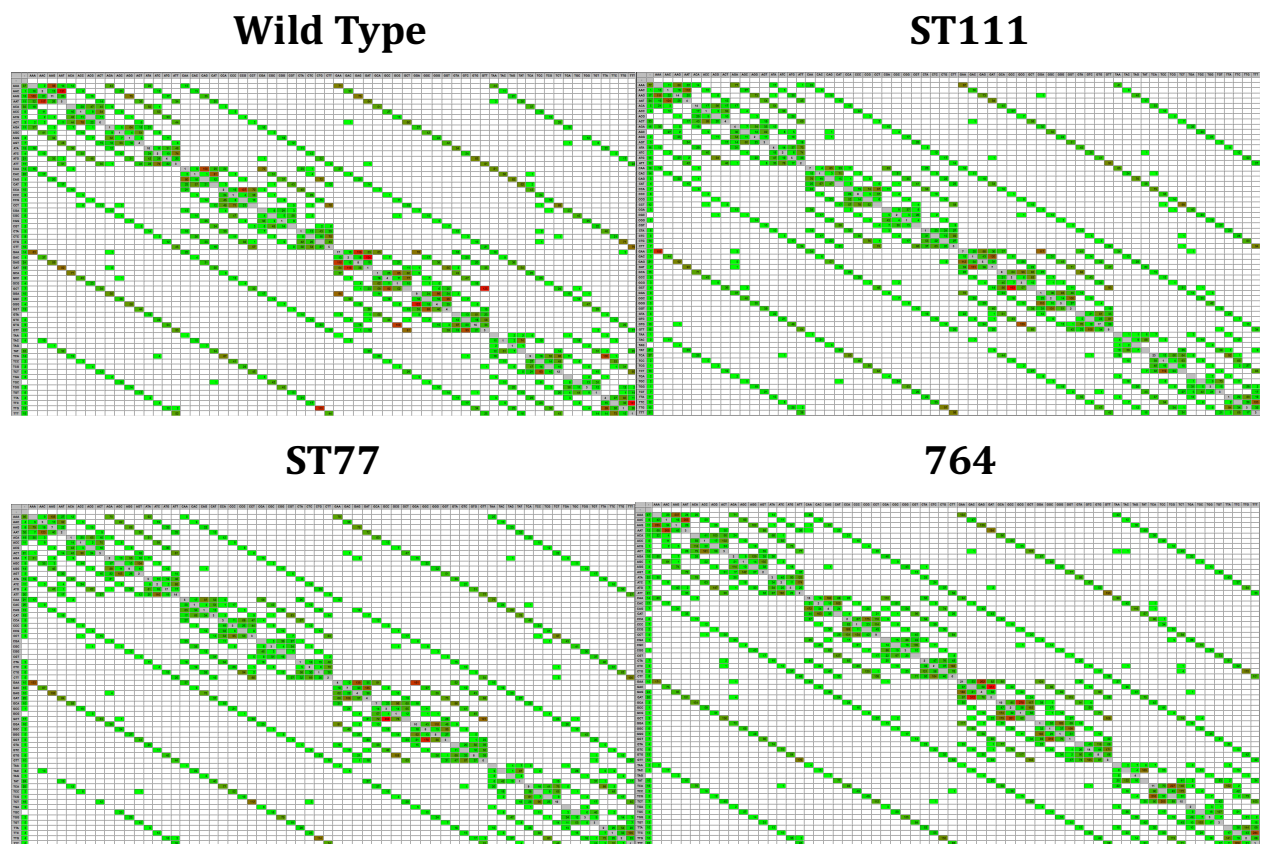


Supplemental Figure 1.



Supplemental Figure 2.

Wild Type

	*	-	+	?	A	C	D	E	F	G	H	I	K	L	M	N	P	Q	R	S	T	V	W	Y	
A	9	3							1	5				1	4				8	5	6			4	3
-			354																						
?																									
A	C	10	6		573	1	26	42		53							58			76	173	237			
C	15				76				14	17	1			1						57	83		1	22	24
E	20	36					255	131		85	34					110			6				56	63	
D	54	38			14		95	254		114								53	1				36		
F	19						19						142	3										29	
G	19	34			54	39	19	50	96		215	616									154	72	31	46	
H	23																								
I	30							1	29															120	
K	65	47					148					149													
L	29	44							190		44	72			816	22		135	39	27	82		91	4	
M	21																								
N	2	12						96									255							37	
P	21			38							15			169				467	35	16	154	36			
Q	123	16											96	96				27	181	106		2			
R	40	27			1	82				50	48	21	14	10	11			57	38	346	45		59		
S	36	28			56	24	1		120	84	19	1	131	88		182		96	560	61	2	6	19		
T	40		151	1								145	22		30	26	14				114	411			
V	26				271	2	25	28	32	72		99		89	34								464		
W	61	2				23			2	10					12					59	2			3	
Y	31	38				50	26		28		49				2	42					24			126	

