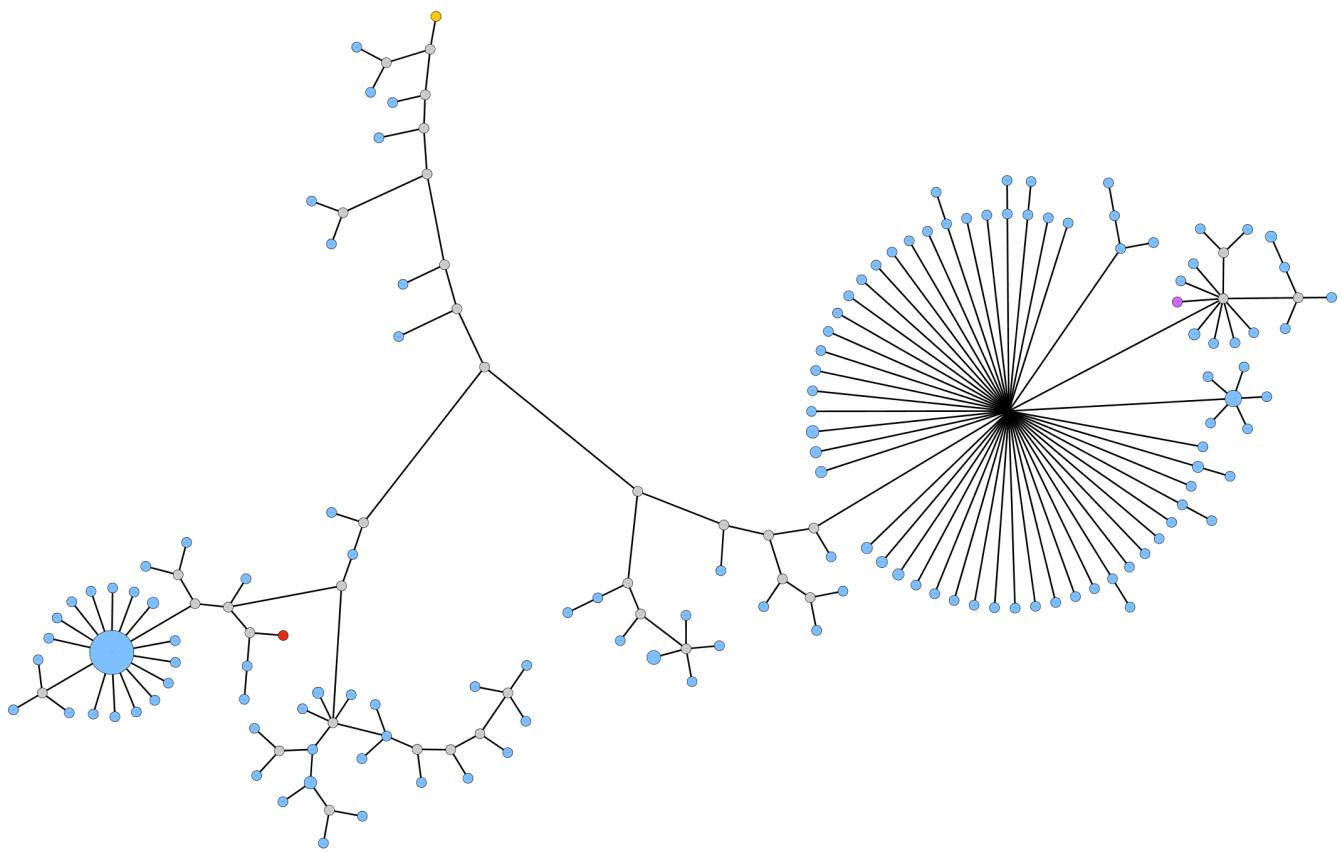


Figure S2. Lineage network analysis for variants of H3v reactive human monoclonal antibody H3v-104 obtained from the same donor. First, antibody heavy chain variable gene sequences were obtained from PBMCs collected on day 0, 7, or 42 after immunization, and those sharing use of the V_H1-69 and J_H4 gene segments that encode H3v-104 were identified. Then, CD-HIT was used to identify the HCDR3 sequences of 296 sequences that clustered within 85% identity with the HCDR3 sequence of H3v-104. We built a Phylophil lineage using the alakazam and shazam packages of the Change-O software suite, and visualized the network in Cytoscape.

