

Supplementary Table 1 - Inclusion and exclusion criteria for the Tribute study.

Inclusion criteria
1. Presence of high-grade Ta or T1 urothelial carcinoma of the bladder with or without CIS; tumor can be primary or recurrent
2. Able to communicate in Dutch, and read and understand the patient information and informed consent form and fill out questionnaires
3. Complete resection of (visible) tumor at start of BCG therapy as determined via re-TURT or negative cystoscopy/cytology (at most 6 weeks prior to BCG therapy initiation)
Exclusion criteria
1. Any previous intravesical BCG therapy
2. Presence of primary CIS only
3. Presence of histopathologically proven muscle-invasive urothelial carcinoma of the bladder at first or re-TUR surgical specimens
4. Presence of tumor stage cN1 of cM1 as assessed by CT-thorax/abdomen
5. Presence of any upper urinary tract tumors
6. Histology subtype of resected tumor is not predominantly urothelial carcinoma
7. Presence of another malignancy other than basal cell carcinoma of the skin or prostate cancer under active surveillance
8. Presence of pregnancy or lactation
9. Presence of active tuberculosis, any form of immunodeficiency (e.g. HIV + serology, transplant recipients) and/or any other contraindication of BCG therapy
10. Patients who have received any systemic cytostatic agents within the last 3 months
11. Patients younger than 18 and older than 90 years of age
12. Patients with uncontrollable urinary tract infection
13. Patients who are deemed unfit for study participation as assessed by their urologist
14. Patients who receive any of the following: Methotrexate, Rituximab, Infliximab, Etanercept, other Anti-TNF α therapies, Anti IL-6 therapy, Anti IL-17 therapy or IFN- γ therapy

Supplementary Table 2 - Characteristics of patients included in the Tribute study.

Gender	n (%)
Male	16 (94)
Female	1 (6)
Age at inclusion (median ± range)	67 ± 37 years
Highest tumor stage at study inclusion¹	n (%)
Ta	7 (41)
T1	10 (59)
Highest tumor grade at study inclusion¹	n (%)
Grade 1	0 (0)
Grade 2a	0 (0)
Grade 2b	2 (12)
Grade 3	15 (88)
Concomitant CIS at study inclusion	n (%)
Yes	6 (35)
No	11 (65)
Total number of BCG received in the year after start BCG	n (%)
5 or 6	2 (12)
7 - 9	3 (18)
10 - 12	5 (29)
13 - 15	7 (41)
Recurrence	n (%)
Yes	5 (29)
No	12 (71)
Reason for discontinuation with BCG or irregular BCG regimen	n
Side effects	4
Tumor progression	2
BCG shortage	1
Other	4
Clinical follow-up time	months
Minimum	21
Maximum	41

¹The highest tumor stage/grade is reported as the highest stage or grade which was found in the pathology report at the transurethral resection of the bladder tumor (TUR) or re-TUR of study inclusion.

Supplementary Table 3 - Overview of the concentration of circulating leukocytes in whole blood measured at different time points during BCG therapy in the Tribute study.

Values are displayed as median \pm range. Two-tailed matched-pairs Wilcoxon signed-rank test was used to determine statistical significant difference between time points. Statistical significance was accepted at $p < 0.05$.

Cell type	Time points and comparisons																
	pre-BCG1 n=17	BCG 2 n=17	p-value BCG2 : Pre- BCG1	BCG 6 n=16	p-value BCG 6 : Pre- BCG 1	pre-BCG 7 n=14	p-value Pre- BCG7 : Pre- BCG1	BCG 9 n=12	p-value BCG 9 : Pre- BCG 1	pre-BCG 10 n=8	p-value Pre- BCG10 : Pre- BCG1	BCG 12 n=7	p-value BCG12 : Pre- BCG1	pre-BCG13 n=3	p-value Pre- BCG13 : Pre- BCG1	BCG 15 n=3	p-value BCG15 : Pre- BCG1
White blood cells (x10 ⁹ /L)	6.44 \pm 6.66	7.15 \pm 6.87	p<0.01	6.71 \pm 6.29	0.35	6.98 \pm 7.01	0.15	7.09 \pm 6.72	0.42	7.10 \pm 10.56	0.15	8.47 \pm 6.30	0.08	6.63 \pm 1.21	0.50	7.17 \pm 2.33	0.50
Neutrophils (x10 ⁹ /L)	3.78 \pm 5.27	4.18 \pm 5.81	p<0.01	4.18 \pm 5.53	0.10	3.88 \pm 6.72	0.28	4.04 \pm 6.08	0.09	3.99 \pm 9.29	0.15	5.8 \pm 5.53	0.08	3.56 \pm 0.80	0.75	4.33 \pm 1.32	0.50
Monocytes (x10 ⁹ /L)	0.64 \pm 0.63	0.75 \pm 0.75	p<0.01	0.68 \pm 0.74	0.70	0.68 \pm 0.64	0.15	0.72 \pm 0.49	0.31	0.65 \pm 1.57	0.64	0.65 \pm 0.20	0.89	0.65 \pm 0.06	0.75	0.73 \pm 0.32	0.50
Lymphocytes (x10 ⁹ /L)	1.98 \pm 2.71	1.89 \pm 3.10	0.35	1.89 \pm 2.62	0.13	2.02 \pm 2.52	0.73	1.67 \pm 1.79	0.15	1.89 \pm 0.90	p>0.99	1.86 \pm 0.82	p<0.05	2.47 \pm 1.02	0.25	2.03 \pm 0.85	0.25

Supplementary Table 4 - Results from the ChIP-seq analysis.

Comparisons in H3K4me3 signal were made between pre-BCG1 and any of the measured post-BCG time points (i.e., BCG6, pre-BCG7, BCG9 and pre-BCG10).

Candidate trained immunity genes are indicated in the final column.

Genomic location	Comparison (up/down in H3K4me3 signal)	log2 fold change	p value	adjusted p value	Distance to gene (in bp)	Nearest Gene	Candidate trained immunity gene
chr10_77636776_77638793	pre-BCG1_v_BCG6_up	0,689051403	0,007152971	0,998975358	95266	C10orf11	
chr11_111512299_111512995	pre-BCG1_v_BCG6_up	0,654214908	0,002777022	0,998975358	39532	SIK2	
chr16_57416786_57417262	pre-BCG1_v_BCG6_up	0,738508555	0,01150535	0,998975358	10654	CX3CL1	
chr17_44911270_44911728	pre-BCG1_v_BCG6_up	0,804794584	0,005248445	0,998975358	-15373	WNT3	
chr17_63848797_63849266	pre-BCG1_v_BCG6_up	1,004453929	0,010607428	0,998975358	-291267	AXIN2	
chr17_68599032_68601980	pre-BCG1_v_BCG6_up	0,595314616	0,046093502	0,998975358	434830	KCNJ2	
chr19_44808740_44809365	pre-BCG1_v_BCG6_up	0,590164057	0,031538809	0,998975358	125	ZNF235	
chr2_218065225_218065862	pre-BCG1_v_BCG6_up	0,743442953	0,022465992	0,998975358	-340757	TNP1	
chr2_38535872_38536457	pre-BCG1_v_BCG6_up	0,602418985	0,005357174	0,998975358	68239	ATL2	
chr2_47369090_47369828	pre-BCG1_v_BCG6_up	0,624761536	0,019328058	0,998975358	13058	C2orf61	
chr3_127915089_127915604	pre-BCG1_v_BCG6_up	0,755085202	0,011702195	0,998975358	43050	EEFSEC	
chr3_9916678_9917495	pre-BCG1_v_BCG6_up	0,694519145	0,00221225	0,998975358	3108	CIDEC	
chr7_6526535_6527062	pre-BCG1_v_BCG6_up	0,671134314	0,005140945	0,998975358	-2926	KDELR2	
chr8_75407155_75407974	pre-BCG1_v_BCG6_up	0,582119322	0,002380173	0,998975358	144948	GDAP1	
chr8_76677782_76678320	pre-BCG1_v_BCG6_up	0,6499125	0,010108019	0,998975358	225947	HNF4G	
chrX_25012752_25013765	pre-BCG1_v_BCG6_up	0,613390269	0,002318506	0,998975358	20806	ARX	
chr1_26786255_26786966	pre-BCG1_v_BCG6_down	-0,758714745	0,000637101	0,998975358	-12399	HMG2	
chr1_40388717_40389694	pre-BCG1_v_BCG6_down	-0,770655267	0,004079169	0,998975358	-21521	MYCL	
chr10_15169051_15169800	pre-BCG1_v_BCG6_down	-0,760960308	0,012395145	0,998975358	30045	RPP38	
chr10_8060651_8061174	pre-BCG1_v_BCG6_down	-0,62168621	0,019991692	0,998975358	-35743	GATA3	
chr10_96270807_96271460	pre-BCG1_v_BCG6_down	-0,746021321	0,00105717	0,998975358	-34440	HELLS	
chr11_2988806_2989632	pre-BCG1_v_BCG6_down	-0,651435773	0,024984251	0,998975358	24388	NAP1L4	
chr12_123075234_123076132	pre-BCG1_v_BCG6_down	-0,587435259	0,024800866	0,998975358	63888	KNTC1	
chr12_48918053_48918675	pre-BCG1_v_BCG6_down	-0,666184082	0,038377299	0,998975358	-1051	OR8S1	
chr12_9675023_9675706	pre-BCG1_v_BCG6_down	-0,789100749	0,025203784	0,998975358	85117	KLRB1	

chr13_40984594_40985410	pre-BCG1_v_BCG6_down	-0,60454567	0,011782629	0,998975358	255732	FOXO1	
chr13_99215373_99216071	pre-BCG1_v_BCG6_down	-0,752790041	0,005675127	0,998975358	-41470	STK24	
chr16_83805581_83806134	pre-BCG1_v_BCG6_down	-0,602580499	0,038564865	0,998975358	-35590	HSBP1	
chr17_18186002_18186641	pre-BCG1_v_BCG6_down	-0,772853983	0,012562824	0,998975358	21898	MIEF2	
chr17_47737581_47738271	pre-BCG1_v_BCG6_down	-0,618225314	0,048005259	0,998975358	17599	SPOP	
chr18_32771283_32771916	pre-BCG1_v_BCG6_down	-0,666942798	0,042069708	0,998975358	-49401	ZNF397	
chr19_14583197_14584356	pre-BCG1_v_BCG6_down	-0,639228815	0,04487689	0,998975358	2397	PTGER1	
chr19_34391821_34392175	pre-BCG1_v_BCG6_down	-1,440010467	0,012998197	0,998975358	102707	KCTD15	
chr19_50418781_50420147	pre-BCG1_v_BCG6_down	-0,726567574	0,000165907	0,998975358	-12936	ATF5	
chr19_6996859_6998063	pre-BCG1_v_BCG6_down	-0,739060745	0,007235638	0,998975358	-33128	MBD3L5	
chr19_9362846_9363386	pre-BCG1_v_BCG6_down	-0,756396915	0,02165982	0,998975358	1510	OR7E24	
chr2_100141611_100142647	pre-BCG1_v_BCG6_down	-0,583964804	0,012887171	0,998975358	-35632	REV1	
chr2_102419197_102419709	pre-BCG1_v_BCG6_down	-0,617440627	0,014536048	0,998975358	104910	MAP4K4	
chr2_143247185_143247952	pre-BCG1_v_BCG6_down	-0,680016677	0,014482225	0,998975358	-358299	LRP1B	
chr2_190359957_190360441	pre-BCG1_v_BCG6_down	-0,585789115	0,037226339	0,998975358	54040	WDR75	
chr20_44969409_44970473	pre-BCG1_v_BCG6_down	-0,630627511	0,011993377	0,998975358	21872	SLC35C2	
chr22_30940258_30940863	pre-BCG1_v_BCG6_down	-0,769205896	0,02897983	0,998975358	2108	SEC14L6	
chr22_31288619_31289191	pre-BCG1_v_BCG6_down	-1,130939237	0,001578769	0,998975358	75282	MORC2	
chr22_50469375_50470019	pre-BCG1_v_BCG6_down	-0,661225179	0,036962161	0,998975358	-18609	IL17REL	
chr3_108125146_108126412	pre-BCG1_v_BCG6_down	-0,618515416	0,006136101	0,998975358	104447	HHLA2	
chr3_195540047_195540679	pre-BCG1_v_BCG6_down	-1,119650598	0,001262186	0,998975358	-1215	MUC4	
chr3_28292893_28294004	pre-BCG1_v_BCG6_down	-0,592031587	0,01612779	0,998975358	10363	CMC1	
chr4_69759047_69759990	pre-BCG1_v_BCG6_down	-0,705055899	0,012000652	0,998975358	57990	UGT2A3	
chr5_119333328_119334023	pre-BCG1_v_BCG6_down	-0,673871289	0,029384374	0,998975358	368383	FAM170A	
chr5_138369920_138370524	pre-BCG1_v_BCG6_down	-0,899239115	0,004222722	0,998975358	-159243	LRRTM2	
chr5_150846511_150847193	pre-BCG1_v_BCG6_down	-0,716839438	0,002174625	0,998975358	19695	SLC36A1	
chr5_56159746_56160675	pre-BCG1_v_BCG6_down	-0,615806547	0,041983077	0,998975358	-44876	SETD9	
chr6_127899285_127901264	pre-BCG1_v_BCG6_down	-0,624973191	0,008861184	0,998975358	1956	C6orf58	
chr6_139839585_139840271	pre-BCG1_v_BCG6_down	-0,604446506	0,027189014	0,998975358	-144171	CITED2	
chr6_158649979_158651155	pre-BCG1_v_BCG6_down	-0,695646842	0,002252665	0,998975358	61183	GTF2H5	
chr7_18495755_18496388	pre-BCG1_v_BCG6_down	-0,816832621	0,004153717	0,998975358	-39854	HDAC9	
chr7_38362900_38363577	pre-BCG1_v_BCG6_down	-0,977123545	0,007895706	0,998975358	145415	STARD3NL	

