

## **Supplementary Materials**

**Supplementary Table 1. Association of the identified SNPs with other metabolic traits**

**Supplementary Table 2. Association of BMI associated SNPs with BFM**

**Supplementary Table 3. Association of the BFP associated SNPs with BFM**

**Supplementary Figure 1. Linkage disequilibrium patterns of the associated SNPs**

**Supplementary Figure 2. Gene expression profiles in the GTEx project**

**Supplementary Figure 3. Chromatin state of the 20p11 locus**

Supplementary Table 1. Association of the identified SNPs with other metabolic traits

Trait	Study	<i>rs12481515</i>		<i>rs16981092</i>		<i>rs2069126</i>		<i>rs6046308</i>		<i>rs910983</i>	
		ED(t)	p	ED(a)	p	ED(a)	p	ED(t)	p	ED(t)	p
BFM	Current	-	<b>4.48E-08</b>	+	<b>3.49E-09</b>	-	<b>1.82E-09</b>	+	<b>3.74E-08</b>	+	<b>4.94E-09</b>
BFP	Lu et al.	-	0.09	+	0.26	-	0.22	+	<b>0.03</b>	+	0.51
BMI	GIANT	-	0.44	+	0.98	-	0.98	+	0.35	0	1.00
WHR	GIANT	+	0.99	+	0.91	+	0.83	-	0.50	+	0.90
fastingGlucose	MAGIC	+	0.31	-	0.27	+	0.48	-	0.43	-	0.29
2hrGlucose_BMI	MAGIC	+	0.06	-	0.59	+	0.68	-	0.34	-	0.49
LIPIDS	LIPIDS	+	0.16	-	<b>0.05</b>	+	<b>0.05</b>	-	0.08	NA	NA
T2D	DIAGRAM	+	0.41	-	0.17	+	0.19	-	0.35	0	0.99

Notes: BFM, body fat mass; BFP, body fat percentage; BMI, body mass index; WHR, waist-hip-ratio; fastingGlucose, fasting glucose; 2hrGhocose\_BMI, two hour glucose adjusted by BMI; LIPIDS, lipids; T2D, type 2 diabetes; ED, effect direction; Alleles in bracket were effect allele. Na, not available.

Supplementary Table 2. Association of BMI associated SNPs with BFM

SNP	EA	OA	BMI		BFM	
			ED	p	ED	p
<i>rs1000940</i>	G	A	+	1.00E-08	+	0.15
<i>rs10132280</i>	A	C	-	1.00E-11	+	0.38
<i>rs1016287</i>	T	C	+	4.00E-12	+	<b>0.04</b>
<i>rs10182181</i>	A	G	-	8.00E-26	-	0.17
<i>rs10733682</i>	A	G	+	2.00E-10	+	0.91
<i>rs10938397</i>	A	G	-	1.00E-40	-	0.28
<i>rs10968576</i>	G	A	+	2.00E-14	+	0.21
<i>rs11030104</i>	A	G	+	7.00E-30	-	0.68
<i>rs11057405</i>	A	G	-	1.00E-08	+	0.13
<i>rs11126666</i>	G	A	-	1.00E-09	-	0.94
<i>rs11165643</i>	C	T	-	1.00E-13	-	<b>0.01</b>
<i>rs11191560</i>	T	C	-	2.00E-09	+	0.20
<i>rs1121980</i>	A	G	+	4.00E-08	+	0.09
<i>rs11583200</i>	C	T	+	6.00E-09	+	<b>4.29E-03</b>
<i>rs1167827</i>	A	G	-	2.00E-10	+	0.55
<i>rs11688816</i>	A	G	-	2.00E-08	-	<b>0.04</b>
<i>rs11727676</i>	C	T	-	6.00E-09	-	0.72
<i>rs11847697</i>	T	C	+	4.00E-09	-	0.51
<i>rs12286929</i>	G	A	+	5.00E-13	-	0.56
<i>rs12401738</i>	A	G	+	1.00E-10	+	0.18
<i>rs12429545</i>	G	A	-	3.00E-13	-	0.81
<i>rs12446632</i>	A	G	-	2.00E-19	-	<b>0.05</b>
<i>rs12566985</i>	G	A	+	2.00E-15	+	0.36
<i>rs12885454</i>	C	A	+	9.00E-11	+	0.59
<i>rs12940622</i>	A	G	-	4.00E-10	-	0.88
<i>rs12970134</i>	A	G	+	1.00E-12	+	0.31
<i>rs13021737</i>	A	G	-	5.00E-54	-	<b>0.01</b>
<i>rs13078960</i>	T	G	-	1.00E-14	+	0.28
<i>rs13107325</i>	C	T	-	1.00E-12	-	0.15
<i>rs13191362</i>	A	G	+	1.00E-09	-	0.19
<i>rs13201877</i>	A	G	-	4.00E-08	+	0.53
<i>rs1441264</i>	A	G	+	3.00E-08	+	0.20
<i>rs1460676</i>	T	C	-	5.00E-08	+	0.31
<i>rs1516725</i>	T	C	-	1.00E-24	-	0.38
<i>rs1528435</i>	T	C	+	5.00E-09	+	0.39
<i>rs1558902</i>	A	T	+	1.00E-156	+	<b>0.04</b>
<i>rs16851483</i>	G	T	-	2.00E-10	-	0.14
<i>rs16907751</i>	C	T	+	4.00E-08	+	0.80
<i>rs16951275</i>	C	T	-	2.00E-18	+	0.39
<i>rs17001654</i>	C	G	-	5.00E-09	+	0.48