In the network shown, the gold node at the top of the figure represents the inferred germline sequence. Gray nodes are inferred intermediate sequences. The violet node (toward the right) represents a sequence observed via sequencing B cells from this donor at day 0 (the day of immunization). The blue nodes represent sequences observed via sequencing B cells from day 7 after immunization. The red node represents the mAb H3-v104 obtained by B cell transformation and hybridoma formation on day 42 after immunization. The size of a node represents the count of sequences observed in the data set.

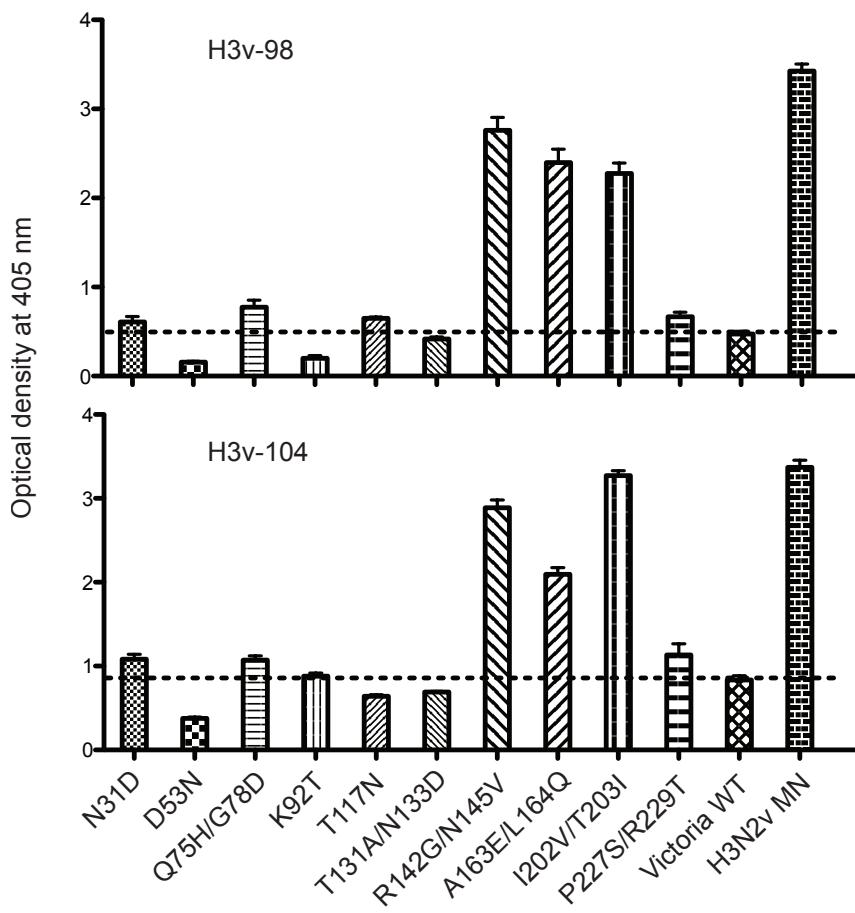


Figure S3. Binding of H3v-specific mAbs to Victoria wild-type and HA mutants

17 variant-specific polymorphisms were introduced into Victoria HA as single or double mutants. The graph shows binding optical densities (O.D.s) measured by ELISA for mAbs H3v-98 and H3v-104 with the Victoria HA mutants at antibody concentration of 10 µg/mL. Three double-mutant HA molecules, Victoria I202V/T203I, A163E/L164Q or R142G/N144V, enhanced binding to mAbs H3v-98 and H3v-104 that otherwise did not bind to the wild-type Victoria HA. The dotted line represents the baseline level of binding to wild-type Victoria HA.