chr8_11494415_11495264	pre-BCG1_v_BCG6_down	-0,81473298	0,001306633	0,998975358	-66873	GATA4	
chr8_47360890_47361635	pre-BCG1_v_BCG6_down	-0,749887182	0,0038632	0,998975358	-811904	SPDR	
chr9_130038378_130038894	pre-BCG1_v_BCG6_down	-0,604842598	0,036413148	0,998975358	11831	GARNL3	
chr9_35728125_35729024	pre-BCG1_v_BCG6_down	-0,624533639	0,00549807	0,998975358	-3757	CREB3	
chrX_12909856_12910867	pre-BCG1_v_BCG6_down	-0,617485179	0,012246177	0,998975358	-14377	TLR8	
chrX_136648164_136651743	pre-BCG1_v_BCG6_down	-0,597976429	0,037736277	0,998975358	1653	ZIC3	
chr1_6440247_6440965	pre-BCG1_v_pre-BCG7_up	0,83546548	0,002150024	0,999994721	5267	ACOT7	
chr2_218065225_218065862	pre-BCG1_v_pre-BCG7_up	0,868386188	0,007333457	0,999994721	-340757	TNP1	
chr9_121736375_121736868	pre-BCG1_v_pre-BCG7_up	0,620003543	0,031364585	0,999994721	395123	BRINP1	
chrX_65407078_65407688	pre-BCG1_v_pre-BCG7_up	0,63097322	0,035991197	0,999994721	24992	HEPH	
chr1_16514553_16514998	pre-BCG1_v_pre-BCG7_down	-0,580738733	0,00848568	0,999994721	24328	ARHGEF19	
chr1_167439282_167439705	pre-BCG1_v_pre-BCG7_down	-0,660770461	0,038700354	0,999994721	48281	CD247	
chr1_248404046_248404400	pre-BCG1_v_pre-BCG7_down	-1,491606368	0,039297173	0,999994721	1992	OR2M4	
chr1_44730816_44731405	pre-BCG1_v_pre-BCG7_down	-0,617265555	0,011010381	0,999994721	51948	DMAP1	
chr1_47179267_47179652	pre-BCG1_v_pre-BCG7_down	-0,655516037	0,032840975	0,999994721	5276	EFCAB14	
chr10_69228723_69229856	pre-BCG1_v_pre-BCG7_down	-0,634107878	0,000606902	0,999994721	226637	CTNNA3	
chr10_96270807_96271460	pre-BCG1_v_pre-BCG7_down	-0,621199545	0,00580907	0,999994721	-34440	HELLS	
chr10_96699935_96700761	pre-BCG1_v_pre-BCG7_down	-0,665161093	0,018604444	0,999994721	1920	CYP2C9	
chr12_131818687_131819254	pre-BCG1_v_pre-BCG7_down	-0,597698825	0,026005192	0,999994721	-376711	SFSWAP	
chr14_102544516_102545186	pre-BCG1_v_pre-BCG7_down	-0,607150187	0,035060911	0,999994721	61172	HSP90AA1	
chr14_23118617_23119253	pre-BCG1_v_pre-BCG7_down	-0,666449245	0,03024756	0,999994721	-15219	OR6J1	
chr15_57300317_57302218	pre-BCG1_v_pre-BCG7_down	-0,697848958	0,005520165	0,999994721	90447	TCF12	
chr16_87490634_87491479	pre-BCG1_v_pre-BCG7_down	-0,60412216	0,043686052	0,999994721	34594	ZCCHC14	
chr17_18186002_18186641	pre-BCG1_v_pre-BCG7_down	-0,680603968	0,02686072	0,999994721	21898	MIEF2	
chr17_38967117_38967721	pre-BCG1_v_pre-BCG7_down	-0,725315035	0,004828794	0,999994721	-7958	TMEM99	
chr17_60102370_60102793	pre-BCG1_v_pre-BCG7_down	-0,613147573	0,017707941	0,999994721	40061	MED13	
chr17_7838486_7839742	pre-BCG1_v_pre-BCG7_down	-0,755766647	9,27E-05	0,549122361	3641	CNTROB	
chr19_14583197_14584356	pre-BCG1_v_pre-BCG7_down	-0,646723082	0,0424442	0,999994721	2397	PTGER1	
chr19_34391316_34391731	pre-BCG1_v_pre-BCG7_down	-1,191724455	0,017510171	0,999994721	102233	KCTD15	
chr19_34391821_34392175	pre-BCG1_v_pre-BCG7_down	-1,333760569	0,020529106	0,999994721	102707	KCTD15	
chr19_41877729_41878637	pre-BCG1_v_pre-BCG7_down	-0,724618447	0,001746396	0,999994721	-3946	TMEM91	
chr19_50418781_50420147	pre-BCG1_v_pre-BCG7_down	-0,866652017	7,73E-06	0,150338015	-12936	ATF5	

chr19_7450321_7450984	pre-BCG1_v_pre-BCG7_down	-1,133122444	0,027813742	0,999994721	36805	ENSG00000263264	
chr19_9362846_9363386	pre-BCG1_v_pre-BCG7_down	-0,64667456	0,047818914	0,999994721	1510	OR7E24	
chr2_132416089_132416758	pre-BCG1_v_pre-BCG7_down	-0,671188751	0,014675765	0,999994721	-166429	MZT2A	
chr2_38600354_38601147	pre-BCG1_v_pre-BCG7_down	-0,659593304	0,011498059	0,999994721	3653	ATL2	
chr20_45097972_45098504	pre-BCG1_v_pre-BCG7_down	-0,644586356	0,029180731	0,999994721	43955	ZNF334	
chr20_60058430_60058967	pre-BCG1_v_pre-BCG7_down	-0,589917859	0,029753883	0,999994721	231217	CDH4	
chr22_10739623_10740127	pre-BCG1_v_pre-BCG7_down	-1,214844819	0,018147771	0,999994721	NONE	NONE	
chr3_195540047_195540679	pre-BCG1_v_pre-BCG7_down	-0,857411093	0,012256027	0,999994721	-1215	MUC4	
chr3_43996868_43997375	pre-BCG1_v_pre-BCG7_down	-0,820227974	0,002891076	0,999994721	264760	ABHD5	
chr4_114598892_114599748	pre-BCG1_v_pre-BCG7_down	-0,956775355	0,000252984	0,81954027	82904	CAMK2D	
chr6_38715073_38715534	pre-BCG1_v_pre-BCG7_down	-0,733232054	0,006110365	0,999994721	24406	DNAH8	
chr8_24293961_24294531	pre-BCG1_v_pre-BCG7_down	-0,603682306	0,031733059	0,999994721	-4293	ADAM7	
chr9_130038378_130038894	pre-BCG1_v_pre-BCG7_down	-0,642805347	0,025783826	0,999994721	11831	GARNL3	
chr9_35728125_35729024	pre-BCG1_v_pre-BCG7_down	-0,674004515	0,002669947	0,999994721	-3757	CREB3	
chr9_41229458_41230737	pre-BCG1_v_pre-BCG7_down	-1,060673596	0,043559406	0,999994721	97266	SPATA31A4	
chr1_157993429_157994057	pre-BCG1_v_BCG9_up	0,696914991	0,002680689	0,242014136	30343	KIRREL	
chr1_16623844_16624356	pre-BCG1_v_BCG9_up	1,466729193	0,011485026	0,327924731	54849	FBXO42	
chr1_16725115_16725553	pre-BCG1_v_BCG9_up	1,303118063	0,038490456	0,433902916	38585	SPATA21	
chr1_167439282_167439705	pre-BCG1_v_BCG9_up	0,669323257	0,029654949	0,406580095	48281	CD247	
chr1_247517760_247518647	pre-BCG1_v_BCG9_up	0,64328358	0,003111115	0,247622157	-23159	ZNF496	
chr1_50023617_50024078	pre-BCG1_v_BCG9_up	0,809239495	0,004900496	0,26789583	465737	AGBL4	
chr1_52368383_52368812	pre-BCG1_v_BCG9_up	0,714817508	0,01140199	0,326392462	-24121	NRD1	
chr1_6440247_6440965	pre-BCG1_v_BCG9_up	0,661925934	0,017121536	0,357131651	5267	ACOT7	
chr10_18140266_18140963	pre-BCG1_v_BCG9_up	0,696448971	0,014760934	0,342969644	42263	MRC1	
chr10_48523908_48524321	pre-BCG1_v_BCG9_up	0,884174765	0,007464466	0,291925216	-85139	GDF10	
chr10_51074164_51075050	pre-BCG1_v_BCG9_up	1,070598112	0,001037404	0,194978227	56108	PARG	
chr10_69408912_69409384	pre-BCG1_v_BCG9_up	0,604722225	0,005301692	0,26789583	46779	CTNNA3	
chr10_76163_76791	pre-BCG1_v_BCG9_up	0,597805161	0,001690453	0,206649859	18764	TUBB8	
chr10_77636776_77638793	pre-BCG1_v_BCG9_up	0,675603544	0,008593409	0,303691088	95266	C10orf11	
chr10_93600817_93601603	pre-BCG1_v_BCG9_up	0,720275938	0,011776204	0,327924731	43141	TNKS2	
chr10_96374986_96375491	pre-BCG1_v_BCG9_up	0,611816243	0,00999409	0,31586199	-68139	CYP2C18	
chr10_99536791_99537421	pre-BCG1_v_BCG9_up	0,64714305	0,047965626	0,462208279	-5397	SFRP5	

chr11_129375636_129376399	pre-BCG1_v_BCG9_up	0,809249811	0,039057075	0,436127427	130183	BARX2	
chr11_57311205_57311772	pre-BCG1_v_BCG9_up	0,669137502	0,0044124	0,264296386	2510	SMTNL1	
chr11_9091129_9091919	pre-BCG1_v_BCG9_up	0,593183795	0,01092102	0,324090769	21622	SCUBE2	
chr12_108129230_108129631	pre-BCG1_v_BCG9_up	0,876948204	0,001463556	0,20205633	25506	PRDM4	
chr12_120368678_120369627	pre-BCG1_v_BCG9_up	0,687052935	0,020597858	0,375283061	-54058	CIT	
chr12_203473_203985	pre-BCG1_v_BCG9_up	0,881814335	0,001923152	0,219884136	27798	IQSEC3	
chr12_33439120_33439771	pre-BCG1_v_BCG9_up	0,738685843	0,01185274	0,328647216	153308	SYT10	
chr12_553478_554415	pre-BCG1_v_BCG9_up	1,07821576	0,020982764	0,375283061	-15583	B4GALNT3	
chr12_9965209_9966762	pre-BCG1_v_BCG9_up	0,582169183	0,026797007	0,391619113	-14091	KLRF1	
chr13_36431427_36432649	pre-BCG1_v_BCG9_up	0,621170094	0,000491653	0,15927111	273405	DCLK1	
chr13_36919663_36920530	pre-BCG1_v_BCG9_up	0,604666747	0,004740503	0,26789583	837	SPG20	
chr14_24314661_24315492	pre-BCG1_v_BCG9_up	0,654575787	0,015510165	0,34738072	-107718	DHRS4	
chr15_20282402_20282955	pre-BCG1_v_BCG9_up	1,520223688	0,02040073	0,374620679	NONE	NONE	
chr15_20348867_20349764	pre-BCG1_v_BCG9_up	1,46919324	0,010630255	0,32138843	NONE	NONE	
chr15_51341595_51342117	pre-BCG1_v_BCG9_up	0,631708352	0,049777963	0,465008002	55617	TNFAIP8L3	
chr15_67825416_67825995	pre-BCG1_v_BCG9_up	0,593717592	0,020727804	0,375283061	-9341	MAP2K5	
chr15_70853648_70854381	pre-BCG1_v_BCG9_up	0,787537646	0,003766888	0,264101006	201917	UACA	
chr15_93072319_93073342	pre-BCG1_v_BCG9_up	0,608904603	0,023870548	0,381242269	126357	FAM174B	
chr16_28505586_28508309	pre-BCG1_v_BCG9_up	0,621971477	0,02243421	0,375911088	-93	CLN3	
chr16_3112406_3113051	pre-BCG1_v_BCG9_up	0,716089086	0,002706427	0,24241855	-2656	IL32	Yes
chr16_68356168_68356928	pre-BCG1_v_BCG9_up	0,621402042	0,042897326	0,447569633	11511	PRMT7	
chr16_83968176_83968703	pre-BCG1_v_BCG9_up	0,605588733	0,023939651	0,381482232	-14232	OSGIN1	
chr17_32927753_32928522	pre-BCG1_v_BCG9_up	0,800033905	0,004281337	0,264296386	20370	TMEM132E	
chr17_43231538_43232635	pre-BCG1_v_BCG9_up	0,824499503	0,015605312	0,34738072	-5980	HEXIM2	
chr17_44308153_44309186	pre-BCG1_v_BCG9_up	0,730001858	0,002421425	0,237208728	-38504	KANSL1	
chr17_44911270_44911728	pre-BCG1_v_BCG9_up	0,867666567	0,003057146	0,247622157	-15373	WNT3	
chr17_48576639_48577165	pre-BCG1_v_BCG9_up	0,785418302	0,025111638	0,384932891	-8843	MYCBPAP	
chr17_54900444_54900960	pre-BCG1_v_BCG9_up	0,774179569	0,003996913	0,264101006	10555	C17orf67	
chr17_57833179_57833561	pre-BCG1_v_BCG9_up	0,614435985	0,014846127	0,34352877	48544	VMP1	
chr17_74861124_74861929	pre-BCG1_v_BCG9_up	0,692798883	0,025832308	0,387850306	-7202	MGAT5B	
chr18_12777022_12777914	pre-BCG1_v_BCG9_up	0,59774619	0,025862555	0,387850306	-74695	CEP76	
chr18_28176755_28178224	pre-BCG1_v_BCG9_up	0,591838187	0,00145541	0,20205633	445217	DSC3	