ST111

	*	-	?	A	C	D	E	F	G	H	I	K	L	M	N	P	Q	R	S	T	V	W	Y	
?	8	3							8			4	2				7	6	7				13	9
?			386																					
A		31		781	1	24	26			44						100		2	83	162	254			
C	6	8			118				28	9	1							50	58		1	30	99	
E	65	38				289	185		102	27						134			1			61	35	
F	8	16		33		121	212															12	73	
D	43				21							291	2					91	6					
G	14	26		64	48	65	101		192			46	183						58	50		50	22	
H	18					65	105			652									101	85		48	45	
I	27							39			139			32	23	11	85	73	1				62	
K	87	84							170		1		19	213										
L	30	56						229			33	62		796	37		219	36	90	74		129	6	
M	15				1										97	49	5	2						
N	35					122						50	62					22	84					
P	28		43								21		50	62			241				81	23	25	
Q	141	21					34				19		160				521	47	23	224	21			
R	89			1	47				77	73		46	43				18	162	56					
S	28	53		88	90			128	106		22	2	119	5	61	240	1	118	655	78	1	3	17	
T	42	130		1							147	22		25	30	44			20	78	400			
V	32		293	1	30	48	41	76		107	1	104	48									541		
W	57	1						2	19					26					82	5			3	
Y	30	23		52	16		26		51				1		40					34			127	