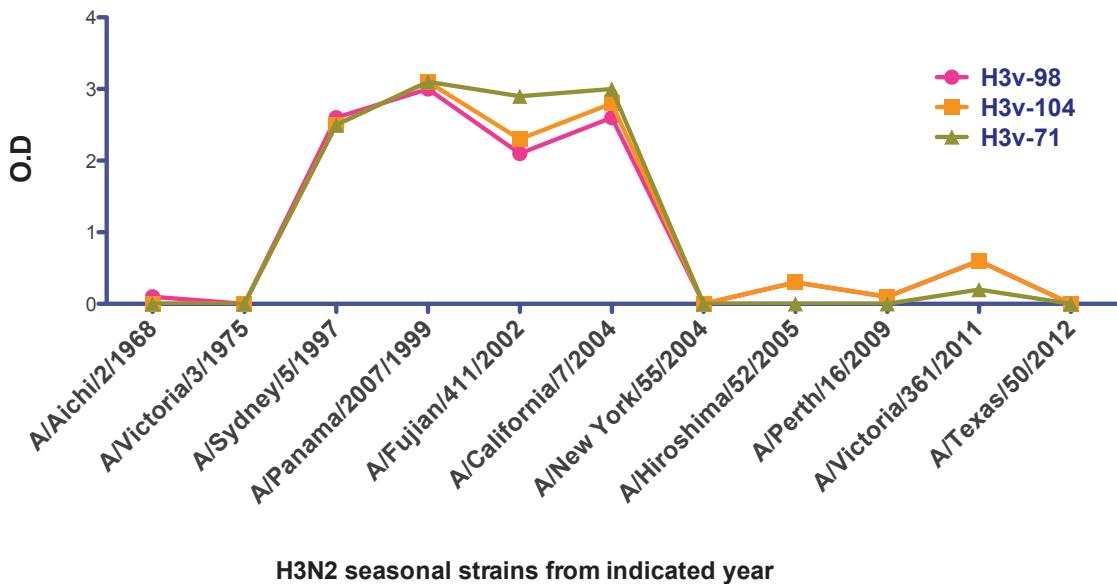


Figure S4. Binding to HA from H3N2 seasonal strains. The mAbs were tested for binding against HAs derived from 10 seasonal strains that circulated between 1968 to 2012 by ELISA at a single concentration of the antibody (0.3 µg/mL). The O.D. values for H3v-98 (pink), H3v-104 (orange) or H3v-71 (green) are indicated on the y-axis and the HA from H3N2 strains used for binding are indicated on the x-axis.

Table S1. Neutralization titers for four H3v-reactive human mAbs against swine IAVs

Monoclonal antibody	Lowest concentration of the mAb that can neutralize the virus ($\mu\text{g/mL}$)			
	Cluster I A/Swine/Texas/ 4199-2/98	Cluster II A/Swine/Colorado/ 23619/99	Cluster III A/Swine/Oklahoma/ 18089/99	Cluster IV A/Ohio/13/2012
H3v-71	>	0.12	>	0.12
H3v-98	>	0.31	0.16	0.16
H3v-104	>	0.08	0.03	0.01
H3v-45	>	0.63	10.0	1.25

Table S1. Neutralization titers for four H3v-reactive human mAbs against swine IAVs.

H3v mAbs were tested for neutralizing activity against four H3N2 strains representing each antigenic cluster circulating in swine, A/Swine/Texas/4199-2/98 (cluster I), A/Swine/Colorado/23619/99 (cluster II), A/Swine/Oklahoma/18089/99 (cluster III) and A/Ohio/13/2012 (cluster IV). The table shows the lowest concentration of the antibody ($\mu\text{g/mL}$) that exhibited neutralizing activity against each strain. The > symbol indicates neutralization was not detected at the maximum concentration tested (10 $\mu\text{g/mL}$).

Table S2. Binding breadth for five H3v-reactive antibodies

Subtype	HA from IAV strains	Optical density at 405 nm for indicated mAb				
		H3v-98	104	71	126	81
H3N2v	A/Minnesota/11/2010	2.29	2.43	2.20	2.21	2.12
H1N1	A/Solomon islands/03/2006	0.10	0.09	0.09	0.10	0.10
H1N1	A/Texas/36/1991	0.10	0.10	0.11	0.09	0.10
H2N2	A/Japan/305/1957	0.10	0.10	0.09	0.10	0.10
H4N6	A/duck/Czechoslovakia/1956	0.12	0.10	0.10	0.12	0.11
H5N1	A/Vietnam/1203/2004	0.12	0.11	0.09	0.11	0.09
H6N1	A/teal/Hong Kong/W312/1997	0.13	0.11	0.09	0.11	0.10
H7N7	A/Netherlands/219/2003	0.10	0.09	0.09	0.10	0.10
H7N2	A/New York/107/2003	0.09	0.10	0.09	0.09	0.09
H7N9	A/Shanghai/2/3013	0.10	0.11	0.09	0.10	0.10
H9N2	A/chicken/HongKong/G9/1997	0.12	0.10	0.09	0.10	0.12
H9N2	A/Hong Kong/1073/1999	0.15	0.09	0.12	0.09	0.09
H10N7	A/chicken/Germany/N/1949	0.22	0.22	0.14	0.17	0.14
H13N6	A/gull/Maryland/704/1977	0.11	0.10	0.10	0.11	0.10
H14N5	A/mallard duck/Astrakhan/263/1982	0.15	0.16	0.12	0.11	0.11
H15N8	A/shearwater/Western Australia/2576/1979	0.15	0.12	0.09	0.11	0.10
H16N3	A/black-headed gull/Sweden/4/1999	0.12	0.12	0.09	0.10	0.10