chr18_5890697_5891242	pre-BCG1_v_BCG9_up	0,7488732	0,012392256	0,333977084	4984	TMEM200C	
chr19_1000174_1000965	pre-BCG1_v_BCG9_up	0,915505304	1,95E-05	0,037885069	152	GRIN3B	
chr19_17794772_17795540	pre-BCG1_v_BCG9_up	0,765614172	0,022517013	0,37611534	3852	UNC13A	
chr19_18789874_18790435	pre-BCG1_v_BCG9_up	0,655269743	0,046525222	0,457647131	-4333	CRTC1	
chr19_19224765_19225533	pre-BCG1_v_BCG9_up	0,591169806	0,003067576	0,247622157	24153	TMEM161A	
chr19_22421606_22422542	pre-BCG1_v_BCG9_up	0,929597002	0,033701486	0,422463275	-42321	ZNF676	
chr19_2720891_2721772	pre-BCG1_v_BCG9_up	0,6207245	0,001838641	0,212724142	84	DIRAS1	
chr19_35040686_35041398	pre-BCG1_v_BCG9_up	0,628484742	0,009191411	0,308925674	68499	WTIP	
chr19_3576422_3577238	pre-BCG1_v_BCG9_up	0,72403725	0,001309749	0,20205633	3894	HMG20B	
chr19_37817138_37817866	pre-BCG1_v_BCG9_up	0,806825085	0,024553392	0,384016298	-8078	HKR1	
chr19_44808740_44809365	pre-BCG1_v_BCG9_up	0,628527922	0,024096132	0,382253164	125	ZNF235	
chr19_53979761_53980566	pre-BCG1_v_BCG9_up	0,596906904	0,023298467	0,380061443	9175	ZNF813	
chr19_53982086_53983094	pre-BCG1_v_BCG9_up	0,5812511	0,001131143	0,201706747	11601	ZNF813	
chr19_7917319_7918073	pre-BCG1_v_BCG9_up	0,590539367	0,019537726	0,372673973	6267	EVI5L	
chr2_127422914_127423866	pre-BCG1_v_BCG9_up	0,62860734	0,006245432	0,275891965	9881	GYPC	
chr2_127674657_127675223	pre-BCG1_v_BCG9_up	0,581170943	0,034744697	0,426985488	189991	BIN1	
chr2_143936841_143937586	pre-BCG1_v_BCG9_up	0,65935479	0,015524896	0,34738072	50331	ARHGAP15	
chr2_149038517_149039089	pre-BCG1_v_BCG9_up	0,726993363	0,01559817	0,34738072	260223	MBD5	
chr2_176122575_176123082	pre-BCG1_v_BCG9_up	0,765413875	0,000875083	0,183834761	-73494	ATP5G3	
chr2_207681283_207681814	pre-BCG1_v_BCG9_up	0,756932957	0,048970717	0,464936962	-51278	MDH1B	
chr2_23386424_23387052	pre-BCG1_v_BCG9_up	0,709027327	0,032961634	0,420390092	-221350	KLHL29	
chr2_45169015_45169979	pre-BCG1_v_BCG9_up	0,590456205	0,046787605	0,457781598	595	SIX3	
chr2_66445405_66446591	pre-BCG1_v_BCG9_up	0,62664198	0,005421537	0,26789583	-216534	MEIS1	
chr2_88452012_88452886	pre-BCG1_v_BCG9_up	0,643657594	0,010211674	0,320327238	-18530	THNSL2	
chr20_32031166_32031739	pre-BCG1_v_BCG9_up	0,702688365	0,015524423	0,34738072	245	SNTA1	
chr20_6122549_6123226	pre-BCG1_v_BCG9_up	0,655804028	0,001597815	0,204320535	-18697	FERMT1	
chr21_10327772_10328209	pre-BCG1_v_BCG9_up	1,072454777	0,026678946	0,391466617	662891	TPTE	
chr21_10355286_10355883	pre-BCG1_v_BCG9_up	1,375486898	0,013706235	0,335128206	635297	TPTE	
chr21_14063558_14064997	pre-BCG1_v_BCG9_up	1,315132933	0,030025485	0,407545632	-918220	POTED	
chr21_33027133_33027801	pre-BCG1_v_BCG9_up	0,662908488	0,047562153	0,461310162	-4468	SOD1	
chr21_41316555_41317477	pre-BCG1_v_BCG9_up	1,089057429	0,000832501	0,183834761	77773	PCP4	
chr21_8234012_8234860	pre-BCG1_v_BCG9_up	1,124627571	0,031807823	0,415644346	NONE	NONE	

chr22_10731220_10731692	pre-BCG1_v_BCG9_up	1,596988656	0,011732325	0,327924731	NONE	NONE	
chr22_19760571_19761219	pre-BCG1_v_BCG9_up	0,604852454	0,017920949	0,363081267	16669	TBX1	
chr22_29314846_29315812	pre-BCG1_v_BCG9_up	0,627719164	0,005893984	0,270438199	35749	ZNRF3	
chr3_127915089_127915604	pre-BCG1_v_BCG9_up	0,901281312	0,00289325	0,244645504	43050	EEFSEC	
chr3_129343844_129344505	pre-BCG1_v_BCG9_up	0,587395417	0,020757667	0,375283061	-18514	PLXND1	
chr3_130093960_130094722	pre-BCG1_v_BCG9_up	0,727586564	0,002347473	0,237208728	29982	COL6A5	
chr3_134374020_134374815	pre-BCG1_v_BCG9_up	0,607017141	0,023845731	0,381159114	-4554	KY	
chr3_139934997_139935443	pre-BCG1_v_BCG9_up	0,642974065	0,024902901	0,384040277	281193	CLSTN2	
chr3_141051071_141051620	pre-BCG1_v_BCG9_up	0,728896553	0,023231625	0,380061443	-55308	ZBTB38	
chr3_30894470_30894938	pre-BCG1_v_BCG9_up	0,687648774	0,00592483	0,270438199	41553	GADL1	
chr3_43995119_43995603	pre-BCG1_v_BCG9_up	0,6645682	0,025248709	0,386159097	262999	ABHD5	
chr3_46565820_46566396	pre-BCG1_v_BCG9_up	0,688428293	0,015788242	0,348936879	27127	RTP3	
chr3_53494172_53494923	pre-BCG1_v_BCG9_up	0,601742586	0,010599033	0,32138843	-34528	CACNA1D	
chr3_9916678_9917495	pre-BCG1_v_BCG9_up	0,794472756	0,000527765	0,165454372	3108	CIDEC	
chr4_118033227_118033849	pre-BCG1_v_BCG9_up	0,580366785	0,03786915	0,433147183	-26802	TRAM1L1	
chr4_182448678_182449338	pre-BCG1_v_BCG9_up	0,620179297	0,03795948	0,433147183	-715574	TENM3	
chr4_61200308_61201490	pre-BCG1_v_BCG9_up	0,752711427	0,000591506	0,174952403	-866961	LPHN3	
chr4_82561577_82562345	pre-BCG1_v_BCG9_up	0,676972293	0,00140907	0,20205633	-168892	RASGEF1B	
chr4_8269566_8270406	pre-BCG1_v_BCG9_up	0,586413764	0,019317851	0,371763444	-1506	HTRA3	
chr5_120465493_120465806	pre-BCG1_v_BCG9_up	0,703946965	0,028883124	0,40407839	665631	PRR16	
chr5_135578638_135579241	pre-BCG1_v_BCG9_up	0,581065943	0,048632436	0,464076546	110404	SMAD5	
chr5_147509584_147510161	pre-BCG1_v_BCG9_up	0,837101693	0,023093127	0,380061443	-39423	SPINK14	
chr5_179343933_179345711	pre-BCG1_v_BCG9_up	0,724076599	0,0107685	0,32400516	-9963	TBC1D9B	
chr5_55176249_55176797	pre-BCG1_v_BCG9_up	0,635597392	0,045222217	0,453852092	29189	IL31RA	
chr5_88680214_88680682	pre-BCG1_v_BCG9_up	0,75692087	0,000662442	0,180466765	-480549	MEF2C	
chr6_104941012_104941716	pre-BCG1_v_BCG9_up	0,628347827	0,004613939	0,26789583	366430	HACE1	
chr6_147508112_147508790	pre-BCG1_v_BCG9_up	0,637603366	0,04087647	0,442075782	-17218	STXBPS	
chr6_151325412_151325883	pre-BCG1_v_BCG9_up	0,651859948	0,029581631	0,406580095	138963	MTHFD1L	
chr6_159168949_159170125	pre-BCG1_v_BCG9_up	0,722453195	0,000644356	0,180466765	70907	EZR	
chr7_102279639_102280821	pre-BCG1_v_BCG9_up	0,663762491	0,018657892	0,369928459	3008	UPK3BL	
chr7_116671796_116672546	pre-BCG1_v_BCG9_up	0,646015598	0,001942548	0,22080295	78790	ST7	
chr7_130491112_130491571	pre-BCG1_v_BCG9_up	0,745652916	0,006499564	0,28068943	-72454	KLF14	

chr7_130491941_130492469	pre-BCG1_v_BCG9_up	0,84489264	0,004879805	0,26789583	-73317	KLF14	
chr7_20786734_20787201	pre-BCG1_v_BCG9_up	0,637094634	0,030901736	0,412221444	39537	SP8	
chr7_21542834_21543348	pre-BCG1_v_BCG9_up	0,626185715	0,003583466	0,264101006	-39742	DNAH11	
chr7_33904448_33905202	pre-BCG1_v_BCG9_up	0,643791831	0,030802065	0,411908982	-39698	BMPER	
chr7_35971340_35971856	pre-BCG1_v_BCG9_up	0,645722934	0,048458775	0,463839356	130971	SEPT7	
chr7_38630698_38631640	pre-BCG1_v_BCG9_up	0,682129889	0,004535333	0,266324081	39998	AMPH	
chr7_64463539_64464431	pre-BCG1_v_BCG9_up	0,630761844	0,017399399	0,358634266	3046	ERV3-1	
chr7_6526535_6527062	pre-BCG1_v_BCG9_up	0,88590328	0,000258877	0,10938679	-2926	KDELR2	
chr7_82443268_82443808	pre-BCG1_v_BCG9_up	0,591024602	0,044028786	0,449946482	348708	PCLO	
chr8_103501338_103501855	pre-BCG1_v_BCG9_up	0,667993108	0,037886527	0,433147183	-62203	ODF1	
chr8_141366083_141367236	pre-BCG1_v_BCG9_up	0,598766793	0,033286019	0,420390092	102018	TRAPPC9	
chr8_21787326_21788103	pre-BCG1_v_BCG9_up	0,589655644	0,029141762	0,405170543	10533	XPO7	
chr8_76677782_76678320	pre-BCG1_v_BCG9_up	0,762649013	0,002873563	0,244645504	225947	HNF4G	
chr9_113154430_113154996	pre-BCG1_v_BCG9_up	0,678113351	0,017622434	0,360554994	-54625	TXNDC8	
chr9_121599254_121599823	pre-BCG1_v_BCG9_up	0,628292951	0,021876158	0,375283061	532206	BRINP1	
chr9_121736375_121736868	pre-BCG1_v_BCG9_up	0,838147983	0,004027901	0,264296386	395123	BRINP1	
chr9_130938798_130939748	pre-BCG1_v_BCG9_up	0,605288038	0,026837987	0,391790751	16734	C9orf16	
chr9_137053642_137054370	pre-BCG1_v_BCG9_up	0,654073889	0,018884275	0,369928459	52796	WDR5	
chr9_4490073_4491116	pre-BCG1_v_BCG9_up	1,041047554	0,000687068	0,180466765	151	SLC1A1	
chr9_8857297_8858141	pre-BCG1_v_BCG9_up	0,669988044	0,005019625	0,26789583	NONE	NONE	
chr9_93131329_93131827	pre-BCG1_v_BCG9_up	0,817309674	0,009981916	0,31586199	273808	DIRAS2	
chr9_97848484_97849321	pre-BCG1_v_BCG9_up	0,631771814	0,006825443	0,284780812	231081	FANCC	
chrX_65407078_65407688	pre-BCG1_v_BCG9_up	1,29251962	1,61E-05	0,037885069	24992	HEPH	
chrY_11307334_11308401	pre-BCG1_v_BCG9_up	1,346524165	0,014501798	0,340895802	NONE	NONE	
chrY_11322380_11322990	pre-BCG1_v_BCG9_up	1,208813916	0,040049872	0,440548595	NONE	NONE	
chrY_11331928_11334400	pre-BCG1_v_BCG9_up	1,110976485	0,033935189	0,423906348	NONE	NONE	
chrY_56850100_56851308	pre-BCG1_v_BCG9_up	1,094258712	0,028958355	0,404355991	NONE	NONE	
chrY_56855130_56856102	pre-BCG1_v_BCG9_up	1,224352727	0,019675992	0,374209644	NONE	NONE	
chr1_158830992_158837305	pre-BCG1_v_BCG9_down	-1,005472938	0,000826299	0,183834761	33042	MNDA	
chr1_158930786_158934314	pre-BCG1_v_BCG9_down	-0,888955163	0,000867255	0,183834761	31208	PYHIN1	
chr1_16514553_16514998	pre-BCG1_v_BCG9_down	-0,686907861	0,003234611	0,250482609	24328	ARHGEF19	
chr1_169584731_169585422	pre-BCG1_v_BCG9_down	-1,008851354	0,000200917	0,092283586	14273	SELP	

chr1_192158370_192161157	pre-BCG1_v_BCG9_down	-1,087905639	0,000293885	0,11900522	32177	RGS18	
chr1_198638405_198644441	pre-BCG1_v_BCG9_down	-0,977196085	0,000626305	0,179021931	33253	PTPRC	
chr1_241531388_241532998	pre-BCG1_v_BCG9_down	-0,658361993	8,76E-05	0,061244017	-11663	RGS7	
chr1_245953572_245954431	pre-BCG1_v_BCG9_down	-0,944227794	6,91E-05	0,053743783	635715	KIF26B	
chr1_44730816_44731405	pre-BCG1_v_BCG9_down	-0,667614992	0,00781591	0,294608417	51948	DMAP1	
chr1_78003996_78005999	pre-BCG1_v_BCG9_down	-0,622532517	0,000459754	0,154073039	143345	ZZZ3	
chr1_84144173_84146537	pre-BCG1_v_BCG9_down	-1,18962894	5,22E-05	0,049776798	319460	TTLL7	
chr1_89069767_89070467	pre-BCG1_v_BCG9_down	-0,667801267	0,007708476	0,29374227	-79788	PKN2	
chr10_133278153_133278741	pre-BCG1_v_BCG9_down	-0,631809158	0,017391345	0,358634266	-469508	PPP2R2D	
chr10_3828579_3829322	pre-BCG1_v_BCG9_down	-0,657185768	0,0127841	0,334936875	-1484	KLF6	
chr10_63264732_63269666	pre-BCG1_v_BCG9_down	-0,722467206	0,000594066	0,174952403	-53991	TMEM26	
chr11_66100522_66101122	pre-BCG1_v_BCG9_down	-0,581296235	0,049934861	0,465008002	3178	RIN1	
chr12_10386640_10390138	pre-BCG1_v_BCG9_down	-1,284012033	4,15E-05	0,044708307	22985	GABARAPL1	
chr12_10407631_10409685	pre-BCG1_v_BCG9_down	-0,646779721	0,004169511	0,264296386	43254	GABARAPL1	
chr12_118358663_118359778	pre-BCG1_v_BCG9_down	-0,992610273	0,00017394	0,087424315	47567	KSR2	
chr12_123075234_123076132	pre-BCG1_v_BCG9_down	-0,737987159	0,005688876	0,270438199	63888	KNTC1	
chr12_14385600_14386559	pre-BCG1_v_BCG9_down	-1,441325756	4,37E-05	0,044708307	-132536	ATF7IP	
chr12_57768905_57770049	pre-BCG1_v_BCG9_down	-2,205469694	0,005650127	0,270438199	55311	R3HDM2	
chr12_57771011_57771402	pre-BCG1_v_BCG9_down	-1,845770782	0,019279017	0,371579305	53581	R3HDM2	
chr12_68158844_68159804	pre-BCG1_v_BCG9_down	-0,751003093	0,027173491	0,394186417	116823	DYRK2	
chr12_8513426_8514868	pre-BCG1_v_BCG9_down	-0,934675453	0,000900626	0,183834761	-94375	CLEC6A	
chr12_8989434_8991604	pre-BCG1_v_BCG9_down	-0,920820825	0,000403518	0,140056889	15451	A2ML1	
chr12_9827324_9830544	pre-BCG1_v_BCG9_down	-0,700076469	0,011387473	0,326392462	6625	CLEC2D	
chr12_9864997_9870634	pre-BCG1_v_BCG9_down	-0,819628686	4,00E-05	0,044708307	18079	CLECL1	
chr13_40978878_40983360	pre-BCG1_v_BCG9_down	-0,633897378	0,002339089	0,237208728	259615	FOXO1	
chr13_41016040_41019586	pre-BCG1_v_BCG9_down	-0,715707753	0,000116101	0,073766482	222921	FOXO1	
chr13_49109963_49111218	pre-BCG1_v_BCG9_down	-0,684627304	0,010621443	0,32138843	-3222	RCBTB2	
chr13_99256598_99259125	pre-BCG1_v_BCG9_down	-0,899393353	5,78E-06	0,02808669	-83610	STK24	
chr14_60184086_60184518	pre-BCG1_v_BCG9_down	-0,609980056	0,013189727	0,335128206	153382	RTN1	
chr14_88004823_88007605	pre-BCG1_v_BCG9_down	-0,662328417	3,75E-06	0,024327429	453401	GALC	
chr17_31317766_31321936	pre-BCG1_v_BCG9_down	-0,731052707	0,000686461	0,180466765	964	SPACA3	
chr17_46361441_46361887	pre-BCG1_v_BCG9_down	-0,746483283	0,00490629	0,26789583	145888	SKAP1	