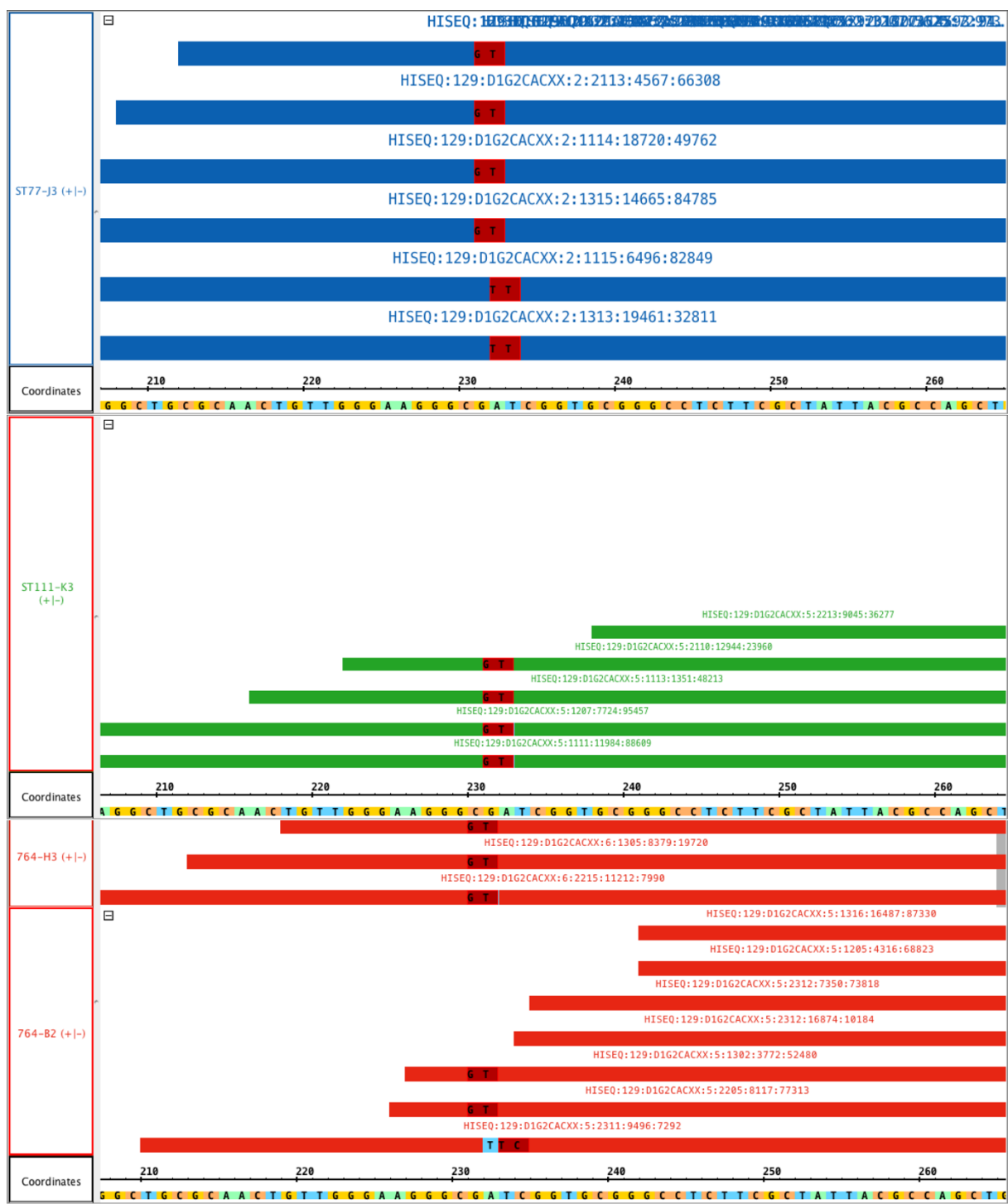
ST77

	*	-	+	?	A	C	D	E	F	G	H	I	K	L	M	N	P	Q	R	S	T	V	W	Y	
?	5							2							2				7	9	7			4	9
?				402																					
A	C		28		714		1	42	35		59						70				62	136	307		
C	14	5				102				9	17									35	50			14	
D	E		37		27			244	173	212	46												50	43	
E	36	20			21			105	209										107	2			95		
F							34						239		144							84		10	
G	26	31			65	34	74	118		177											108		46	43	
H		35					7																		
I		60											124			26	26	30	73	126	1			100	
K	48	74						157		73			304	16	50	39	24			21	20	98	137		
L	50	23					1			221			62	194					30	136	27				
M											35	53		791	35			246	42	71	106		122	18	
N		4										96	47	65	17	1				33		62	51		
P		39															220					117	14		
Q		24			38							16												42	
R	143	34										124		31	44			471	42	53	181	46			
Q	50	21			1	78					67		11	153	9	13		24	24	166	289		2		
G	25				75	46					116	73						85	260		86	42	62	44	
T		51			127																			36	
V																									
Y	22				257	6	29	34	39	88		84			73	45									
W	81	2								3	24				14						104	1		3	
Y	26	28			65	32		26		62					3	32					21			130	