Table S2. Binding of H3v-specific mAbs to HA from other subtypes. Five H3v-specific mAbs were tested for binding against HAs derived from strains belonging to 12 other IAV subtypes by ELISA at a single concentration of the antibody (1 µg/mL). The mAbs did not show significant binding to HA molecules from other HA subtypes.

Table S3. Next generation sequence analysis identification of additional members of clonal lineages based on the antibody gene sequences for representative mAbs.

Count of related sequences by time point

Hybridoma	Day 0	Day 7	Day 21	Day 28	Day 42	Total
Donor 41 H3v-104	1	295	0	0	0	296
Donor 10 H3v-47	0	0	0	0	0	0
Donor 27 H3v-126	0	0	0	0	0	0
Donor 37 H3v-71	0	0	0	0	0	0
Donor 37 H3v-98	0	0	0	0	0	0
Donor 37 H3v-81	1	18,928	1	0	0	18930

Out of indicated number of V/J gene segment matches

Hybridoma	Day 0	Day 7	Day 21	Day 28	Day 42	Total
Donor 41 H3v-104	5,775	30,679	7,114	11,757	8,042	63367
Donor 10 H3v-47	695	6,637	3,619	4,672	1,059	16682
Donor 27 H3v-126	21,332	17,197	19,506	25,674	45,999	129708
Donor 37 H3v-71	1,965	1,379	3,545	2,002	2,413	11304
Donor 37 H3v-98	2,617	686	4,663	3,226	3,844	15036
Donor 37 H3v-81	129	28,047	50	65	141	28432

Related sequences as percent of V/J recombination event, by time point

Hybridoma	Day 0	Day 7	Day 21	Day 28	Day 42
Donor 41 H3v-104	0.02%	0.96%	0%	0%	0%
Donor 10 H3v-47	0%	0%	0%	0%	0%
Donor 27 H3v-126	0%	0%	0%	0%	0%
Donor 37 H3v-71	0%	0%	0%	0%	0%
Donor 37 H3v-98	0%	0%	0%	0%	0%
Donor 37 H3v-81	0.78%	67.49%	2.00%	0%	0%

Table S4. Amino acid sequence alignment for members of the H3v-104 clonal lineage

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13124-13204_9680_7 - SVKVSKAKASGGTFRTYAIISWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVTITEDS 59
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13124-7560_16450_7 ASVKVSKAKASGGTFRTYAIISWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVTITEDS 60
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 13124-2687_15585_7 ASVKVSKASGGTFS_SY_AI_WWVRQAPGQGLEWMGGI_IPI_IIFTGTAANYAQRK_FQDR_VT_TADDS 60
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 13124-4022_12442_7 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVT_TTEDES 60
 13124-3434_17111_7 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMSTFGSAHYAQRFQGRVT_TTEDES 60
 13124-5155_16928_7 ASVKVSKASGDTFR_TY_AINWVRQAPGQGLEWMGGIMSTFGPPSYAQRFQGRVT_TADDS 60
 13124-9502_14439_7 ASVKVSKASGYSFTSYAMH_WWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVT_TTEDES 60
 13124-4887_19093_7 ASVKVSKASGGTLTT_TY_AINWVRQAPGQGLEWMGGIFSTFGAANYAQRK_FQDR_VT_MADDS 60
 13124-7862_18760_7 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVT_TTEDES 60
 13124-9420_11732_7 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVT_TTEDEP 60
 13124-5327_11154_7 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVT_TTEDES 60
 13124-7222_19833_7 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVT_TTEDES 60
 13124-6620_22193_7 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVT_TTEDES 60
 13124-7778_16183_7 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVT_TTEDES 60
 13124-8010_16995_7 ASVKVSKASGGTLPT_TYAVN_NWVRQAPGQGLEWMGGIFSTFGSANYAQRK_FQGR_LT_TEDDS 60
 13124-10630_5219_7 ASVKVSKASGGTLPT_TYAVN_NWVRQAPGQGLEWMGGIFSTFGSANYAQRK_FQGR_LT_TEDDS 60
 13124-4923_16041_7 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMSTFGSA_SSYAQRFQGRVT_TTEDES 60
 13124-9997_20587_7 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMP_TFGSANYAQRFQGRVT_TTEDES 60
 13124-7237_18302_7 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVT_TTEDES 60
 13124-3515_14854_7 ASVKVSKASGGTLPT_TYAVN_NWVRQAPGQGLEWMGGIFSTFGSANYAQRK_FQGR_LT_TEDDS 60
 13136-9104_15300_6 ASVKVSKASGGTFR_TY_AISWVRQAPGQGLEWMGGIMSTFGSANYAQRFQGRVT_TTEDES 60

