

Supplementary Results

Supplementary Table 1. Summary of traits in the PheWAS database

Category	Trait
Anthropometric	Standing height
Anthropometric	Birth weight
Anthropometric	Birth weight of first child
Anthropometric	Sitting height ratio
Anthropometric	Overweight
Anthropometric	Childhood obesity
Anthropometric	Body mass index (BMI)
Autoimmune/inflammatory	Celiac disease
Autoimmune/inflammatory	Paget's disease
Autoimmune/inflammatory	Non-cancer illness code, self-reported: asthma
Autoimmune/inflammatory	Non-cancer illness code, self-reported: eczema/dermatitis
Autoimmune/inflammatory	Neuroblastoma
Autoimmune/inflammatory	Multiple sclerosis
Autoimmune/inflammatory	Systemic lupus erythematosus
Autoimmune/inflammatory	Rheumatoid arthritis
Behavioural	Smoking status: Current
Behavioural	Ever smoked
Behavioural	Number of cigarettes currently smoked daily (current cigarette smokers)
Behavioural	Risk taking
Behavioural	Sleep duration
Behavioural	Alcohol intake frequency.
Behavioural	Past tobacco smoking
Behavioural	Difficulty not smoking for 1 day
Behavioural	Number of cigarettes previously smoked daily
Behavioural	Light smokers at least 100 smokes in lifetime
Behavioural	Smoking status: Previous
Behavioural	Time from waking to first cigarette
Behavioural	Chronotype
Behavioural	Morning/evening person (chronotype)
Behavioural	Maternal smoking around birth
Behavioural	Current tobacco smoking
Cardiovascular	Blood clot DVT bronchitis emphysema asthma rhinitis eczema allergy diagnosed by doctor: Blood clot in the leg (DVT)
Cardiovascular	Vascular/heart problems diagnosed by doctor: High blood pressure
Cardiovascular	Diastolic blood pressure automated reading
Cardiovascular	Pulse rate
Cardiovascular	Systolic blood pressure automated reading
Cardiovascular	Blood clot DVT bronchitis emphysema asthma rhinitis eczema allergy diagnosed by doctor: Blood clot in the lung

Cardiovascular	Eye problems/disorders: Diabetes related eye disease
Cardiovascular	Diabetes diagnosed by doctor
Cardiovascular	Vascular/heart problems diagnosed by doctor: Angina
Cardiovascular	Pulse rate automated reading
Cardiovascular	Vascular/heart problems diagnosed by doctor: Heart attack
ICD10 codes	Diagnoses - main ICD10: M21 Other acquired deformities of limbs
ICD10 codes	Underlying (primary) cause of death: ICD10: J84.1 Other interstitial pulmonary diseases with fibrosis
ICD10 codes	Diagnoses - main ICD10: B37 Candidiasis
ICD10 codes	Diagnoses - main ICD10: S76 Injury of muscle and tendon at hip and thigh level
ICD10 codes	Diagnoses - main ICD10: C44 Other malignant neoplasms of skin
ICD10 codes	Diagnoses - main ICD10: I21 Acute myocardial infarction
ICD10 codes	Diagnoses - main ICD10: R14 Flatulence and related conditions
ICD10 codes	Diagnoses - main ICD10: K76 Other diseases of liver
ICD10 codes	Diagnoses - main ICD10: F43 Reaction to severe stress and adjustment disorders
ICD10 codes	Diagnoses - main ICD10: K57 Diverticular disease of intestine
ICD10 codes	Diagnoses - main ICD10: N40 Hyperplasia of prostate
ICD10 codes	Diagnoses - main ICD10: L03 Cellulitis
ICD10 codes	Diagnoses - main ICD10: K80 Cholelithiasis
ICD10 codes	Diagnoses - main ICD10: I25 Chronic ischaemic heart disease
ICD10 codes	Diagnoses - main ICD10: Z80 Family history of malignant neoplasm
ICD10 codes	Diagnoses - main ICD10: I20 Angina pectoris
ICD10 codes	Diagnoses - main ICD10: I30 Acute pericarditis
ICD10 codes	Underlying (primary) cause of death: ICD10: E85.4 Organ-limited amyloidosis
ICD10 codes	Diagnoses - main ICD10: N20 Calculus of kidney and ureter
ICD10 codes	Diagnoses - main ICD10: D25 Leiomyoma of uterus
ICD10 codes	Diagnoses - main ICD10: E04 Other non-toxic goitre
ICD10 codes	Diagnoses - main ICD10: G56 Mononeuropathies of upper limb
ICD10 codes	Diagnoses - main ICD10: R31 Unspecified haematuria
ICD10 codes	Diagnoses - main ICD10: J33 Nasal polyp
ICD10 codes	Diagnoses - main ICD10: I83 Varicose veins of lower extremities
ICD10 codes	Diagnoses - main ICD10: I10 Essential (primary) hypertension
ICD10 codes	Diagnoses - main ICD10: M72 Fibroblastic disorders
ICD10 codes	Diagnoses - main ICD10: K40 Inguinal hernia
ICD10 codes	Diagnoses - main ICD10: I80 Phlebitis and thrombophlebitis
ICD10 codes	Diagnoses - main ICD10: N81 Female genital prolapse
ICD10 codes	Diagnoses - main ICD10: H26 Other cataract
ICD10 codes	Diagnoses - main ICD10: N19 Unspecified renal failure
ICD10 codes	Diagnoses - main ICD10: O75 Other complications of labour and delivery not elsewhere classified
ICD10 codes	Diagnoses - main ICD10: I48 Atrial fibrillation and flutter