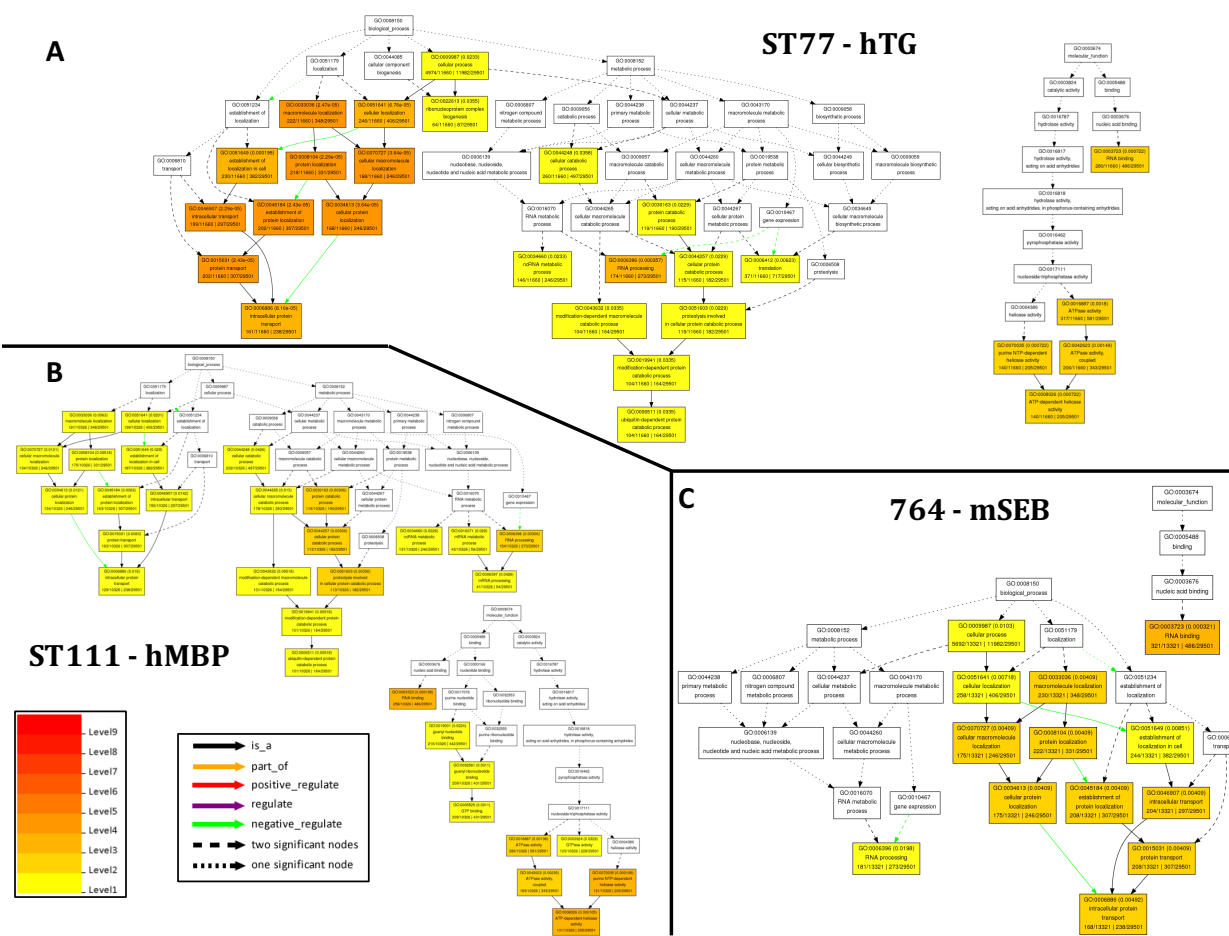
764

	*	-	?	A	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	V	W	Y	
-	30	3				1		5		4			4	6				11	5	7				4	8
-			415																						
-																									
A		8			1,555	4	28	66			101							89			2	163	356	393	
C		19	17			263			26	26									93	115				35	78
D							688	275		217	78							176		4				70	101
E	89	34		140			268	470		193										4					
F		411							453				145		208				93	2		104	91		
G	19	22		84	43	123	178			1,199											171	394		70	43
H		17									325				35		52	50	119	151		1			120
I		50						70				605	35	148	123	41				25	48	201	348		
K	77	58				269					115	443	51	116		111	173	54							
L	34	47						345		57	94		1,660	72			359	91	124	150	3	154	18		1
M		7			2						134	40	111	5	2							147	53		
N	21				231						36	49	173			535			1			174	50		61
P	19			80						36			194					1,113	67	66	225	60			
Q	217	21				108				142		91	124					45	355	69	1	2			
R		50			1	143				143	167	49	136	32	18			132	539	143	36			24	
S	34	37		174	89						1	227	133	299							1,648	191	7	41	
T	1	37		306		1					202	37		73	43	63				40	188	925		1	
V		38		416		45	60	137	120		325		201	84								1,028			
W	81	2			14				2	31			21							119	15			3	
Y	48	17			68	37		49		92			2	58							66				321

Supplemental Figure 3.



Supplemental Figure 4.



Supplemental Table 1.