<i>rs17024393</i>	C	T	+	7.00E-14	+	0.59
<i>rs17094222</i>	C	T	+	2.00E-11	+	0.71
<i>rs17203016</i>	G	A	+	3.00E-08	+	0.36
<i>rs17405819</i>	C	T	-	1.00E-11	-	0.20
<i>rs17724992</i>	A	G	+	8.00E-09	-	0.91
<i>rs17782313</i>	C	T	+	3.00E-15	+	0.47
<i>rs1808579</i>	T	C	-	1.00E-08	-	0.76
<i>rs1928295</i>	C	T	-	3.00E-11	+	0.63
<i>rs2033732</i>	C	T	+	5.00E-08	+	0.43
<i>rs205262</i>	A	G	-	2.00E-10	-	0.36
<i>rs2075650</i>	A	G	+	3.00E-09	-	0.96
<i>rs2080454</i>	A	C	-	9.00E-09	-	0.89
<i>rs2112347</i>	G	T	-	2.00E-17	+	0.63
<i>rs2121279</i>	T	C	+	2.00E-08	+	0.82
<i>rs2176040</i>	G	A	-	1.00E-08	-	<b>2.66E-04</b>
<i>rs2176598</i>	T	C	+	3.00E-08	+	0.47
<i>rs2207139</i>	G	A	+	8.00E-31	+	0.47
<i>rs2245368</i>	T	C	-	3.00E-08	+	0.40
<i>rs2287019</i>	C	T	+	2.00E-18	+	0.94
<i>rs2365389</i>	C	T	+	1.00E-10	-	0.41
<i>rs2568958</i>	G	A	-	1.00E-11	-	<b>0.01</b>
<i>rs2650492</i>	A	G	+	1.00E-09	+	1.00
<i>rs2820292</i>	A	C	-	2.00E-10	-	0.77
<i>rs2836754</i>	C	T	+	2.00E-08	+	0.11
<i>rs29941</i>	A	G	-	7.00E-12	+	0.11
<i>rs3101336</i>	T	C	-	3.00E-26	-	<b>0.01</b>
<i>rs3736485</i>	A	G	+	7.00E-09	+	0.24
<i>rs3810291</i>	A	G	+	6.00E-16	+	0.65
<i>rs3817334</i>	C	T	-	1.00E-17	+	0.99
<i>rs3849570</i>	A	C	+	2.00E-08	+	0.62
<i>rs3888190</i>	A	C	+	3.00E-25	-	0.98
<i>rs4256980</i>	G	C	+	8.00E-12	+	0.55
<i>rs4740619</i>	T	C	+	5.00E-09	+	0.32
<i>rs492400</i>	T	C	-	7.00E-09	+	0.44
<i>rs543874</i>	G	A	+	2.00E-40	+	0.21
<i>rs6091540</i>	C	T	+	2.00E-11	+	0.47
<i>rs62033400</i>	G	A	+	2.00E-14	+	<b>0.05</b>
<i>rs6265</i>	C	T	+	5.00E-10	+	0.96
<i>rs6465468</i>	G	T	-	5.00E-08	-	0.91
<i>rs6477694</i>	C	T	+	2.00E-08	-	0.53
<i>rs6499640</i>	A	G	+	4.00E-13	+	0.54
<i>rs6567160</i>	C	T	+	7.00E-59	+	0.59
<i>rs657452</i>	A	G	+	2.00E-13	+	<b>0.01</b>
<i>rs6804842</i>	A	G	-	8.00E-10	-	0.20