H104	T _D TAYMELSSLRSEDTAL _L YYCARDYYRGEFSGYDFESWGQGT _L TVSS	107
13124-13108_5443_7	TNTAYMELSSLRSEDTAVYYC _Y CARDYYRGEFSGYDFESWGQGT _L TVSS	108
13124-17064_7911_7	TNTAYMELSSLRSEDTAVYYC _H YSGE _S GEFSGYDFESWGQGT _L TVSS	108
13124-17408_2631_7	TNTAYMELSSLRSEDTAVYYC _Y CARDYYRGEFSGYDFESWGQGT _L TVSS	108
13124-_8638_3852_7	TNTAYMELSSLRSEDTAVYYC _Y CARDYYRGEFSGYDFESWGQGT _L TVSS	108
13124-13096_5429_7	TNTAYMELSSLRSEDTAVYYC _Y CARDYYRGEFSGYDFESWGQGT _L TVSS	108
13124-11655_2473_7	TNTAYMELSSLRSEDTAVYYC _Y CARDYYRGEFSGYDFESWGQGT _L TVSS	108
13124-_6426_6714_7	T _S TAFMVLSSLRSEDTAVYYC _Y CARDYYRGEFSGY _E FD _S WG _P GT _L TVVS-	107
13124-3939_25072_7	TNTAYMELSSLRSEDTAVYYC _Y CARDYYRGEFSGYDFESWGQGT _L TVSS	108
13124-4626_10993_7	T _S TAYMELSSLRSEDTAVYYC _Y CARDYYRG _G CGFSGYDFESWGQGT _L TVSS	108
13124-11567_8443_7	TNTAYMELSSLRSEDTAVYYC _Y CARDYYRGEFSGYDFESWGQGT _L TVSS	108
13124-8121_12403_7	T _S TAYMELSSLRSEDTAVYYC _G RDYYRGEFSGYDFESWGQGT _L TVSS	108
13124-7044_12701_7	TNTAYMELSSLRSEDTAVYYC _Y CARDYYRGEFSGYDFESWGQGT _L TVSS	108
13124-8117_15788_7	TNTAYMELSSLRSEDTAVYYC _Y CARDYYRGEFSGYDFESWGQGT _L TVSS	108