Sample	SNPs	TS/TV Ratio	Indels	singleton snps	singleton ts/tv	singleton indels	multiallele sites	multiallele snps	SNP Rate AVG	A<C	A<G	A<T	C<A	C<G	C<T	G<A	G<C	G<T	T<A	T<C	T<G
WT01	21096	1.61	1964	50.80%	1.72	57.00%	37	23	41479	889	3609	1497	811	782	3005	2972	816	814	1545	3442	936
WT02	20388	1.63	1914	48.70%	1.72	57.01%	34	24	42874	859	3412	1435	794	727	2978	2883	748	818	1509	3377	872
WT03	23047	1.61	2225	52.20%	1.68	58.30%	44	27	37826	972	3827	1661	825	840	3271	3348	876	902	1756	3782	1014
WTH1	21650	1.62	1957	48.10%	1.67	57.70%	43	25	40496	932	3464	1448	843	833	3194	3160	806	891	1530	3576	998
WTH2	20605	1.57	1786	46.70%	1.65	55.20%	31	19	42715	902	3361	1417	813	759	2972	2903	808	876	1493	3377	943
WTH3	21760	1.6	1928	46.20%	1.7	55.70%	41	29	40362	931	3601	1513	828	793	3139	3057	817	846	1612	3620	1032
WT11	18643	1.65	1527	46.30%	1.74	55.10%	27	13	47416	820	3194	1230	747	699	2561	2607	725	697	1233	3245	898
WT12	18640	1.6	1622	47.20%	1.72	56.40%	31	26	47179	823	3165	1245	716	709	2642	2603	718	723	1328	3088	906
WT13	20536	1.67	1843	47.50%	1.74	55.80%	30	22	42704	864	3493	1404	757	776	3031	2938	767	794	1449	3351	894
Mean	20702.22	1.62	1862.89	0.48	1.70	0.56	35.33	23.11	42561.22	888.00	3458.44	1427.78	792.67	768.67	2977.00	2941.33	786.78	817.89	1495.00	3433.11	943.67
StdDev	1427.37	0.03	204.39	0.02	0.03	0.01	6.18	4.78	3117.09	51.60	208.49	132.34	43.03	50.37	236.85	239.45	51.22	71.41	151.82	206.07	57.95
StdErr	475.79	0.01	68.13	0.01	0.01	0.00	2.06	1.59	1039.03	17.20	69.50	44.11	14.34	16.79	78.95	79.82	17.07	23.80	50.61	68.69	19.32
ST11B1	21301	1.64	1984	49.40%	1.67	56.70%	40	26	41064	961	3577	1467	812	739	3121	2968	833	803	1500	3569	978
ST11B2	22297	1.61	1997	49.20%	1.68	59.20%	44	34	39331	1034	3676	1553	840	787	3228	3172	808	882	1562	3714	1076
ST11B3	20363	1.64	1909	49.00%	1.71	57.20%	40	30	42417	911	3487	1470	767	743	2970	2959	772	828	1386	3434	940
ST11I1	19005	1.65	1510	44.70%	1.77	56.90%	26	21	46636	877	3253	1271	705	667	2739	2724	689	724	1348	3143	888
ST11I2	18356	1.64	1539	45.70%	1.79	54.50%	32	26	48097	821	3185	1266	671	662	2556	2592	684	662	1328	3079	876
ST11I3	21702	1.66	1981	44.70%	1.68	56.00%	38	29	40444	997	3899	1471	788	715	2911	2952	779	857	1556	3805	1002
ST11K1	19709	1.63	1450	47.20%	1.73	56.10%	24	20	45232	965	3386	1355	706	715	2661	2688	731	709	1334	3487	993
ST11K2	24097	1.62	2326	52.90%	1.68	59.10%	45	26	36242	1095	4056	1596	898	827	3534	3436	931	984	1703	3907	1156
ST11K3	15044	1.6	1065	45.40%	1.69	56.50%	14	11	59443	732	2597	996	540	538	2090	1976	562	563	1065	2597	800
Mean	20208.22	1.63	1750.22	0.48	1.71	0.57	33.67	24.78	44322.89	932.56	3457.33	1382.78	747.44	710.33	2867.78	2829.67	754.33	779.11	1420.22	3415.00	967.67
StdDev	2615.63	0.02	385.91	0.03	0.04	0.01	10.46	6.72	6787.46	111.19	429.78	184.87	105.96	83.17	420.05	411.12	104.85	127.46	184.86	413.65	107.68
StdErr	871.88	0.01	128.64	0.01	0.01	0.00	3.49	2.24	2262.49	37.06	143.26	61.62	35.32	27.72	140.02	137.04	34.95	42.49	61.62	137.88	35.80