chr18_2980276_2982873	pre-BCG1_v_BCG9_down	-0,585071976	0,003941198	0,264101006	30370	LPIN2	
chr2_119929630_119931996	pre-BCG1_v_BCG9_down	-1,232944842	3,33E-05	0,044708307	-14348	C1QL2	
chr2_142877514_142879767	pre-BCG1_v_BCG9_down	-0,81069971	0,000869498	0,183834761	10629	LRP1B	
chr2_143128594_143130833	pre-BCG1_v_BCG9_down	-1,182886117	4,34E-05	0,044708307	-240444	LRP1B	
chr2_157435848_157436462	pre-BCG1_v_BCG9_down	-0,707536247	0,013776171	0,335128206	144202	GPD2	
chr2_159515626_159516942	pre-BCG1_v_BCG9_down	-0,735762245	5,38E-05	0,049776798	-135545	DAPL1	
chr2_191148769_191149446	pre-BCG1_v_BCG9_down	-1,027011355	0,001639788	0,204647596	35663	HIBCH	
chr2_213149684_213150692	pre-BCG1_v_BCG9_down	-0,583018632	0,024454166	0,384016298	253377	ERBB4	
chr2_38600354_38601147	pre-BCG1_v_BCG9_down	-0,620559337	0,020050312	0,3743268	3653	ATL2	
chr2_71417000_71417726	pre-BCG1_v_BCG9_down	-0,626200131	0,003366608	0,255079978	36850	PAIP2B	
chr2_98660684_98663507	pre-BCG1_v_BCG9_down	-0,667333981	0,033440961	0,421346713	-41559	VWA3B	
chr21_14543894_14546545	pre-BCG1_v_BCG9_down	-1,135198724	0,000617716	0,179021931	-437278	POTED	
chr21_24428544_24429525	pre-BCG1_v_BCG9_down	-0,598169548	0,002268601	0,235801044	NONE	NONE	
chr3_108822618_108825023	pre-BCG1_v_BCG9_down	-0,623638668	0,040083369	0,440667668	13168	MORC1	
chr3_151201296_151203233	pre-BCG1_v_BCG9_down	-0,610098525	0,015227304	0,346550342	-25768	IGSF10	
chr3_152243322_152246923	pre-BCG1_v_BCG9_down	-0,944695241	4,27E-05	0,044708307	-186344	TMEM14E	
chr3_16888067_16889077	pre-BCG1_v_BCG9_down	-0,674705656	0,01294649	0,335128206	-37880	PLCL2	
chr3_28292893_28294004	pre-BCG1_v_BCG9_down	-0,767515595	0,002352496	0,237208728	10363	CMC1	
chr4_147057356_147057873	pre-BCG1_v_BCG9_down	-0,706427831	0,006373483	0,278385166	-39266	LSM6	
chr4_39030525_39032408	pre-BCG1_v_BCG9_down	-0,94485086	4,23E-05	0,044708307	2574	TMEM156	
chr5_58491289_58493150	pre-BCG1_v_BCG9_down	-0,94110653	0,000720142	0,181618481	613353	RAB3C	
chr5_95080139_95081875	pre-BCG1_v_BCG9_down	-0,645728733	9,14E-05	0,061244017	14128	RHOBTB3	
chr5_96896313_96896924	pre-BCG1_v_BCG9_down	-0,825441519	0,001528131	0,20205633	-377655	RIOK2	
chr6_127899285_127901264	pre-BCG1_v_BCG9_down	-0,775104355	0,001325887	0,20205633	1956	C6orf58	
chr6_156781504_156782711	pre-BCG1_v_BCG9_down	-1,278193158	1,27E-05	0,037885069	-316955	ARID1B	
chr6_158649979_158651155	pre-BCG1_v_BCG9_down	-0,649509238	0,005124786	0,26789583	61183	GTF2H5	
chr7_116027824_116031041	pre-BCG1_v_BCG9_down	-0,657606305	0,007801748	0,294608417	-110011	CAV2	
chr7_148962607_148964251	pre-BCG1_v_BCG9_down	-0,636625086	3,58E-05	0,044708307	4167	ZNF783	
chr7_33039359_33040256	pre-BCG1_v_BCG9_down	-0,791493562	0,00285903	0,244645504	42791	FKBP9	
chr7_38250186_38251605	pre-BCG1_v_BCG9_down	-1,204282607	0,003985543	0,264101006	33072	STARD3NL	
chr7_38251676_38253400	pre-BCG1_v_BCG9_down	-0,79144902	0,024428606	0,384016298	34714	STARD3NL	
chr7_38332375_38336911	pre-BCG1_v_BCG9_down	-0,626278968	0,001668702	0,206589598	116819	STARD3NL	

chr7_80638066_80642175	pre-BCG1_v_BCG9_down	-1,012602461	0,000907966	0,183834761	-91454	SEMA3C	
chr9_121121259_121122937	pre-BCG1_v_BCG9_down	-0,656774721	0,001496268	0,20205633	655448	TLR4	
chr9_122900911_122901710	pre-BCG1_v_BCG9_down	-1,323583055	1,93E-05	0,037885069	441125	CDK5RAP2	
chr9_36143729_36145208	pre-BCG1_v_BCG9_down	-0,67990964	0,000300583	0,119233323	7727	GLIPR2	
chrX_79144638_79147652	pre-BCG1_v_BCG9_down	-0,818285055	0,002161955	0,230639024	-131596	TBX22	
chr1_159945492_159946025	pre-BCG1_v_pre-BCG10_up	0,599766636	0,03209691	0,62614993	-21715	SLAMF9	
chr1_239386557_239387345	pre-BCG1_v_pre-BCG10_up	0,714345994	0,000936275	0,544998581	-405422	CHRM3	
chr1_247517760_247518647	pre-BCG1_v_pre-BCG10_up	0,693538699	0,002543117	0,548740748	-23159	ZNF496	
chr1_46203088_46203819	pre-BCG1_v_pre-BCG10_up	0,613732358	0,000470679	0,508254413	12867	IPP	
chr1_6440247_6440965	pre-BCG1_v_pre-BCG10_up	0,734187564	0,011547996	0,58050417	5267	ACOT7	
chr1_66751932_66752852	pre-BCG1_v_pre-BCG10_up	0,606981058	0,002828448	0,548740748	-247573	SGIP1	
chr1_85576536_85577452	pre-BCG1_v_pre-BCG10_up	0,655845049	0,002426532	0,544998581	48990	WDR63	
chr10_13891394_13892137	pre-BCG1_v_pre-BCG10_up	0,676195399	0,030766331	0,623045375	262839	PRPF18	
chr10_18140266_18140963	pre-BCG1_v_pre-BCG10_up	0,608992923	0,043435039	0,644410661	42263	MRC1	
chr10_26391595_26392685	pre-BCG1_v_pre-BCG10_up	0,589421725	0,008759807	0,548740748	-113096	GAD2	
chr10_48523908_48524321	pre-BCG1_v_pre-BCG10_up	0,913121803	0,008657688	0,548740748	-85139	GDF10	
chr10_51074164_51075050	pre-BCG1_v_pre-BCG10_up	0,778980423	0,022794524	0,599856373	56108	PARG	
chr10_77636776_77638793	pre-BCG1_v_pre-BCG10_up	0,762577172	0,004933595	0,548740748	95266	C10orf11	
chr10_93600817_93601603	pre-BCG1_v_pre-BCG10_up	0,773266827	0,010191534	0,571815561	43141	TNKS2	
chr10_99536791_99537421	pre-BCG1_v_pre-BCG10_up	0,761423888	0,026562141	0,604315032	-5397	SFRP5	
chr11_111512299_111512995	pre-BCG1_v_pre-BCG10_up	0,614746898	0,008608361	0,548740748	39532	SIK2	
chr11_117186147_117187417	pre-BCG1_v_pre-BCG10_up	0,914102579	0,003393023	0,548740748	190	BACE1	
chr11_118621218_118621750	pre-BCG1_v_pre-BCG10_up	0,645311212	0,025950607	0,60063625	40361	DDX6	
chr11_129375636_129376399	pre-BCG1_v_pre-BCG10_up	1,063460078	0,00940657	0,552373103	130183	BARX2	
chr11_46277608_46278138	pre-BCG1_v_pre-BCG10_up	1,032780291	0,00715079	0,548740748	-21339	CREB3L1	
chr11_72589953_72590556	pre-BCG1_v_pre-BCG10_up	0,686115477	0,0366869	0,627714142	64902	ATG16L2	Yes
chr11_9091129_9091919	pre-BCG1_v_pre-BCG10_up	0,682012912	0,005419495	0,548740748	21622	SCUBE2	
chr11_94740503_94741257	pre-BCG1_v_pre-BCG10_up	0,733804523	0,000681149	0,544998581	-17542	KDM4E	Yes
chr12_125186183_125186787	pre-BCG1_v_pre-BCG10_up	0,654285814	0,026638806	0,604315032	161908	SCARB1	
chr12_14216420_14217014	pre-BCG1_v_pre-BCG10_up	0,587072436	0,048509191	0,649412094	-83664	GRIN2B	
chr12_33439120_33439771	pre-BCG1_v_pre-BCG10_up	0,826087165	0,007414729	0,548740748	153308	SYT10	
chr12_55681472_55682478	pre-BCG1_v_pre-BCG10_up	0,830076471	0,020919145	0,595272408	7041	OR6C6	

chr12_58920109_58920638	pre-BCG1_v_pre-BCG10_up	0,980021901	0,007102775	0,548740748	393929	LRIG3	
chr12_77324798_77325271	pre-BCG1_v_pre-BCG10_up	0,788325855	0,017852725	0,594721648	-52195	CSRP2	
chr12_88579703_88580716	pre-BCG1_v_pre-BCG10_up	0,682296286	0,001843994	0,544998581	44137	TMTC3	
chr13_36919663_36920530	pre-BCG1_v_pre-BCG10_up	0,640752542	0,004455649	0,548740748	837	SPG20	
chr14_88322950_88323848	pre-BCG1_v_pre-BCG10_up	0,590380833	0,039049434	0,635425224	136216	GALC	
chr15_29821480_29822596	pre-BCG1_v_pre-BCG10_up	0,619233345	0,004616746	0,548740748	40889	FAM189A1	
chr15_51093837_51095099	pre-BCG1_v_pre-BCG10_up	0,776856216	0,00045586	0,508254413	-36463	SPPL2A	
chr15_68781658_68782061	pre-BCG1_v_pre-BCG10_up	0,601982932	0,04573435	0,644410661	-57368	ITGA11	
chr15_93072319_93073342	pre-BCG1_v_pre-BCG10_up	0,580935315	0,040905809	0,640955277	126357	FAM174B	
chr16_28505586_28508309	pre-BCG1_v_pre-BCG10_up	0,692492995	0,015723742	0,594721648	-93	CLN3	
chr16_3112406_3113051	pre-BCG1_v_pre-BCG10_up	0,62487336	0,01372673	0,593059077	-2656	IL32	Yes
chr16_3364992_3365653	pre-BCG1_v_pre-BCG10_up	0,629562943	0,019893063	0,594721648	-9678	TIGD7	
chr16_57998320_57999172	pre-BCG1_v_pre-BCG10_up	0,821878644	0,001850081	0,544998581	6270	CNGB1	
chr16_66517060_66517572	pre-BCG1_v_pre-BCG10_up	0,727188274	0,017830062	0,594721648	56116	BEAN1	
chr16_66578946_66579630	pre-BCG1_v_pre-BCG10_up	0,702035549	0,012911627	0,586843988	5027	TK2	
chr16_83968176_83968703	pre-BCG1_v_pre-BCG10_up	0,59445605	0,03642109	0,626474973	-14232	OSGIN1	
chr16_85169302_85169957	pre-BCG1_v_pre-BCG10_up	0,638125394	0,023936899	0,60063625	-23516	FAM92B	
chr16_87945228_87945849	pre-BCG1_v_pre-BCG10_up	0,623762473	0,012506126	0,584685955	24583	CA5A	
chr17_19579663_19580481	pre-BCG1_v_pre-BCG10_up	0,674243969	0,022639442	0,599856373	28008	ALDH3A2	
chr17_44911270_44911728	pre-BCG1_v_pre-BCG10_up	0,967468488	0,00148077	0,544998581	-15373	WNT3	
chr17_47423381_47423996	pre-BCG1_v_pre-BCG10_up	0,638155876	0,01747399	0,594721648	16146	ZNF652	
chr17_68599032_68601980	pre-BCG1_v_pre-BCG10_up	0,987211884	0,001664434	0,544998581	434830	KCNJ2	
chr17_74861124_74861929	pre-BCG1_v_pre-BCG10_up	0,743302875	0,022396088	0,599856373	-7202	MGAT5B	
chr17_78258513_78259494	pre-BCG1_v_pre-BCG10_up	1,152954686	0,000148589	0,433052116	24337	RNF213	
chr18_68721796_68722330	pre-BCG1_v_pre-BCG10_up	0,615846797	0,024985644	0,60063625	-404083	GTSCR1	
chr19_1000174_1000965	pre-BCG1_v_pre-BCG10_up	0,617785294	0,006606671	0,548740748	152	GRIN3B	
chr19_1154578_1155306	pre-BCG1_v_pre-BCG10_up	0,814920222	0,015665864	0,594721648	19340	SBNO2	
chr19_18021848_18022310	pre-BCG1_v_pre-BCG10_up	0,624360238	0,046497421	0,645206643	-23826	CCDC124	
chr19_2610845_2611516	pre-BCG1_v_pre-BCG10_up	0,613873657	8,27E-05	0,401982801	91526	GNG7	
chr19_2720891_2721772	pre-BCG1_v_pre-BCG10_up	0,602782008	0,004274399	0,548740748	84	DIRAS1	
chr19_35673137_35673721	pre-BCG1_v_pre-BCG10_up	0,683554058	0,010375829	0,573432612	27753	FXD5	
chr19_36421332_36422109	pre-BCG1_v_pre-BCG10_up	0,708318616	0,047638346	0,646048229	-4731	LRFN3	