<i>rs7138803</i>	G	A	-	5.00E-26	-	<b>0.01</b>
<i>rs7141420</i>	T	C	+	9.00E-15	-	0.77
<i>rs7164727</i>	T	C	+	4.00E-09	-	0.79
<i>rs7239883</i>	G	A	+	2.00E-08	+	<b>0.03</b>
<i>rs7243357</i>	G	T	-	9.00E-09	-	0.41
<i>rs7498665</i>	G	A	+	3.00E-10	+	1.00
<i>rs7561317</i>	A	G	-	4.00E-17	-	<b>0.01</b>
<i>rs758747</i>	C	T	-	2.00E-10	-	0.10
<i>rs7599312</i>	G	A	+	5.00E-11	+	0.44
<i>rs7647305</i>	T	C	-	7.00E-11	-	0.39
<i>rs7715256</i>	G	T	+	9.00E-09	+	0.34
<i>rs7899106</i>	A	G	-	1.00E-08	-	0.52
<i>rs7903146</i>	T	C	-	1.00E-12	+	0.37
<i>rs8050136</i>	A	C	+	1.00E-47	+	<b>0.04</b>
<i>rs925946</i>	T	G	+	9.00E-10	+	0.64
<i>rs929641</i>	A	G	+	5.00E-08	+	0.59
<i>rs9374842</i>	T	C	+	7.00E-09	+	<b>0.05</b>
<i>rs9400239</i>	C	T	+	2.00E-08	+	0.39
<i>rs9540493</i>	G	A	-	4.00E-09	-	0.89
<i>rs977747</i>	T	G	+	2.00E-08	+	0.56
<i>rs9914578</i>	G	C	+	2.00E-08	-	0.83
<i>rs9925964</i>	G	A	-	9.00E-11	-	<b>3.66E-04</b>
<i>rs9939609</i>	A	T	+	2.00E-20	+	0.06

Notes: SNPs with inconsistent effect directions were marked in gray. Nominally significant

p-values in BFM were marked in bold.

