

**Table S7.** Positional Gene Enrichment (PGE) for metabolic syndrome in old men. Muscle chromosomal regions significantly enriched in genes differentially expressed with metabolic syndrome

									Enriched Region			chromosome size (bp)	Differentially expressed genes
Chromosome	band	start of region	end of region	p-value	p-value adj	Common elements	Total elements	Enrichment	size (bp)	total size (bp)	%bp of chromosome		
1	p34	35671678	38243830	0.001352	0.024448	3	38	7.9%	2572152				FHL3 KIAAO319L MRPS15
1	p33	47261827	51198524	0.00374	0.024448	2	16	12.5%	3936697	6508849	2.7	2.5E+08	CYP4X1 FAF
2	q11	159800558	160765009	0.000677	0.021324	2	7	28.6%	964451				ITGB6 WDSUB1
2	q24	97628953	105082849	0.02328	0.049437	2	41	4.9%	7453896	8418347	3.5	2.4E+08	COX5B MRPS9
3	q24	150374067	150578258	9.82E-05	0.009278	2	3	66.7%	204191	204191	0.1	2.0E+08	CP TM4SF1
4	q25	107036054	113582216	0.00904	0.031114	2	25	8.0%	6546162	6546162	3.4	1.9E+08	ALPK1 NPNT
5	q13-q23	73958990	127553278	0.01058	0.033326	4	148	2.7%	53594288				C5ORF13 ENC1 SLC12A2 THBS4
5	q13-q23	73958990	79414866	0.016346	0.040651	2	34	5.9%		53594288	29.6	1.8E+08	ENC1 THBS4
6	p23	13898999	15630232	0.000196	0.012324	2	4	50.0%	1731233				CCDC90A JARID2
6	q25	155096151	157572093	0.000325	0.015347	2	5	40.0%	2475942	4207175	2.5	1.7E+08	ARID1B TIAM2
7	q32	127668567	132417390	0.013701	0.036472	2	31	6.5%	4748823	4748823	3.0	1.6E+08	CHCHD3 LEP
8	q24	124094769	125631401	0.004223	0.024939	2	17	11.8%	1536632	1536632	1.1	1.5E+08	DERL1 NDUF9
10	q23	99427171	100017997	0.000899	0.024279	2	8	25.0%	590826	590826	0.4	1.4E+08	AVPI1 LOXL4
11	q14	82582939	94603894	0.002659	0.024448	3	48	6.3%	12020955				ANKRD42 PRSS23 SESN3
11	q14	82582939	86199917	0.003285	0.024448	2	15	13.3%		12020955	8.9	1.3E+08	ANKRD42 PRSS23
14	q23	68325077	68515747	3.28E-05	0.006209	2	2	100.0%	190670	190670	0.2	1.1E+08	ACTN1 ZFP36L1
19	p13	17323264	18149927	0.007681	0.031114	2	23	8.7%	826663	826663	1.3	6.4E+07	IFI30 PLVAP
X	q28	152413591	153368194	0.020182	0.044874	2	38	5.3%	954603	954603	0.6	1.5E+08	BGN UBL4A