chr19_44808740_44809365	pre-BCG1_v_pre-BCG10_up	0,598885496	0,042168133	0,642840791	125	ZNF235	
chr19_51018636_51019291	pre-BCG1_v_pre-BCG10_up	0,745609755	0,008072415	0,548740748	-1822	ASPDH	
chr19_53982086_53983094	pre-BCG1_v_pre-BCG10_up	0,581038526	0,002093945	0,544998581	11601	ZNF813	
chr19_7645454_7647007	pre-BCG1_v_pre-BCG10_up	0,70531429	0,002398524	0,544998581	-14557	CAMSAP3	
chr19_7917319_7918073	pre-BCG1_v_pre-BCG10_up	0,629756327	0,018023732	0,594721648	6267	EVI5L	
chr2_130963650_130964280	pre-BCG1_v_pre-BCG10_up	0,859778076	0,018443233	0,594721648	-7931	TUBA3E	
chr2_176122575_176123082	pre-BCG1_v_pre-BCG10_up	0,747030181	0,002124942	0,544998581	-73494	ATP5G3	
chr2_199463129_199463701	pre-BCG1_v_pre-BCG10_up	0,611853714	0,012444525	0,584261418	793989	PLCL1	
chr2_207681283_207681814	pre-BCG1_v_pre-BCG10_up	1,088225631	0,006846216	0,548740748	-51278	MDH1B	
chr2_218065225_218065862	pre-BCG1_v_pre-BCG10_up	0,726303877	0,037271135	0,630464383	-340757	TNP1	
chr2_222671267_222672315	pre-BCG1_v_pre-BCG10_up	0,589751762	0,001404558	0,544998581	-234781	EPHA4	
chr2_38535872_38536457	pre-BCG1_v_pre-BCG10_up	0,629447023	0,006482044	0,548740748	68239	ATL2	
chr2_47369090_47369828	pre-BCG1_v_pre-BCG10_up	0,75061791	0,008096932	0,548740748	13058	C2orf61	
chr2_56183678_56184972	pre-BCG1_v_pre-BCG10_up	0,637187569	0,014171787	0,594721648	-33051	EFEMP1	
chr2_73981102_73981611	pre-BCG1_v_pre-BCG10_up	0,944428154	0,002599148	0,548740748	-16844	TPRKB	
chr20_1184994_1185901	pre-BCG1_v_pre-BCG10_up	0,607463888	0,014259035	0,594721648	-20331	TMEM74B	
chr20_32031166_32031739	pre-BCG1_v_pre-BCG10_up	0,655006331	0,031904816	0,62614993	245	SNTA1	
chr20_38164942_38165424	pre-BCG1_v_pre-BCG10_up	0,797586989	0,015602204	0,594721648	574205	DHX35	
chr22_19723411_19724251	pre-BCG1_v_pre-BCG10_up	0,721987369	0,040840498	0,640955277	13363	GP1BB	
chr22_38958866_38960002	pre-BCG1_v_pre-BCG10_up	0,628424025	0,046106616	0,645193875	6857	DMC1	
chr3_12004155_12004931	pre-BCG1_v_pre-BCG10_up	0,630614838	0,021619581	0,597025879	-116150	TAMM41	
chr3_127915089_127915604	pre-BCG1_v_pre-BCG10_up	0,648151194	0,044203621	0,644410661	43050	EEFSEC	
chr3_138434348_138435340	pre-BCG1_v_pre-BCG10_up	0,808285111	0,000640263	0,544998581	107393	FAIM	
chr3_141051071_141051620	pre-BCG1_v_pre-BCG10_up	0,970285492	0,003790667	0,548740748	-55308	ZBTB38	
chr3_46565820_46566396	pre-BCG1_v_pre-BCG10_up	0,711577826	0,017778708	0,594721648	27127	RTP3	
chr3_46926648_46927199	pre-BCG1_v_pre-BCG10_up	0,963219541	0,015383776	0,594721648	2077	PTH1R	
chr3_9916678_9917495	pre-BCG1_v_pre-BCG10_up	1,169343007	9,51E-07	0,018489064	3108	CIDEC	
chr4_165378790_165379636	pre-BCG1_v_pre-BCG10_up	0,709273799	0,001315938	0,544998581	-74011	MARCHF1	
chr5_120465493_120465806	pre-BCG1_v_pre-BCG10_up	0,787283331	0,019980349	0,594721648	665631	PRR16	
chr5_149271493_149272437	pre-BCG1_v_pre-BCG10_up	0,589386543	0,016270069	0,594721648	52391	PDE6A	
chr5_31854616_31855318	pre-BCG1_v_pre-BCG10_up	0,655898918	0,024276151	0,60063625	215450	PDZD2	
chr5_88680214_88680682	pre-BCG1_v_pre-BCG10_up	0,633687915	0,007283208	0,548740748	-480549	MEF2C	

chr6_10523873_10524547	pre-BCG1_v_pre-BCG10_up	0,705498004	0,001970618	0,544998581	-4379	GCNT2	
chr6_147508112_147508790	pre-BCG1_v_pre-BCG10_up	0,749886735	0,022300569	0,599856373	-17218	STXBPS	
chr6_159168949_159170125	pre-BCG1_v_pre-BCG10_up	0,63725387	0,004409672	0,548740748	70907	EZR	
chr7_130491941_130492469	pre-BCG1_v_pre-BCG10_up	0,767070171	0,015581388	0,594721648	-73317	KLF14	
chr7_16850822_16851660	pre-BCG1_v_pre-BCG10_up	0,616428428	0,008906597	0,548740748	-6537	AGR2	
chr7_28957866_28958469	pre-BCG1_v_pre-BCG10_up	0,795621885	0,034791568	0,626474973	-275860	CHN2	
chr7_35971340_35971856	pre-BCG1_v_pre-BCG10_up	0,854108682	0,012544774	0,584685955	130971	SEPT7	
chr7_39609558_39610097	pre-BCG1_v_pre-BCG10_up	0,692997094	0,039287252	0,636254061	3853	YAE1D1	
chr7_39833152_39833706	pre-BCG1_v_pre-BCG10_up	0,595086104	0,016168829	0,594721648	-156207	CDK13	
chr7_64463539_64464431	pre-BCG1_v_pre-BCG10_up	0,710418485	0,012356707	0,583420865	3046	ERV3-1	
chr7_6526535_6527062	pre-BCG1_v_pre-BCG10_up	0,795607526	0,001981361	0,544998581	-2926	KDELR2	
chr7_73624006_73624641	pre-BCG1_v_pre-BCG10_up	0,783004917	0,008285905	0,548740748	576	LAT2	
chr7_76281323_76281940	pre-BCG1_v_pre-BCG10_up	0,666800073	0,022398838	0,599856373	-25074	POMZP3	
chr8_103499318_103500979	pre-BCG1_v_pre-BCG10_up	0,594539971	0,000443046	0,508254413	-63651	ODF1	
chr8_121639626_121640067	pre-BCG1_v_pre-BCG10_up	0,722472369	0,036094072	0,626474973	182181	MTBP	
chr8_144332010_144332542	pre-BCG1_v_pre-BCG10_up	0,777658363	0,020901145	0,595272408	3178	ZFP41	
chr8_21787326_21788103	pre-BCG1_v_pre-BCG10_up	0,847886751	0,002772556	0,548740748	10533	XPO7	
chr8_38974112_38974864	pre-BCG1_v_pre-BCG10_up	0,640222771	0,013688614	0,593059077	9320	ADAM32	
chr8_76677782_76678320	pre-BCG1_v_pre-BCG10_up	0,694797558	0,010430628	0,574334587	225947	HNF4G	
chr8_79611867_79612383	pre-BCG1_v_pre-BCG10_up	0,742441311	0,013633655	0,593059077	33843	ZC2HC1A	
chr9_121736375_121736868	pre-BCG1_v_pre-BCG10_up	0,775484482	0,011635617	0,58050417	395123	BRINP1	
chr9_122213608_122214358	pre-BCG1_v_pre-BCG10_up	0,656148186	0,000822974	0,544998581	-82238	BRINP1	
chr9_130938798_130939748	pre-BCG1_v_pre-BCG10_up	0,75822217	0,008264262	0,548740748	16734	C9orf16	
chr9_38423910_38424641	pre-BCG1_v_pre-BCG10_up	0,852779073	0,015019841	0,594721648	168	IGFBPL1	
chr9_41235084_41235631	pre-BCG1_v_pre-BCG10_up	0,635721704	0,035660341	0,626474973	92006	SPATA31A4	
chr9_4490073_4491116	pre-BCG1_v_pre-BCG10_up	0,730455972	0,023552036	0,60063625	151	SLC1A1	
chr9_93131329_93131827	pre-BCG1_v_pre-BCG10_up	0,796112484	0,017623562	0,594721648	273808	DIRAS2	
chrX_11427265_11428190	pre-BCG1_v_pre-BCG10_up	0,648700614	0,005955701	0,548740748	116195	AMELX	
chrX_134990818_134991429	pre-BCG1_v_pre-BCG10_up	0,595369647	0,031661952	0,625963685	65098	MMGT1	
chrX_65407078_65407688	pre-BCG1_v_pre-BCG10_up	0,735682222	0,022700228	0,599856373	24992	HEPH	
chr1_117001991_117002583	pre-BCG1_v_pre-BCG10_down	-0,790505144	0,032139784	0,62614993	85798	ATP1A1	
chr1_158930786_158934314	pre-BCG1_v_pre-BCG10_down	-0,594576303	0,033768811	0,626474973	31208	PYHIN1	

chr1_198638405_198644441	pre-BCG1_v_pre-BCG10_down	-0,634205202	0,034648769	0,626474973	33253	PTPRC	
chr1_40388717_40389694	pre-BCG1_v_pre-BCG10_down	-0,659162379	0,020558266	0,594804894	-21521	MYCL	
chr1_84144173_84146537	pre-BCG1_v_pre-BCG10_down	-0,770703574	0,012366589	0,583420865	319460	TTLL7	
chr10_6140817_6141751	pre-BCG1_v_pre-BCG10_down	-0,596492092	0,023867073	0,60063625	9975	RBM17	
chr10_96270807_96271460	pre-BCG1_v_pre-BCG10_down	-0,759101416	0,00230029	0,544998581	-34440	HELLS	
chr11_33197863_33198328	pre-BCG1_v_pre-BCG10_down	-0,625573562	0,047875917	0,646675302	-15085	CSTF3	
chr12_10386640_10390138	pre-BCG1_v_pre-BCG10_down	-0,650107969	0,047313327	0,645879721	22985	GABARAPL1	
chr12_118358663_118359778	pre-BCG1_v_pre-BCG10_down	-0,618503236	0,025083125	0,60063625	47567	KSR2	
chr12_14385600_14386559	pre-BCG1_v_pre-BCG10_down	-0,753641639	0,036185825	0,626474973	-132536	ATF7IP	
chr12_15546470_15547122	pre-BCG1_v_pre-BCG10_down	-0,599186683	0,032939295	0,62614993	71465	PTPRO	
chr12_31251921_31252469	pre-BCG1_v_pre-BCG10_down	-0,620745497	0,024731492	0,60063625	25416	DDX11	
chr12_8989434_8991604	pre-BCG1_v_pre-BCG10_down	-0,791524434	0,003796001	0,548740748	15451	A2ML1	
chr13_98570871_98571394	pre-BCG1_v_pre-BCG10_down	-0,835667174	0,002874598	0,548740748	-34796	IPO5	
chr16_87490634_87491479	pre-BCG1_v_pre-BCG10_down	-0,68202229	0,033927276	0,626474973	34594	ZCCHC14	
chr17_18186002_18186641	pre-BCG1_v_pre-BCG10_down	-0,656352758	0,046284813	0,645206643	21898	MIEF2	
chr17_7851500_7851938	pre-BCG1_v_pre-BCG10_down	-0,774987418	0,017748352	0,594721648	16246	CNTROB	
chr19_50418781_50420147	pre-BCG1_v_pre-BCG10_down	-0,617572579	0,003075677	0,548740748	-12936	ATF5	
chr19_6996859_6998063	pre-BCG1_v_pre-BCG10_down	-0,714203377	0,016982617	0,594721648	-33128	MBD3L5	
chr2_142877514_142879767	pre-BCG1_v_pre-BCG10_down	-0,61281026	0,016816174	0,594721648	10629	LRP1B	
chr2_143128594_143130833	pre-BCG1_v_pre-BCG10_down	-0,651792349	0,031347673	0,623648633	-240444	LRP1B	
chr2_143248012_143248756	pre-BCG1_v_pre-BCG10_down	-0,802845886	0,022592999	0,599856373	-359114	LRP1B	
chr2_159515626_159516942	pre-BCG1_v_pre-BCG10_down	-0,606399224	0,001577781	0,544998581	-135545	DAPL1	
chr2_203706607_203710225	pre-BCG1_v_pre-BCG10_down	-0,588873166	0,033385114	0,626474973	27949	ICA1L	
chr21_14543894_14546545	pre-BCG1_v_pre-BCG10_down	-0,738720884	0,033879481	0,626474973	-437278	POTED	
chr21_17793651_17794173	pre-BCG1_v_pre-BCG10_down	-0,692761368	0,021596394	0,597025879	691568	USP25	
chr3_28292893_28294004	pre-BCG1_v_pre-BCG10_down	-0,583330429	0,027024569	0,607256117	10363	CMC1	
chr4_39030525_39032408	pre-BCG1_v_pre-BCG10_down	-0,687976873	0,004429759	0,548740748	2574	TMEM156	
chr5_150846511_150847193	pre-BCG1_v_pre-BCG10_down	-0,615021289	0,015149072	0,594721648	19695	SLC36A1	
chr5_58491289_58493150	pre-BCG1_v_pre-BCG10_down	-0,741564163	0,011261264	0,5762077	613353	RAB3C	
chr5_96896313_96896924	pre-BCG1_v_pre-BCG10_down	-0,722226679	0,008494528	0,548740748	-377655	RIOK2	
chr6_127899285_127901264	pre-BCG1_v_pre-BCG10_down	-0,674495853	0,007816329	0,548740748	1956	C6orf58	
chr6_156781504_156782711	pre-BCG1_v_pre-BCG10_down	-0,823521896	0,007097316	0,548740748	-316955	ARID1B	

