**Supplementary Information on Genes**

*BRAP* (BRCA1-associated protein) is a protein coding gene. *BRCA1* is breast cancer susceptibility gene I [1]. In previous reports, *BRAP* was identified as a galectin-2-binding protein and was associated with myocardial infarction in Asian populations [2]. It has also been reported that unsaturated fatty acids derived from fish intake are associated with decreased breast cancer risk [3]. In another previous study, *BRAP* was associated with obesity [4], chronic kidney diseases [5] and blood pressure [6]. Rs2074356 is located in the intron of the *HECTD4* gene. *HECTD*4 is HECT domain E3 ubiquitin protein ligase 4, a member of the ubiquitin ligase family. *HECTD4* may encode E3 ubiquitin protein ligase. In previous studies, *HECTD4* was associated with blood pressure [7], thoracic-to-hip circumference ratio [8], and kidney function-related traits [9]. Rs11066015 is located in the intron of the *ACAD10* gene. This gene encodes a member of the acyl-CoA dehydrogenase family of enzymes (ACADs) that participate in the beta-oxidation of fatty acids in mitochondria [10]. In previous studies, *ACAD10* was associated with blood pressure [11], coronary artery disease [12] and type 2 diabetes [13]. *MAPKAPK5* is mitogen-activated protein kinase-activated protein kinase 5. This gene is a tumor suppressor and member of the serine/threonine kinase family [14]. In response to cellular stress and pro-inflammatory cytokines, this kinase is activated through its phosphorylation by MAP kinases, including *MAPK1/ERK, MAPK14/p38-alpha*, and *MAPK11/ p38-beta*. Rs11066132 is located in the intron of the *NAA25* gene. *NAA25* is N (alpha)-acetyltransferase 25, a NatB auxiliary subunit.

Among the above reports on associations between genes and diseases, most of them were cross-sectional, or case control studies [2,3-8, 12, 14], one of them was a meta-analysis. In GWAS, LD hinders the identification of causal variants at risk loci, there are often tens of hundreds of variants tightly linked to the reported associated SNP, thus, interpretation of these results of associations between genes and diseases should be careful.

**References**

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