13124-7893_13223_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108	
13124-3158_15786_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108	
13124-8815_14788_7	TNTAYMELSSLRSEDTAVYYCARDYYC�IDHYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-2327_12778_7	TNTAYMELSSLRSEDTAVYYC�IDHYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-8105_15803_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-7443_18179_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-9311_18403_7	TNTAYMELSSLRSEDTAVYYCARDYYGGEFSGYDFE	SWGQGT	LTVVSS	108
13124-6719_23710_7	TSTA[FMVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGT	LTVVSS	108
13124-5057_16929_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-0447_20106_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-9291_18407_7	TNTAYMELSSLRSEDTAVYYCARDYYGGEFSGYDFE	SWGQGT	LTVVSS	108
13124-6421_16382_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-0445_20088_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-9924_23840_7	TSTA[FMVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGT	LTVVSS	108
13124-9837_20019_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	107
13124-6959_21421_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-8236_14734_7	TNTAYMELSSLRSEDTAVYYRARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-5203_15739_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-7225_16134_7	TNTAYMELSSLRSEDTAVYYCARDYYRGESSGYDFE	SWGQGT	LTVVSS	108
13124-9918_17841_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-9933_23859_7	TSTA[FMVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGT	LTVVSS	108
13124-8423_17888_7	TNTAYMEVSSLRSEDTAVYYCARYYSGEFGSDYDFE	SWGQGT	LTVVSS	108
13124-9137_20546_7	TNTAYMELSSLRSEDTAVYYCARGHYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-1218_13822_7	TNTAYMELSSLRSEDTAVYYCARDHYGGEFSGYDFE	SWGQGT	LTVVSS	108
13124-10130_6428_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-_9768_5122_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-3967_14662_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	107
13124-8620_19010_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-_9198_5704_7	TSTA[YMELSSLRSEDTAVYFCARSHYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-9035_16848_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-7851_16910_7	TTTAYMELSSLTSEDATAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-1678_14520_7	TSTA[YMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-7932_14529_7	TSTA[FMVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGT	LTVVSS	108
13124-5731_18956_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-6528_22981_7	TNTAYMELSSLRSEDTAVYYCAGDYYRGEFSGYDFE	SWGQGT	LTVVSS	107
13124-0763_10527_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-11498_8306_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-7548_19327_7	TNTAYMELSSLRSEDTAVYYCARGHYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-_4874_5395_7	TDTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-_3863_8170_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-_8455_3398_7	TSTA[FMVLSSLRPEDATAVYYCARDYYRGEFSGYEFD	SWGPGT	LTVVSS	107
13124-14332_7138_7	T[TAYMELSSLRSEDTAVYYCARDYYRGEFSDYAFES	RQGT	LTVVSS	108
13124-_5940_8378_7	TNTAYMELSSLRSEDTAVYYCAGDHYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-3596_10667_7	TNTDYLEVSSLTSEDATIYYCTRDDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-9089_22037_7	TSTA[FMVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGT	LTVVSS	108
13124-_9831_5195_7	TNTAYLELSSLRSEDTAVYYCAKDHYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-_8481_5588_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-13321_7194_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	SWGQGT	LTVVSS	108
13124-_8284_4310_7	T[TAYMELSSLRSEDTAVYYCARDYYRGEFSDYAFES	WGQGT	LTVVSS	108
13124-_2879_7680_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-_5918_7566_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-11929_6964_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-6794_21865_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-_7250_8668_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-5023_22438_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-3815_10934_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-7991_18770_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-3867_22831_7	TSTA[YMELSSLRSEDTAIYYCARDYYRGEFSDFD	FESWGQGT	LTVVSS	108
13124-9677_18815_7	TNTAYMELSSLRSEDTAVYYCARDNRYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-11897_8962_7	T[TAYMELSSLRSEDTAVYYCARDYYRGEFSDYAFES	RQGT	LTVVSS	108
13124-4170_11198_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-7859_11814_7	TNTAYLELSSLRSEDTAVYYCAKDHYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-2848_20542_7	TSTA[FMVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGT	LTVVSS	108
13124-0540_24508_7	TSTA[FMVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGT	LTVVSS	108
13124-4107_12327_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
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13124-4870_23583_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-4078_18346_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-_9614_9960_7	TSTA[YMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-2552_10161_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-11041_6747_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-8185_18147_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-8027_13180_7	TGTAYMELSNLRSEDTAVYYCARDNRYRGEFSGYDFE	RGQGT	LTVVSS	108
13124-_4111_9790_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-_4128_9784_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108
13124-2862_22915_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFE	WGQGT	LTVVSS	108