chr6_158649979_158651155	pre-BCG1_v_pre-BCG10_down	-0,581363151	0,017123118	0,594721648	61183	GTF2H5	
chr7_33039359_33040256	pre-BCG1_v_pre-BCG10_down	-0,789710249	0,005050776	0,548740748	42791	FKBP9	
chr7_38251676_38253400	pre-BCG1_v_pre-BCG10_down	-0,894214286	0,015445648	0,594721648	34714	STARD3NL	
chr7_38302919_38304101	pre-BCG1_v_pre-BCG10_down	-0,804916855	0,002467339	0,544998581	85686	STARD3NL	
chr8_23230613_23231216	pre-BCG1_v_pre-BCG10_down	-0,724729047	0,018123245	0,594721648	30838	LOXL2	
chr9_130038378_130038894	pre-BCG1_v_pre-BCG10_down	-0,757030665	0,015427617	0,594721648	11831	GARNL3	
chrX_131812614_131813431	pre-BCG1_v_pre-BCG10_down	-0,604922928	0,001585819	0,544998581	-239305	MBNL3	
chrX_54921055_54921989	pre-BCG1_v_pre-BCG10_down	-0,676063086	0,005176935	0,548740748	-25722	TRO	

Supplementary Table 5 - List of selected candidate trained immunity genes.

The mechanism/pathway based on which this gene is important for trained immunity is displayed in the second column and the reference, if available, is shown in the third column.

Gene name	Mechanism/Pathway important for trained immunity (TI)	Reference for trained immunity
AIM2	Inflammasome signaling	
ASC/PYCARD/CARD5	Inflammasome signaling	Arts, R.J.W. et al., BCG Vaccination Protects against Experimental Viral Infection in Humans through the Induction of Cytokines Associated with Trained Immunity. <i>Cell host & microbe</i> 23, 2018.
ATG16L1	Autophagy	
ATG16L2	Autophagy	
ATG2B	Autophagy	Buffen, K. et al., Autophagy controls BCG-induced trained immunity and the response to intravesical BCG therapy for bladder cancer. <i>PLoS pathogens</i> 10, 2014.
ATG5	Autophagy	
ATG7	Autophagy	
CASP1	Inflammasome signaling	
CASP5	Inflammasome signaling	
EHMT2	Epigenetic enzyme	Mourits, V.P. et al., Lysine methyltransferase G9a is an important modulator of trained immunity. <i>Clinical & translational immunology</i> 10, 2021.
GBP1	Inflammasome signaling	
GBP2	Inflammasome signaling	
GBP3	Inflammasome signaling	
GBP4	Inflammasome signaling	
GBP5	Inflammasome signaling	
HK2	Glycolysis	Arts, R.J.W. et al., Immunometabolic Pathways in BCG-Induced Trained Immunity. <i>Cell reports</i> 17, 2016.
HNF1A	Myelopoiesis	Cirovic, B. et al., BCG Vaccination in Humans Elicits Trained Immunity via the Hematopoietic Progenitor Compartment. <i>Cell host & microbe</i> 28, 2020.
HNF1B	Myelopoiesis	Cirovic, B. et al., BCG Vaccination in Humans Elicits Trained Immunity via the Hematopoietic Progenitor Compartment. <i>Cell host & microbe</i> 28, 2020.

IL18	Ti cytokine	
IL1B	Ti cytokine	Arts, R.J.W. et al., BCG Vaccination Protects against Experimental Viral Infection in Humans through the Induction of Cytokines Associated with Trained Immunity. <i>Cell host & microbe</i> 23, 2018.
IL1RN	Ti cytokine	
IL32	Ti cytokine	Dos Santos, J.C. et al., β -Glucan-Induced Trained Immunity Protects against <i>Leishmania braziliensis</i> Infection: a Crucial Role for IL-32. <i>Cell reports</i> 28, 2019.
IL6	Ti cytokine	
KDM4A	Epigenetic enzyme	Moorlag, S. et al., An integrative genomics approach identifies KDM4 as a modulator of trained immunity. <i>Eur J Immunol</i> 2021.
KDM4B	Epigenetic enzyme	Moorlag, S. et al., An integrative genomics approach identifies KDM4 as a modulator of trained immunity. <i>Eur J Immunol</i> 2021.
KDM4C	Epigenetic enzyme	Moorlag, S. et al., An integrative genomics approach identifies KDM4 as a modulator of trained immunity. <i>Eur J Immunol</i> 2021.
KDM4D	Epigenetic enzyme	Moorlag, S. et al., An integrative genomics approach identifies KDM4 as a modulator of trained immunity. <i>Eur J Immunol</i> 2021.
KDM4E	Epigenetic enzyme	Moorlag, S. et al., An integrative genomics approach identifies KDM4 as a modulator of trained immunity. <i>Eur J Immunol</i> 2021.
LAMP2	Autophagy	
NLRP3	Inflammasome signaling	
NOD2/CARD15	Autophagy	
PFKP	Glycolysis	Arts, R.J.W. et al., Immunometabolic Pathways in BCG-Induced Trained Immunity. <i>Cell reports</i> 17, 2016.
RIPK2	Autophagy	
TNF	Ti cytokine	

Supplementary Table 6 - Table with the differentially expressed genes between pre-BCG1 and BCG6.

This table shows the differentially expressed genes at $p < 0.05$ between pre-BCG1 and BCG6. Candidate trained immunity genes are indicated in the last column.

Gene name	log2 Fold Change	p value	adjusted p value	Candidate trained immunity gene
FANCA	0,416164968	2,79E-05	0,019944468	
APOL2	0,392119005	5,05E-05	0,030298792	
GBP1	0,837182252	0,000106425	0,052781665	Yes
GBP2	0,535894975	0,000237511	0,114113007	Yes
SLAMF8	0,824175426	0,000273093	0,129189933	
ACE	0,814849641	0,000395597	0,176293017	
IRF9	0,403102363	0,000393838	0,176293017	
PSTPIP2	0,425863886	0,000403355	0,177182411	
AP000275.65	1,569202645	0,000428268	0,182900266	
ALPK1	0,484670341	0,000554252	0,227017741	
TGM2	0,709969574	0,000704876	0,277874771	
IL27	1,035307566	0,000805327	0,305716094	
KCNMA1	1,427699707	0,000833368	0,308737816	
C8orf76	0,37165149	0,000827852	0,308737816	
C1QA	0,784136216	0,000909738	0,326236012	
SDC3	0,679010653	0,000923039	0,326236012	
APOL3	0,425167377	0,000956946	0,330619403	
TAP1	0,38678848	0,001215249	0,406170553	
SPDYE2	-1,881858553	0,001232919	0,407645542	
FCGBP	-0,858008712	0,001278171	0,418111355	
JUN	-1,119329459	0,001344874	0,435300235	
ODF3B	0,662251968	0,001434222	0,459065053	
GBP5	0,676898788	0,00160993	0,505140205	Yes
MT2A	0,510167379	0,001789389	0,544771425	
SLC30A4	-0,608250308	0,001857706	0,560025368	
APOL4	1,002388629	0,001906898	0,565358661	
BATF2	0,987772806	0,001937874	0,566131453	
AL589988.1	-3,24698225	0,001963859	0,566131453	
C17orf81	0,465103748	0,002130619	0,601049521	
SERPING1	0,882433958	0,002439069	0,678374816	
C1QB	1,049365496	0,00262936	0,709212181	
MUC1	0,851786943	0,002740676	0,720282322	
AIM2	0,713404476	0,002734595	0,720282322	Yes
STAT1	0,523590248	0,0027902	0,727083529	
DDB2	0,378676649	0,002844875	0,735101394	
C2	0,858142626	0,002932122	0,745122465	
IRS1	-0,388456714	0,002909691	0,745122465	
IGFBP3	-0,524377716	0,003006993	0,751997231	
CCL3	-0,678866553	0,003008087	0,751997231	
FGFBP2	-0,541669259	0,003077319	0,763100596	
KLHDC7B	0,545207163	0,003205436	0,764061534	

GCH1	0,433329008	0,003261928	0,771546393	
RUFY4	0,626651041	0,003478501	0,808708187	
BOK	-0,857008397	0,003474398	0,808708187	
CD40	0,47463582	0,003779509	0,842145826	
C1QC	1,173979553	0,003921315	0,867457017	
ARRDC3	-0,399533063	0,004330665	0,931971002	
AKR1C3	-0,596546359	0,004276409	0,931971002	
HBA1	-1,453582641	0,004334185	0,931971002	
IL2RB	-0,519396504	0,004467671	0,954002865	
PDGFD	-0,590699808	0,004618538	0,972708439	
NCF1	0,39272474	0,00468607	0,980217368	
RP5-977B1.10	1,677033087	0,049074668	1	
MEF2BNB-MEF2B	1,248862831	0,023548968	1	
ANKRD22	1,09761395	0,008332145	1	
TBC1D3C	0,996891295	0,020485474	1	
ETV7	0,947300542	0,00555	1	
KREMEN1	0,883521368	0,0077558	1	
CDKN3	0,816848738	0,009116359	1	
CENPM	0,715971748	0,039455664	1	
EXOC3L1	0,707652082	0,022797635	1	
FAM20A	0,686287983	0,029008276	1	
FCGR1A	0,677957968	0,016560352	1	
NME2	0,676923434	0,008742964	1	
ITGA7	0,645611823	0,04749242	1	
TNNT1	0,634606854	0,013908199	1	
SEPTIN4	0,619245911	0,009684948	1	
FCGR1B	0,610630851	0,022187444	1	
PRSS21	0,606527046	0,012742105	1	
CD274	0,589720504	0,023818374	1	
LGALS3BP	0,58540446	0,018172071	1	
GPER	0,580884788	0,030727915	1	
HMGB3	0,568119229	0,049107076	1	
TNFSF10	0,56185307	0,010725483	1	
CDCA5	0,552782326	0,02692685	1	
CCDC154	0,545911996	0,049495278	1	
PLA2G4B	0,544689511	0,018914299	1	
ZNF222	0,524210862	0,029833271	1	
ZNF20	0,523429103	0,040410492	1	
EPSTI1	0,515936225	0,013113973	1	
LAP3	0,514206615	0,006674993	1	
GBP4	0,50391882	0,006976171	1	Yes
VAMP5	0,501162477	0,006757253	1	
SLC6A12	0,500340913	0,033414764	1	
C15orf52	0,4951153	0,035068023	1	
MARCO	0,491052503	0,017908252	1	

IL15RA	0,487243844	0,008562457	1
CDCA7	0,486726514	0,033914711	1
SLC26A1	0,479122701	0,017501327	1
CASP5	0,476573284	0,039961715	1
MB21D1	0,465239875	0,02401357	1
SAMD4A	0,464845301	0,032420175	1
SLC31A2	0,459762196	0,035448672	1
WARS	0,458540321	0,012393938	1
CLEC12B	0,454642725	0,014497235	1
NUSAP1	0,453901785	0,038290692	1
P2RY13	0,444467981	0,011625924	1
C9orf139	0,442046919	0,019929476	1
TYMP	0,440500161	0,005591969	1
MT-ATP6	0,432481895	0,039013272	1
TICAM2	0,427650408	0,018495703	1
UHRF1	0,427277685	0,017741661	1
EPS8L1	0,426598084	0,030550779	1
IRF1	0,424670196	0,014617206	1
S100A13	0,420386919	0,049248263	1
DDO	0,416633561	0,035031103	1
NAT1	0,413670028	0,032232423	1
RPGRIP1	0,413229016	0,029692081	1
PARP9	0,411534011	0,011503059	1
FSTL3	0,409229824	0,042162937	1
TNFAIP2	0,399135073	0,014081365	1
HSPA6	0,398426692	0,011541368	1
KCNMB1	0,393645458	0,012947058	1
MT-ND6	0,390070066	0,046631752	1
FANCL	0,388642912	0,027142752	1
ZNF684	0,387625487	0,01041037	1
MT-ND2	0,386072627	0,044502769	1
FAM26F	0,384404995	0,037197222	1
MT-CO1	0,381938213	0,029537893	1
ZMYND15	0,38091803	0,045315862	1
ECHDC3	0,377353262	0,046912018	1
TRIM69	0,376236471	0,027204276	1
J01415.25	0,375372852	0,035392278	1
CES4A	0,374279573	0,047361718	1
LRRC27	0,372686606	0,012191912	1
FAM176C	-0,372699564	0,021249875	1
CD247	-0,373601814	0,047762817	1
ST3GAL3	-0,377607622	0,037671208	1
SYNE2	-0,379180659	0,037297328	1
YPEL1	-0,381880614	0,025500207	1
ACACB	-0,383224259	0,040739728	1