ST77D1	23491	1.5	2145	51.60%	1.54	58.40%	45	32	37285	1305	3891	1640	897	821	3304	3084	860	903	1544	3841	1434
ST77D2	22080	1.52	2016	49.80%	1.55	58.40%	46	29	38410	1262	3898	1531	845	808	3070	2974	808	899	1605	3894	1295
ST77D3	24214	1.51	2202	52.50%	1.55	56.20%	43	28	36220	1345	4058	1653	964	859	3323	3242	877	957	1703	3959	1304
ST77F1	18610	1.51	1396	46.00%	1.56	56.40%	28	21	47788	1045	3125	1244	740	644	2569	2476	692	729	1279	3029	1061
ST77F2	20530	1.51	1624	49.50%	1.56	57.80%	26	16	43163	1112	3446	1406	798	701	2789	2748	784	809	1482	3388	1085
ST77F3	24879	1.51	2110	50.10%	1.56	56.50%	52	37	35419	1362	4066	1688	948	919	3421	3369	915	983	1752	4130	1365
ST77J1	18520	1.64	1519	48.90%	1.76	54.90%	23	19	47715	806	3150	1257	707	688	2655	2660	699	714	1358	3057	791
ST77J2	22737	1.68	1906	47.10%	1.74	58.20%	45	31	38769	969	3923	1496	865	823	3244	3279	818	890	1619	3841	1003
ST77J3	19129	1.66	1540	49.40%	1.76	58.60%	33	28	46259	842	3292	1300	770	681	2758	2735	708	696	1342	3159	876
Mean	21665.56	1.56	1828.67	0.49	1.62	0.57	37.89	26.78	41225.33	1118.67	3649.89	1468.33	837.11	771.56	3014.78	2951.89	795.67	842.22	1520.44	3588.67	1134.89
StdDev	2493.25	0.08	309.83	0.02	0.10	0.01	10.47	6.78	5091.52	216.22	391.96	174.54	90.29	95.02	324.87	312.92	81.82	108.36	166.72	428.88	225.63
StdErr	831.08	0.03	103.28	0.01	0.03	0.00	3.49	2.26	1677.17	72.07	130.65	58.18	30.10	31.67	108.29	104.31	27.27	36.12	55.57	142.96	75.21
764B1	46578	1.55	3098	26.10%	1.67	41.90%	69	40	19267	2256	7393	3220	2012	1625	6736	6737	1662	2036	3198	7502	2241
764B2	26386	1.54	1566	27.30%	1.68	41.60%	56	32	34217	1345	4318	1752	1075	980	3677	3729	999	1109	1784	4309	1342
764B3	40747	1.55	2662	26.20%	1.67	43.40%	83	34	22032	1958	6508	2792	1694	1465	5922	5820	1582	1780	2755	6513	1992
764H1	35176	1.5	2144	26.50%	1.55	41.80%	67	39	25360	1835	5588	2383	1501	1356	4924	5009	1327	1494	2360	5627	1813
764H2	44328	1.49	2869	26.20%	1.56	41.60%	104	55	20267	2303	6989	3053	1904	1630	6385	6321	1646	1908	3019	6890	2336
764H3	35356	1.53	2027	26.60%	1.58	41.10%	86	56	25372	1948	5795	2379	1455	1241	4941	4953	1328	1473	2389	5724	1787
764K1	44693	1.51	2889	26.80%	1.61	42.80%	91	52	20290	2366	7049	3021	1872	1627	6360	6419	1634	1955	3096	7110	2267
764K2	31736	1.54	1855	27.90%	1.62	42.70%	68	45	28445	1712	5070	2119	1302	1122	4505	4539	1189	1330	2045	5161	1687
764K3	38690	1.53	2400	25.40%	1.6	40.90%	82	45	23277	2022	6132	2643	1615	1431	5552	5624	1390	1666	2566	6097	1998
Mean	38187.78	1.53	2390.00	0.22	1.62	0.42	78.44	44.22	24280.78	1971.67	6093.56	2595.78	1603.33	1386.33	5444.67	5461.22	1417.44	1639.00	2575.78	6103.67	1940.33
StdDev	6663.47	0.02	525.75	0.01	0.05	0.01	14.72	8.77	4792.92	321.76	1007.56	481.12	304.21	234.38	1010.03	984.46	231.90	311.33	480.39	1014.57	320.46
StdErr	2221.16	0.01	175.25	0.00	0.02	0.00	4.91	2.92	1597.64	107.25	335.85	160.37	101.40	78.13	336.68	328.15	77.30	103.78	160.13	338.19	106.82