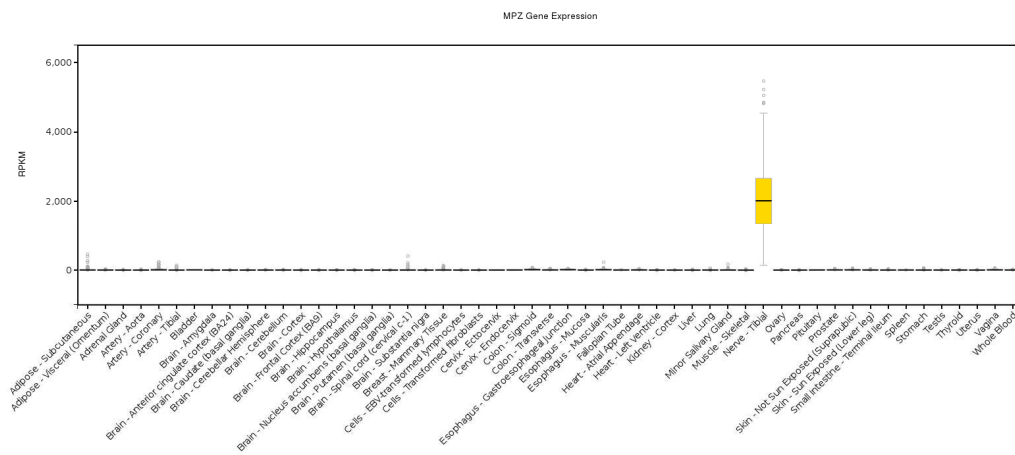
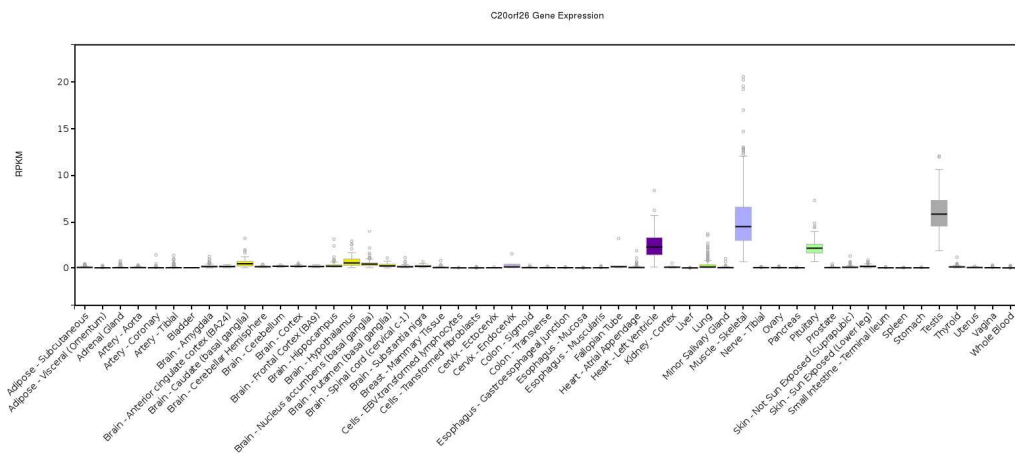
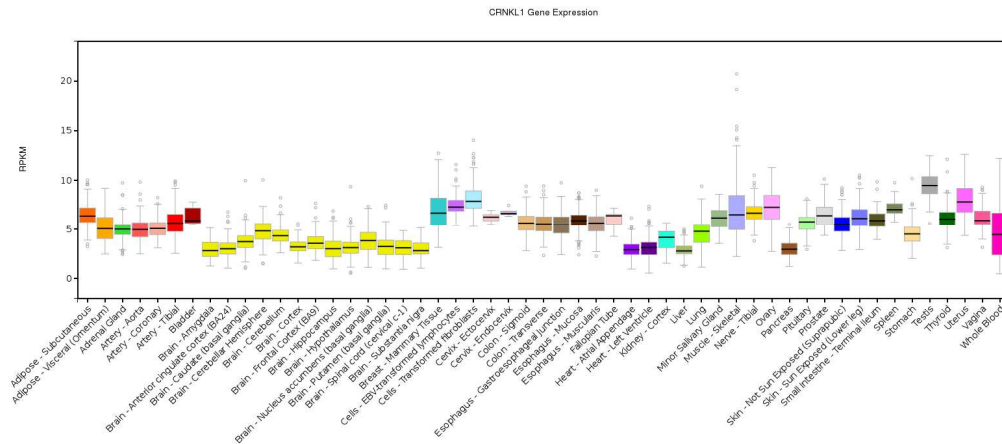
Supplementary Table 3. Association of the BFP associated SNPs with BFM

SNP	EA	OA	BFP		BFM	
			ED	p	ED	p
<i>rs1558902</i>	A	T	+	3.80E-27	+	<b>0.04</b>
<i>rs2943652</i>	C	T	+	1.50E-12	+	<b>4.17E-04</b>
<i>rs6567160</i>	C	T	+	1.30E-10	+	0.59
<i>rs6755502</i>	C	T	+	1.40E-10	+	<b>0.01</b>
<i>rs6738627</i>	A	G	+	5.70E-09	+	<b>3.42E-03</b>
<i>rs693839</i>	C	T	+	6.60E-09	+	0.25
<i>rs6857</i>	C	T	+	6.80E-09	-	0.40
<i>rs4788099</i>	G	A	+	1.20E-08	-	1.00
<i>rs9906944</i>	C	T	+	2.90E-08	+	0.08
<i>rs543874</i>	G	A	+	4.50E-08	+	0.21
<i>rs2943650</i>	C	T	+	6.00E-09	+	<b>3.40E-04</b>
<i>rs534870</i>	G	A	+	3.20E-08	+	0.39
<i>rs8050136</i>	A	C	+	5.60E-25	+	<b>0.04</b>









Supplementary Figure 3. Chromatin state of the 20p11 locus