MYBL1	-0,38719472	0,04464206	1
RP11-1000B6.4	-0,388639614	0,0468449	1
IKZF2	-0,399388604	0,021510074	1
CLIC3	-0,400131458	0,035843828	1
SBK1	-0,406436272	0,045781816	1
RP11-277P12.7	-0,410040371	0,022980627	1
TLE1	-0,41215121	0,033816508	1
ZFPM1	-0,41284894	0,01168682	1
GZMM	-0,413036446	0,049802174	1
FCRL6	-0,414475953	0,040292514	1
CCDC144A	-0,419136586	0,047712206	1
SLAIN1	-0,419191877	0,025081596	1
TKTL1	-0,433273247	0,022781026	1
RAB30	-0,434651822	0,040036936	1
CST7	-0,435674472	0,01922203	1
NCALD	-0,43658179	0,012586912	1
ZNF853	-0,439461289	0,037295084	1
RALGPS2	-0,439585199	0,014245521	1
NSG1	-0,4419114	0,029636123	1
TSPAN5	-0,443457068	0,025841639	1
NKG7	-0,443595085	0,019161666	1
BICD1	-0,446308637	0,006748931	1
APBA2	-0,446638838	0,043694812	1
BCL7A	-0,447556619	0,027998413	1
TGFBR3	-0,45011796	0,024936332	1
PRF1	-0,450913705	0,024223918	1
ODZ1	-0,453200436	0,015824294	1
DUSP14	-0,455604709	0,034462795	1
S1PR5	-0,458137919	0,020863878	1
HOPX	-0,458427845	0,020743564	1
KIAA1377	-0,458659193	0,03114167	1
BANK1	-0,460052878	0,032338396	1
PTCH1	-0,460556447	0,016763216	1
ZNF831	-0,460697733	0,02702505	1
SH2D1B	-0,461225575	0,00812831	1
CCL4	-0,463561883	0,039497886	1
SLFN12L	-0,472405125	0,031816351	1
CCNJL	-0,474170767	0,008047792	1
DLG3	-0,476414349	0,014885564	1
PKIG	-0,476434034	0,040815151	1
F2R	-0,488892189	0,014278129	1
TPD52	-0,489713857	0,038071167	1
TMEM182	-0,490816156	0,04734152	1
MYOM2	-0,492099626	0,041615676	1
LRFN3	-0,494504291	0,043369254	1

FAIM3	-0,499637977	0,038238886	1
PCDH1	-0,502047296	0,037726825	1
KLRD1	-0,504481521	0,01425441	1
SLC38A1	-0,509394109	0,029474403	1
AGAP1	-0,509692461	0,028713559	1
C1orf21	-0,510947176	0,011027812	1
DTHD1	-0,514596186	0,004913806	1
PRSS23	-0,515501534	0,017573282	1
MICAL3	-0,516296685	0,015747501	1
MAGEE1	-0,523746835	0,033274446	1
ZNF570	-0,526085188	0,016430441	1
NCR1	-0,529873842	0,014836874	1
BCL2	-0,536146943	0,023566452	1
TNFRSF13B	-0,541079191	0,025341118	1
PAWR	-0,551909136	0,024349633	1
ID3	-0,567827047	0,034610038	1
KLRB1	-0,571230226	0,004903743	1
CADM1	-0,573608916	0,041904879	1
ARL4D	-0,574269887	0,013595168	1
OSBPPL10	-0,576863528	0,015454784	1
LPL	-0,577805251	0,031316038	1
SEZ6L	-0,593641217	0,031822139	1
C14orf45	-0,620995817	0,009404158	1
FCRL2	-0,64213295	0,02215549	1
KIR3DL1	-0,651587879	0,01219294	1
NOS3	-0,65337981	0,020387454	1
KIR2DL1	-0,653937262	0,019597256	1
RNF165	-0,67222023	0,004987637	1
KLRC4	-0,695047506	0,033990308	1
ADAMTS1	-0,704489831	0,029959714	1
MANEAL	-0,708707868	0,005460479	1
ZNF365	-0,714988955	0,010056548	1
MYEOV	-0,7367308	0,041151876	1
HCAR2	-0,737938864	0,032048177	1
B3GNT7	-0,755433666	0,012924886	1
NT5E	-0,758367992	0,037755749	1
FCRL1	-0,806086183	0,013468328	1
FCRLA	-0,816093861	0,008902949	1
BEND5	-0,835404712	0,014744109	1
PAX5	-0,835450924	0,031484747	1
CD79A	-0,842368253	0,006208487	1
AKAP5	-0,848275099	0,011655695	1
GRIP1	-0,866412273	0,015946217	1
FAM203B	-0,922599113	0,034347834	1
CXCR5	-0,928303049	0,007193372	1

CA1	-1,034054431	0,021892299	1
ZNF415	-1,056847483	0,007692159	1
KCNG1	-1,096160008	0,017440004	1
CD200	-1,192987911	0,009404661	1
FOSB	-1,217341649	0,025144828	1
IL8	-1,349314992	0,014854739	1
HBA2	-1,571906696	0,008096242	1
SLC4A1	-1,60444022	0,031414864	1
HBB	-1,672919008	0,008461082	1

Supplementary Table 7 - Table with the differentially expressed genes between pre-BCG1 and pre-BCG7.

This table shows the differentially expressed genes at $p_{\text{adj}} < 0.05$ between pre-BCG1 and pre-BCG7. Candidate trained immunity genes are indicated in the last column.

Gene name	log2 Fold Change	p value	adjusted p value	Candidate trained immunity gene
RYR1	2,941	0,000117803	0,072446462	
ACE	0,874	0,000140314	0,082971722	
ITGA7	1,190	0,000215953	0,120733696	
HBA1	-1,855	0,000272809	0,136969217	
TCN1	-1,052	0,000326889	0,155547135	
HBA2	-2,062	0,000513276	0,225467342	
CTSG	-1,383	0,000660736	0,278314732	
DEFA3	-1,496	0,000748616	0,311070294	
HBB	-2,096	0,000974312	0,394199025	
PGLYRP1	-1,421	0,001210993	0,477395128	
CEACAM6	-1,532	0,001203513	0,477395128	
ELANE	-1,041	0,001850065	0,693751727	
CFL2	-0,701	0,002652792	0,971079608	
AREGB	2,247	0,032443113	1	
KCNMA1	1,272	0,002974942	1	
MEF2BNB-MEF2B	1,269	0,02137519	1	
SAP25	1,149	0,005258327	1	
OVCA2	0,965	0,046970215	1	
SAPCD1	0,946	0,033293913	1	
NME2	0,750	0,003645995	1	
MUC1	0,710	0,01302624	1	
FAM20A	0,708	0,024165881	1	
FPR2	0,614	0,023707981	1	
MAMDC4	0,592	0,002876706	1	
HES4	0,585	0,033228181	1	
TWF1	0,582	0,027081585	1	
SIGLEC11	0,576	0,049585346	1	
GBP1	0,569	0,008447504	1	Yes
RUFY4	0,566	0,008329557	1	
TGM2	0,553	0,008460209	1	
SLAMF8	0,545	0,016438939	1	
CCDC153	0,541	0,048089647	1	
ADORA3	0,523	0,040045555	1	
EFEMP2	0,522	0,018114543	1	
ODF3B	0,522	0,012071538	1	
AP000295,9	0,517	0,005486546	1	
C1QA	0,501	0,034607742	1	
SAP30	0,492	0,048799636	1	
S100A13	0,487	0,022434082	1	
AIM2	0,483	0,042747173	1	Yes
SLC26A1	0,469	0,020017057	1	

CASP5	0,461	0,047213855	1	Yes
MSR1	0,453	0,03842017	1	
DDO	0,445	0,024154433	1	
SAMD4A	0,432	0,046899458	1	
TAGLN	0,428	0,009172894	1	
EPST11	0,426	0,040747824	1	
RELL2	0,425	0,01457999	1	
SDC3	0,425	0,038277269	1	
HSPA6	0,424	0,007136701	1	
IL15RA	0,414	0,025549244	1	
CTSL1	0,413	0,049300247	1	
NAT1	0,410	0,033721274	1	
XAF1	0,405	0,00844103	1	
GALNT4	0,399	0,033197071	1	
P2RY6	0,393	0,041702275	1	
ADAMTSL4	0,393	0,019912378	1	
MYOF	0,391	0,038590773	1	
MAP3K6	0,391	0,014946439	1	
ITPKC	0,391	0,006776491	1	
TRIM69	0,378	0,026317866	1	
PLB1	0,378	0,015327207	1	
ECHDC3	0,378	0,046631846	1	
ACSL5	0,373	0,041736198	1	
FGFBP2	-0,383	0,036547248	1	
MXRA7	-0,384	0,035192129	1	
MSRB3	-0,387	0,049149542	1	
TIMM23B	-0,390	0,035140792	1	
TGFBR3	-0,401	0,045763291	1	
CDCA7L	-0,411	0,041833477	1	
CNR2	-0,416	0,041451689	1	
IL2RB	-0,419	0,021796056	1	
C20orf94	-0,421	0,044428167	1	
SLAIN1	-0,424	0,023593214	1	
NEDD4L	-0,426	0,018960637	1	
GNG7	-0,434	0,005636585	1	
KLHL11	-0,437	0,041508149	1	
RALGPS2	-0,437	0,014769466	1	
MLLT4	-0,456	0,011866502	1	
AKAP12	-0,462	0,042275449	1	
SPIN4	-0,463	0,019648875	1	
PEAK1	-0,467	0,025074986	1	
NCAM1	-0,474	0,033383214	1	
DLG3	-0,476	0,014970698	1	
IMMP1L	-0,481	0,032162565	1	
OSBPL10	-0,486	0,041137124	1	

ODZ1	-0,490	0,009195945	1
RGPD8	-0,490	0,041652867	1
ZNF530	-0,500	0,044470425	1
C1orf150	-0,511	0,027267936	1
COBLL1	-0,519	0,011564114	1
FCGBP	-0,521	0,049809413	1
CHCHD6	-0,523	0,011609497	1
GAMT	-0,526	0,024019948	1
CPA3	-0,538	0,019933671	1
CTD-2370N5,3	-0,548	0,007710109	1
STAP1	-0,565	0,039062657	1
PKIG	-0,566	0,015368835	1
MKL2	-0,578	0,023032849	1
FAM46C	-0,581	0,034520654	1
CEBPE	-0,582	0,037397591	1
MS4A2	-0,591	0,021189027	1
BOLA2B	-0,593	0,04410199	1
CCDC144A	-0,601	0,00472668	1
HRH4	-0,602	0,030961183	1
KIAA0125	-0,629	0,029173614	1
B3GNT7	-0,650	0,032271663	1
MPO	-0,665	0,004482082	1
BOK	-0,669	0,022048785	1
FCRL2	-0,679	0,015633107	1
CD79A	-0,683	0,026484315	1
KLRC4	-0,687	0,036115179	1
FCRLA	-0,695	0,025595649	1
CXCR5	-0,704	0,041310191	1
CYP4F3	-0,704	0,02310979	1
AKAP5	-0,707	0,035020594	1
FCRL1	-0,722	0,026794196	1
PAWR	-0,724	0,003336898	1
PHLDB2	-0,740	0,004978222	1
MS4A3	-0,749	0,003834872	1
ZNF682	-0,794	0,017502381	1
BPI	-0,848	0,032467668	1
PAX5	-0,861	0,026631795	1
OLR1	-0,880	0,045409412	1
AZU1	-0,932	0,011789709	1
MMP9	-0,933	0,007418439	1
ANXA3	-0,955	0,013815894	1
RNASE3	-1,025	0,010708942	1
ARG1	-1,029	0,031452281	1
PRTN3	-1,061	0,003816369	1
MMP8	-1,184	0,026781144	1

MYH3	-1,202	0,008838566	1
CHI3L1	-1,243	0,019414398	1
SLPI	-1,246	0,003432196	1
CA1	-1,275	0,005140457	1
DEFA4	-1,301	0,014181587	1
LCN2	-1,335	0,005350238	1
OLFM4	-1,365	0,010038908	1
CAMP	-1,457	0,003688937	1
LTF	-1,494	0,00594477	1
CRISP3	-1,501	0,00300253	1
DEFA1	-1,563	0,017337127	1
CEACAM8	-1,593	0,003724853	1
ALAS2	-1,668	0,010983346	1
SLC4A1	-1,990	0,007938291	1
HBG2	-2,243	0,004283171	1

Supplementary Table 8 – Maintained upregulated and downregulated genes.

This table shows the differentially expressed genes which were upregulated at BCG6 and remain upregulated at pre-BCG7, as well as the downregulated genes at BCG6 which remain downregulated at pre-BCG7 (all at $p_{\text{adj}} < 0.05$). Candidate trained immunity genes are indicated.

Genes that remain upregulated between BCG6 and Pre-BCG7	Candidate trained immunity gene
ACE	
AIM2	Yes
C1QA	
CASP5	Yes
DDO	
ECHDC3	
EPST11	
FAM20A	
GBP1	Yes
HSPA6	
IL15RA	
ITGA7	
KCNMA1	
MEF2BNB-MEF2B	
MUC1	
NAT1	
NME2	
ODF3B	
RUFY4	
S100A13	
SAMD4A	
SDC3	
SLAMF8	
SLC26A1	
TGM2	
TRIM69	
Genes that remain downregulated between BCG6 and Pre-BCG7	Candidate trained immunity gene
AKAP5	
B3GNT7	
BOK	
CA1	
CCDC144A	
CD79A	
CXCR5	
DLG3	
FCGBP	
FCRL1	
FCRL2	
FCRLA	

FGFBP2	
HBA1	
HBA2	
HBB	
IL2RB	
KLRC4	
ODZ1	
OSBPL10	
PAWR	
PAX5	
PKIG	
RALGPS2	
SLAIN1	
SLC4A1	
TGFBR3	

Supplementary Table 9 - Characteristics of NMIBC patients from the BlaZIB and UroLife studies that were part of the study into BCG exposure and respiratory infections.

	BCG-exposed	Partially BCG-exposed	BCG-unexposed	p-value for comparison*
Total n	109	298	250	-
Female sex (%)	15 (13.8)	49 (16.4)	52 (20.8)	0.208
Age at questionnaire (median (range))	71 (42-85)	70 (44-90)	70 (27-92)	0.411
Flu vaccination in previous 2 years (%)	72 (66.1)	189 (63.4)	164 (65.6)	0.823
BCG vaccination ever (%)	16 (14.7)	56 (18.8)	50 (20.0)	0.487
History of chronic lung disease (asthma, COPD, bronchitis, emphysema)	16 (14.7)	42 (14.1)	38 (15.2)	0.935
Never smoker (%)	17 (15.6)	59 (19.8)	55 (22.0)	0.408
Previous smoker (%)	79 (72.5)	216 (72.5)	169 (67.6)	-
Current smoker (%)	13 (11.9)	23 (7.7)	26 (10.4)	-

*Kruskal-Wallis test for age and Chi-square test other variables

Supplementary Table 10 - Results of the multivariable association analysis for BCG exposure and respiratory infections among NMIBC patients in the BlaZIB and UroLife studies.