13124-14791_9711_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-5213_15196_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-2079_15900_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-13540_4548_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-2382_16449_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-4993_22878_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	107
13124-4437_23388_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-8008_13185_7	TGTA Y MELSNLRSEDTAVYYCARDN Y RGEFSGYDFESRG Q GT	LTVVSS	108
13124-7376_16321_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-3709_19439_7	T I TAYMELSSLRSEDTAVYYCARDYYRGEFSD D YAFESL G QGT	LTVVSS	108
13124-4765_15700_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-9639_24880_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-8292_21235_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-9713_21352_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-9427_20019_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-5040_16938_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-8347_21942_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLVT-	--	105
13124-5777_22947_7	TSTA F VVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124_4397_9065_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-3931_10267_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-5777_18414_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-2961_10599_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-4833_13428_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-7290_10049_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-10984_7775_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-5676_10490_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-4431_19862_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-8438_21841_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124_-4798_9013_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	107
13124-13204_9680_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	107
13124-12757_5026_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-13220_9689_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	107
13124-7770_14522_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-7560_16450_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-4447_14799_7	T I TAYMELSSLRSEDTAVYYCARDYYRGEFSD D YDFESWGQGT	LTVVSS	108
13124_-7855_8304_7	TNTAYME V SSLRSEDTAVYYCARDYY G FEFSGYDFESWGQGT	LTVVSS	108
13124-8448_21825_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-9376_12733_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQD	TLTVVSS	108
13124-0561_12859_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-18447_9188_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-3651_15165_7	T I TAYMELSSLRSA D TAVYYCARDYYRGEFSD D YAFESWGQGT	LTVVSS	108
13124-8913_15798_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-4025_16095_7	TSTA Y LELSSLRSEDTAMYYCAG D PYRGEFSGYDFESWGQGT	LTVVSS	108
13124-5309_16512_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-3780_18957_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-1006_19809_7	TNTAYMELSSLRSEDTAVYYCAR C YYRGEFSGYDFESWGQGT	LTVVSS	108
13124-6574_14673_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-0469_13993_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-2633_17804_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-5230_13315_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	107
13124-6595_14658_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-3611_18936_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-8388_23214_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-1740_10157_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-9729_17599_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-5134_17304_7	T I TAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWSQGT	LTVVSS	108
13124-0984_22407_7	TSTP F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-4171_16525_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-6490_17643_7	TNTAYME V RSLRSEDTAVYYCARD D YS G EFSGYDFESWEGT	LTVVSS	108
13124-8992_15884_7	T I TAYMELSSLRSEDTAVYYCARDYYRGEFSD D YAFESWGQGT	LTVVSS	108
13124-3212_15270_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-3308_14663_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-0627_16815_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-0069_17021_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGY E FD S WG P GTLTVVSS	108	
13124-5431_14383_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-2788_17401_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-13091_7899_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-7844_12713_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-9626_17094_7	TSTA F MVLSSLRSEDTAVYYCARDYYRGEFSGVYDFESWGQGT	LTVVSS	108
13124-4257_18254_7	T I TAYM G LSLRSEDTAVYYCARDYYRGEFSD D YAFESWGQGT M TVVSS	108	
13124-2825_14799_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-9341_15546_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124_-5533_6283_7	T I TAYMELSSLRSEDTAVYYCARDYYRGEFSD D YAFESL G QGT	LTVVSS	108
13124-13282_9736_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-2363_16799_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108
13124-6005_15313_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108

13124_-9318_3741_7	TNTAYMEVSSLRSEDTAVYYCARDYYGGEFSGYDFESWGQGT	LTVVSS	108		
13124-6621_21899_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-5600_22783_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSDYAFESWAREPWS	SPSPSQ	108		
13124-2369_18623_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-11115_8100_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-5412_14379_7	TNTAYMELSSLRSEDTAVYYGARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-3393_15271_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-5261_22336_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-6633_21883_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-3864_23299_7	TNTAYMDLSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	R	108		
13124-15325_2660_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-5953_20855_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-1994_10960_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-14093_8682_7	TNTAYMELSSLRSEDTAVYYCARGHYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-6875_19742_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSDYAFESWGQGT	LTVVSS	108		
13124-0152_20100_7	TNTAYMELSSLRSEDTAVYYCASDH	YRGEFSGYDFESWGQGT	LTVVSS	108	
13124_-7427_9819_7	TNTAYMEVSSLRSEDTAVYYCARDYYGGEFSGYDFESWGQGT	LTVVSS	108		
13124-1170_11174_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-0112_10007_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSDYAFESWGQGT	LTVVSS	107		
13124-0644_22215_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-10680_5800_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-1335_12762_7	TNTAYVELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-6480_14906_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-9619_15184_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-8510_23327_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-7637_10676_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-9005_19868_7	TNTAYMELSSLRSEDTAVYYCARDYYGGEFSGYDFESWGQGT	LTVVSS	108		
13124-6121_19672_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-3435_11203_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124_-6582_9947_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-6431_22711_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-1655_14573_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-9956_15283_7	TNTAYMELGSLRSEDTAVYYCARDYYRGELE	SGYDFESWGQGT	LTVVSS	108	
13124_-6539_7943_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-5113_23035_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTP	VTVSS	108	
13124-2646_10466_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-2009_10951_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-9577_12166_7	TNTDYLEVSRLT	SEDTAIYCTRDYYRGEFSGF	DFESWGQGT	LTVVSS	108
13124_-9099_7882_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-13289_8683_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-3751_15933_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-0093_19171_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-1133_12137_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-6262_20261_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	P	VTVSS	108	
13124-2302_16661_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	107		
13124_-5920_9696_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124_-3239_9156_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-6793_11592_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-7842_13580_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124_-4115_7313_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-2764_15933_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-4814_16906_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	107		
13124-12894_8455_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSDYAFESWGQGT	LTVVSS	108		
13124-4021_10214_7	TNTAYMEVSSLRSEDTAVYYCARDYHYHS	GEFSGYDFESWGQGT	LTVVSS	108	
13124-14652_6376_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-1934_15415_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSDYAFESRGQGT	LTVVSS	108		
13124-4075_21379_7	TNTAYMELSSLRSEGT	AVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108	
13124-1819_23558_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-1674_19239_7	TNTAYMELSSLRSEDTAVYYCARGYYRGEFSGYDFESWGQGT	LTVVSS	106		
13124-5141_14947_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-8320_22493_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGR	GTLVTSPQ	108		
13124-9273_20388_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-11434_5872_7	TNTAYLELSSLRSEDTAVYYCARDHYGG	EFSGYDFESWGQGT	LTVVSS	104	
13124-6982_17104_7	TSTAFMMVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-11455_8079_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-2646_15030_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-8583_19748_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	105		
13124_-5500_4716_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-10551_5365_7	TCTAFAFMVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-5687_11081_7	TSTAYMELSSLRSD	DTAVYYCVRDYYRGEFSGYDFESWGQGT	LTVVSS	108	
13124_-9986_6754_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124-5131_14932_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-4630_13426_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		
13124-0784_12259_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSDYAFESRGQGT	LTVVSS	108		
13124-13894_9673_7	TSTAFMVVLSSLRSEDTAVYYCARDYYRGEFSGYEFD	SWGPGLTVVSS	108		
13124_-3199_9372_7	TNTAYMELSSLRSEDTAVYYCARDYYRGEFSGYDFESWGQGT	LTVVSS	108		

