

Table S1. Characteristics and distributions of the traits in the study population.

Stage	Genotyping platform	No. subjects	Age (mean \pm SD)	No. female (%)	CPD (mean \pm SD)
GWAS set*	Illumina HumanHap 610K	11,696	62.8 \pm 11.1	2,296 (19.7)	24.6 \pm 16.8
Replication set [†]	Illumina OmniExpress II	5,462	55.3 \pm 15.1	1,390 (25.3)	23.2 \pm 15.3

* Subjects consisted of Japanese patients in 19 disease groups (not mutually exclusive) as follows: Colorectal cancer ($N=1286$), Breast cancer ($N=335$), Prostate cancer ($N=869$), Lung cancer ($N=997$), Gastric cancer ($N=1,167$), Diabetes ($N=3,169$), Atherosclerosis obliterans (ASO) ($N=721$), Arrhythmia ($N=1,265$), Cerebral infarction ($N=1,180$), Myocardial infarction ($N=1,651$), Gallbladder and Bile duct carcinoma ($N=55$), Pancreas cancer ($N=107$), Drug eruption (Drug-induced hypersensitivity syndrome) ($N=38$), Rheumatoid arthritis ($N=590$), Amyotrophic lateral sclerosis (ALS) ($N=4$), Liver cancer (Hepatocellular carcinoma) ($N=705$), Liver cirrhosis ($N=952$), Osteoporosis ($N=211$), Uterine myoma (Myoma uteri) ($N=409$)

[†] Subjects consisted of Japanese patients in 16 disease groups (not mutually exclusive) as follows: Diabetes ($N=511$), Bronchial asthma ($N=241$), Basedow's disease ($N=800$), Cerebral infarction ($N=246$), Cerebral aneurysm ($N=599$), Emphysema (Chronic obstructive pulmonary disease; COPD) ($N=982$), Atopic dermatitis ($N=443$), Hyperlipidemia ($N=583$), Arrhythmia ($N=237$), Cataract ($N=329$), Urolithiasis ($N=650$), Glaucoma ($N=363$), Epilepsy ($N=653$), Esophageal cancer ($N=705$), Uterine body cancer ($N=125$), Nephrotic syndrome ($N=320$)