	NMIBC BCG			NMIBC no BCG	Adjusted* ORs (95% CI) NMIBC patients		
	Total	Exposed	Partially exposed		Exposed versus no BCG	Partially exposed versus no BCG	BCG versus no BCG
Total	407	109	298	250	-	-	-
Pneumonia (%)	23 (5.7)	4 (3.7)	19 (6.4)	22 (8.8)	0.39 (0.13-1.18)	0.68 (0.36-1.32)	0.60 (0.32-1.12)
Bronchitis (%)	11 (2.7)	5 (4.6)	6 (2.0)	10 (4.0)	1.23 (0.40-3.80)	0.53 (0.19-1.51)	0.72 (0.29-1.75)
Laryngitis (%)	20 (4.9)	6 (5.5)	14 (4.7)	16 (6.4)	0.93 (0.35-2.51)	0.76 (0.36-1.62)	0.80 (0.40-1.61)
Flu (%)	72 (17.7)	19 (17.4)	53 (17.8)	50 (20.0)	0.89 (0.49-1.61)	0.87 (0.56-1.34)	0.87 (0.58-1.31)
Cold (%)	223 (54.8)	53 (48.6)	170 (57.0)	155 (62.0)	0.60 (0.38-0.95)	0.85 (0.60-1.20)	0.77 (0.56-1.07)
All above RI (%)	254 (62.4)	63 (57.8)	191 (64.1)	171 (68.4)	0.65 (0.40-1.04)	0.85 (0.59-1.22)	0.79 (0.56-1.11)

* Adjusted for age (continuous variable), sex (female versus male), smoking (3 categories), chronic lung disease (yes vs no), flu vaccination in 2018/2019 (yes vs no). CI=confidence interval. RI=respiratory infections.

Supplementary Table 11 - Characteristics of the Nijmegen Bladder Cancer Study population that received at least 5 BCG instillations and was included in the exome chip analyses for NMIBC recurrence and progression.

		n = 215 (%)
Gender	Male	189 (88.1)
	Female	26 (11.9)
Median age at diagnosis (range; in years)		65 (39 – 83)
Smoking status (cigarettes) at time of diagnosis	Never smoker	34 (15.8)
	Former smoker	109 (50.7)
	Current smoker	40 (18.6)
	Missing	32 (14.9)
Primary tumor stage¹		
	Ta	16 (7.4)
	Ta+CIS	17 (7.9)
	T1	83 (38.6)
	T1+CIS	46 (21.4)
	CIS	49 (22.8)
	Unknown	4 (1.9)
Primary tumor grade¹	Low grade	13 (6.0)
	High grade	200 (93.0)
	Unknown	2 (0.9)
BCG instillations	iBCG (≥5 instillations)	215 (100.0)
	iBCG + mBCG (≥7 instillations)	137 (63.7)
Recurrence²		79 (36.7)
Median time at risk for recurrence² (IQR; in years)		2.8 (1.2 – 5.0)
Progression²		47 (21.9)
Median time at risk for progression² (IQR; in years)		4.0 (2.1 – 5.0)
Progression to MIBC²		17 (7.9)
Median time at risk for progression to MIBC² (IQR; in years)		4.5 (2.4 – 5.0)
Median follow-up time (IQR; in years)		4.7 (2.9 – 8.5)

CIS = Carcinoma in situ; BCG = Bacillus Calmette-Guérin; iBCG = induction therapy of BCG; mBCG = maintenance therapy of BCG; IQR = interquartile range; 1 = highest tumor stage/grade based in transurethral resection of the (bladder) tumor (TUR) and reTUR combined. 2 = restricted to the first five years after diagnosis.

Supplementary Table 12 - Results of the association analysis of low and rare-frequency variants and clinical outcome in patients of the Nijmegen Bladder Cancer Study (NBCS).

The clinical outcomes which were assessed were recurrence free survival and progression free survival.

Each sub-table shows the candidate trained immunity genes and their association with RFS or PFS after 5 or more and 7 or more BCG instillations.

RFS=recurrence free survival. PFS=progression free survival.

Supplementary Table 12.1 - RFS and ≥ 5 BCG instillations.

Displays the genes that associate with recurrence free survival after 5 or more BCG instillations.

gene_name	p.value	Q	n.marker.test	n.indiv	df	npatients	nsnvs_incl_monom
AIM2	0,6668	-24,75979723	3	215	1,057379136	215	3
ATG16L1	0,1454	132,0898301	3	215	1,038824298	215	4
ATG16L2	1	-1,086464384	1	215	0,984934949	215	2
ATG2B	0,0552	97,7492291	9	215	1,431773137	215	19
ATG7	0,0518	103,4755519	3	215	1,360649517	215	6
CASP1	0,9941	-63,77052844	17	215	3,132342687	215	25
CASP5	0,3916	-4,601733516	5	215	2,388367352	215	10
EHMT2	0,92	-36,51371431	4	215	1,388883661	215	5
GBP1	0,9872	-29,65079869	5	215	1,858544486	215	9
GBP2	0,7278	-29,06109049	3	215	1,238003061	215	3
GBP3	0,7812	-80,66169322	4	215	1,450503533	215	5
GBP4	0,6805	-92,65114213	3	215	1,024674623	215	9
GBP5	0,2625	0,703323814	2	215	1,729617129	215	5
HK2	0,6194	-31,79680752	7	215	2,115140923	215	11
HNF1A	0,1993	155,1363473	9	215	1,52379629	215	11
HNF1B	0,3863	-12,36817055	3	215	1,230580783	215	3
IL18	0,3705	-0,651576851	7	215	2,593914192	215	8
IL1RN	0,5804	-23,88814133	2	215	1,014198219	215	3
IL32	1	-0,21718186	1	215	0,990179793	215	3
IL6	0,9394	-197,9905753	17	215	2,56983184	215	26
KDM4A	1	-27,82896042	2	215	1,095446347	215	6
KDM4B	0,341	-0,04469697	1	215	0,966828439	215	4
KDM4C	0,3043	41,91837758	9	215	5,674905477	215	11
KDM4D	0,753	-24,48704195	7	215	1,826573384	215	8
NLRP3	0,8646	-57,36367658	3	215	1,197414773	215	5
NOD2	0,4167	-17,53755037	14	215	2,245635429	215	23
PFKP	0,2341	11,30863118	5	215	1,319013323	215	7
RIPK2	0,5976	-6,938540745	1	215	1,015876256	215	2
TNF	0,336	126,3212538	127	215	28,81735127	215	202

Supplementary Table 12.2 - RFS and ≥ 7 BCG instillations.

Displays the genes that associate with recurrence free survival after 7 or more BCG instillations.

gene_name	p.value	Q	n.marker.test	n.indiv	df	npatients	nsnvs_incl_monom
AIM2	0,0781	33,65764805	2	137	1,100489021	137	3
ATG16L1	0,058	151,9812802	3	137	0,944930974	137	4
ATG16L2	1	-1,181467244	1	137	1,000094082	137	2
ATG2B	0,1165	26,59945526	8	137	1,508927714	137	19
ATG7	0,0521	59,55106554	2	137	1,19111002	137	6
CASP1	0,6011	-13,23106529	15	137	2,993560518	137	25
CASP5	0,5268	-13,73028304	5	137	2,533260981	137	10
EHMT2	0,6743	-14,17080557	4	137	1,254431329	137	5
GBP1	0,1929	8,401708316	5	137	1,867480934	137	9
GBP2	0,2868	2,605382105	3	137	1,558320155	137	3
GBP3	0,614	-28,43534132	4	137	1,444531064	137	5
GBP4	0,1745	39,0865001	3	137	0,97726995	137	9
GBP5	0,476	-0,514678761	2	137	1,86123812	137	5
HK2	0,8324	-23,86979026	6	137	2,10002091	137	11
HNF1A	0,6898	-96,21051718	9	137	1,49764708	137	11
HNF1B	0,0427	96,88458053	3	137	1,108303292	137	3
IL18	0,4928	-11,71938247	7	137	2,770039732	137	8
IL1RN	0,6515	-13,39071923	2	137	1,018522656	137	3
IL32	1	-0,160342383	1	137	0,999331758	137	3
IL6	0,3123	11,37240346	15	137	2,242202684	137	26
KDM4A	0,2429	3,661767252	2	137	1,07127914	137	6
KDM4C	0,5878	-27,97011101	9	137	5,715745233	137	11
KDM4D	0,7464	-11,92794231	6	137	1,874059787	137	8
NLRP3	1	-35,06664189	2	137	1,20817639	137	5
NOD2	0,6083	-20,31787809	13	137	2,166036649	137	23
PFKP	0,3695	-2,111171642	4	137	1,210588537	137	7
RIPK2	0,8329	-4,877370114	1	137	0,998522945	137	2
TNF	0,1967	181,7768161	118	137	24,36444595	137	202

Supplementary Table 12.3 - PFS and ≥ 5 BCG instillations.

Displays the genes that associate with progression free survival after 5 or more BCG instillations.

gene_name	p.value	Q	n.marker.test	n.indiv	df	npatients	nsnvs_incl_monom
AIM2	0,5732	-12,6009947	3	215	1,035972928	215	3
ATG16L1	0,2317	28,9698611	3	215	1,027726132	215	4
ATG16L2	0,0899	3,479819289	1	215	1,025741716	215	2
ATG2B	0,008	153,4451019	9	215	1,428609768	215	19
ATG7	0,4691	-11,10950223	3	215	1,305199874	215	6
CASP1	0,7624	-26,44204776	17	215	2,932521748	215	25
CASP5	0,7842	-33,1395669	5	215	2,377722736	215	10
EHMT2	0,0053	130,6742915	4	215	1,482973027	215	5
GBP1	0,8392	-13,65944477	5	215	1,995389007	215	9

GBP2	0,4482	-8,651714394	3	215	1,346006045	215	3
GBP3	0,8938	-53,75550237	4	215	1,387036502	215	5
GBP4	0,6771	-57,22545556	3	215	0,971590925	215	9
GBP5	0,5051	-0,576733035	2	215	2,01332749	215	5
HK2	0,8156	-26,83707069	7	215	2,211541382	215	11
HNF1A	0,1557	154,5863827	9	215	1,578299375	215	11
HNF1B	0,4879	-13,10416181	3	215	1,349908748	215	3
IL18	0,2266	30,61977526	7	215	2,4513315	215	8
IL1RN	0,5132	-12,09519724	2	215	1,007439781	215	3
IL32	1	-0,132201666	1	215	0,988142959	215	3
IL6	0,2526	40,66687734	17	215	2,388292864	215	26
KDM4A	1	-16,29219747	2	215	1,050785424	215	6
KDM4B	0,2735	0,190147994	1	215	0,986347146	215	4
KDM4C	0,2852	29,85031216	9	215	5,251538918	215	11
KDM4D	0,378	-3,044346329	7	215	1,751831719	215	8
NLRP3	0,3568	-4,713791167	3	215	1,121792775	215	5
NOD2	0,8412	-42,98981127	14	215	2,211179458	215	23
PFKP	0,6274	-10,74069042	5	215	1,47312329	215	7
RIPK2	1	-5,976955764	1	215	0,996566772	215	2
TNF	0,2839	125,9999296	127	215	23,89939862	215	202

Supplementary Table 12.4 - PFS and ≥7 BCG instillations.

Displays the genes that associate with progression free survival after 7 or more BCG instillations.

gene_name	p.value	Q	n.marker.test	n.indiv	df	npatients	nsnvs_incl_monom
AIM2	0,1546	9,063543939	2	137	1,009003898	137	3
ATG16L1	0,327	-0,571700501	3	137	1,064808361	137	4
ATG16L2	0,0715	4,704832233	1	137	0,970200993	137	2
ATG2B	0,0325	44,60020007	8	137	1,33311765	137	19
ATG7	0,3489	-1,559441784	2	137	1,261291555	137	6
CASP1	0,6829	-10,96007196	15	137	2,771220887	137	25
CASP5	0,7527	-15,41816113	5	137	2,438596936	137	10
EHMT2	5,00E-04	110,0870458	4	137	1,208050539	137	5
GBP1	0,4174	-1,58329662	5	137	2,029893373	137	9
GBP2	0,2807	2,059582358	3	137	1,651557473	137	3
GBP3	0,908	-26,42021847	4	137	1,473808013	137	5
GBP4	0,4963	-15,87192298	3	137	1,007245417	137	9
GBP5	0,371	-0,045487272	2	137	1,909587288	137	5
HK2	0,5669	-6,933682488	6	137	2,506234496	137	11
HNF1A	0,7746	-79,25404939	9	137	1,414903873	137	11
HNF1B	0,6077	-9,348132027	3	137	1,14339123	137	3
IL18	0,3446	1,579622961	7	137	2,446238991	137	8
IL1RN	0,5007	-5,833158786	2	137	0,981415478	137	3
IL32	1	-0,076845213	1	137	0,991893191	137	3
IL6	0,6251	-40,22948081	15	137	2,068295195	137	26
KDM4A	1	-7,581690349	2	137	1,015381476	137	6
KDM4C	0,6696	-26,06678812	9	137	4,870546662	137	11
KDM4D	0,462	-3,311955951	6	137	1,541533778	137	8
NLRP3	1	-20,25122951	2	137	1,152741114	137	5
NOD2	0,6842	-16,71527872	13	137	2,406863266	137	23
PFKP	0,3	0,477739781	4	137	1,238970309	137	7
RIPK2	0,9095	-3,376995089	1	137	0,981292619	137	2
TNF	0,5785	-50,09080898	118	137	18,97301254	137	202

Supplementary Table 13 - Primers that were used for ChIP-PCR analysis.

Gene	Primer name	Forward/Reverse	Sequence
<i>IL6</i>	IL-6 region 1	Forward	TCGTGCATGACTTCAGCTTT
<i>IL6</i>	IL-6 region 1	Reverse	GCGCTAAGAAGCAGAACCAC
<i>IL6</i>	IL-6 region 2	Forward	AGGGAGAGCCAGAACACAGA
<i>IL6</i>	IL-6 region 2	Reverse	GAGTTTCCTCTGACTCCATCG
<i>TNF</i>	TNF region 1	Forward	CAGGCAGTTCTCTTCCTCT
<i>TNF</i>	TNF region 1	Reverse	GCTTTCAGTGCTCATGGTGT
<i>TNF</i>	TNF region 2	Forward	AGAGGACCAGCTAAGAGGGA
<i>TNF</i>	TNF region 2	Reverse	AGCTTGTCAGGGGATGTGG
<i>IL1B</i>	IL1B region 1	Forward	AATCCAGAGCAGCCTGTTG
<i>IL1B</i>	IL1B region 1	Reverse	AACAGCGAGGGAGAACTGG
<i>IL1B</i>	IL1B region 2	Forward	CATGGCTGCTTCAGACACCT
<i>IL1B</i>	IL1B region 2	Reverse	ACACATGAACGTAGCCGTCA