13124-5824_17565_7	T I TAYMELSSLRSA DT A V Y Y C A R D Y Y R G E F S D Y A F E S W G Q G T L V T RLL	108
13124-11447_8278_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124_-8718_8350_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-1669_14663_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-11149_8008_7	T N T A Y M E L S S L R S E D T A V Y Y C S R D Y Y R G E F S G Y D F E S W G Q G T L V T - -	105
13124-2846_11434_7	T S T A F M V L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y E F D S W G P G T L V T V S S	108
13124-2687_15585_7	T S T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124_-5358_9258_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-2107_10523_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-2427_12231_7	T T T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S D Y A F E S R D Q G T L V T V S S	108
13124-9497_21934_7	T N T A Y M E V S S L R S E D T A V Y Y C A R D Y Y G G E F S G Y D F E S W G Q G T L V T V S S	108
13124-5247_11941_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124_-7283_4084_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D H Y G G E F S G Y D F E S W G Q G T L V T V S S	108
13124-6630_12424_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-0220_19398_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-6751_12818_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-2649_11192_7	T N T A Y L E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-9530_21220_7	T S T A F M V L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y E F D S W G P G T L V T V S S	108
13124-0172_13235_7	T T T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S D Y A F E S L G Q G T L V T V S S	108
13124_-2789_9174_7	T T T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S D Y A F E S W G Q G T L V T V S S	108
13124-3398_11605_7	T T T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S D Y A F E S S G Q G T L V T V S S	108
13124-2079_14429_7	T T T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S D Y A F E S W G Q G T L V T V S S	108
13124-3706_11235_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124_-7945_8135_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124_-5742_4672_7	T N T A Y M E L S S L V P E D T A V Y F C A S D H Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-4242_12552_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-4022_12442_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-3434_17111_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-5155_16928_7	T N T A Y M E V S S L R S E D T A V Y Y C A R D Y Y S D E F S G Y D F E S W G Q G T L V T V S S	108
13124-9502_14439_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-4887_19093_7	T T T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S D Y A F E S S G Q G T L V T V S S	108
13124-7862_18760_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-9420_11732_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-5327_11154_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-7222_19833_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-6620_22193_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-7778_16183_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-8010_16995_7	T S T A F M V L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y E F D S W G P G T L V T V S S	108
13124-10630_5219_7	T S T A F M V L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y E F D S W G P G T L V T V S S	108
13124-4923_16041_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-9997_20587_7	T N T A Y M E L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-7237_18302_7	T N T A N L E L S S L R S E D T A V D Y C A R D H D R G E F S G Y D F E S W G Q G T L V T V S S	108
13124-3515_14854_7	T S T A F M V L S S L R S E D T A V Y Y C A R D Y Y R G E F S G Y E F D S W G P G T L V T V S S	108
13136-9104_15300_6	T N T A Y M E L S S L R S E D T A V Y Y C A R V H Y R G E F S G Y D F E S W G Q G T L V T V S S	108