ICD10 codes	Diagnoses - main ICD10: D12 Benign neoplasm of colon rectum anus and anal canal
Miscellaneous	Heel bone mineral density (BMD) T-score automated
Miscellaneous	Reason for glasses/contact lenses: For just reading/near work as you are getting older (called 'presbyopia')
Miscellaneous	Qualifications: College or University degree
Miscellaneous	Had menopause
Miscellaneous	Qualifications: A levels/AS levels or equivalent
Miscellaneous	Overall health rating
Miscellaneous	Daytime dozing / sleeping (narcolepsy)
Miscellaneous	Eye problems/disorders: Cataract
Miscellaneous	Age at last live birth
Miscellaneous	Number of live births
Miscellaneous	Non-cancer illness code, self-reported: osteoarthritis
Miscellaneous	Hearing difficulty/problems with background noise
Miscellaneous	Zinc
Miscellaneous	Chest pain or discomfort
Miscellaneous	Sodium in urine
Miscellaneous	Qualifications: CSEs or equivalent
Miscellaneous	Handedness (chirality/laterality): Left-handed
Miscellaneous	Iron
Miscellaneous	Bring up phlegm/sputum/mucus on most days
Miscellaneous	Wheeze or whistling in the chest in last year
Miscellaneous	Mouth/teeth dental problems: Mouth ulcers
Miscellaneous	Qualifications: Other professional qualifications eg: nursing teaching
Miscellaneous	Other serious medical condition/disability diagnosed by doctor
Miscellaneous	Non-cancer illness code, self-reported: gout
Miscellaneous	Forced vital capacity (FVC)
Miscellaneous	Age when periods started (menarche)
Miscellaneous	Peak expiratory flow (PEF)
Miscellaneous	Mouth/teeth dental problems: Dentures
Miscellaneous	Age at first live birth
Miscellaneous	Heel bone mineral density (BMD) T-score automated (right)
Miscellaneous	Ferritin
Miscellaneous	Long-standing illness disability or infirmity
Miscellaneous	Heel bone mineral density (BMD) T-score automated (left)
Miscellaneous	Eye problems/disorders: Glaucoma
Miscellaneous	Qualifications: O levels/GCSEs or equivalent
Miscellaneous	Reason for glasses/contact lenses: For short-sightedness i.e. only or mainly for distance viewing such as driving cinema etc (called 'myopia')
Miscellaneous	Hearing difficulty/problems: Yes
Miscellaneous	Forced expiratory volume in 1-second (FEV1)
Miscellaneous	Length of menstrual cycle

Miscellaneous	Started insulin within one year diagnosis of diabetes
Miscellaneous	Doctor diagnosed hayfever or allergic rhinitis
Miscellaneous	Maximum heart rate during fitness test
Non-cancer illness	Non-cancer illness code self-reported: pulmonary embolism +/- dvt
Non-cancer illness	Non-cancer illness code self-reported: type 2 diabetes
Non-cancer illness	Non-cancer illness code self-reported: deep venous thrombosis (dvt)
Non-cancer illness	Non-cancer illness code self-reported: hypertension
Non-cancer illness	Number of self-reported non-cancer illnesses
Non-cancer illness	Non-cancer illness code self-reported: vitiligo
Non-cancer illness	Non-cancer illness code self-reported: migraine
Non-cancer illness	Non-cancer illness code self-reported: psoriasis
Non-cancer illness	Non-cancer illness code self-reported: ankylosing spondylitis
Non-cancer illness	Non-cancer illness code self-reported: polio / poliomyelitis
Non-cancer illness	Non-cancer illness code self-reported: hypertrophic cardiomyopathy (hcm / hocm)
Non-cancer illness	Non-cancer illness code self-reported: malabsorption/coeliac disease
Non-cancer illness	Non-cancer illness code self-reported: heart attack/myocardial infarction
Non-cancer illness	Non-cancer illness code self-reported: angina
Non-cancer illness	Non-cancer illness code self-reported: cholelithiasis/gall stones
Non-cancer illness	Non-cancer illness code self-reported: osteoporosis
Non-cancer illness	Non-cancer illness code self-reported: hyperthyroidism/thyrototoxicosis
Non-cancer illness	Non-cancer illness code self-reported: kidney stone/ureter stone/bladder stone
Non-cancer illness	Non-cancer illness code self-reported: glaucoma
Non-cancer illness	Non-cancer illness code self-reported: pneumothorax
Non-cancer illness	Non-cancer illness code self-reported: pernicious anaemia
Non-cancer illness	Non-cancer illness code self-reported: high cholesterol
Non-cancer illness	Non-cancer illness code self-reported: nasal polyps
Non-cancer illness	Non-cancer illness code self-reported: hypopituitarism
Non-cancer illness	Non-cancer illness code self-reported: enlarged prostate
Non-cancer illness	Non-cancer illness code self-reported: uterine fibroids
Non-cancer illness	Non-cancer illness code, self-reported: hypothyroidism/myxoedema
Psychiatric/neurological	Putamen volume
Psychiatric/neurological	Bulimia nervosa
Psychiatric/neurological	PGC cross-disorder traits
Psychiatric/neurological	Suffer from 'nerves'

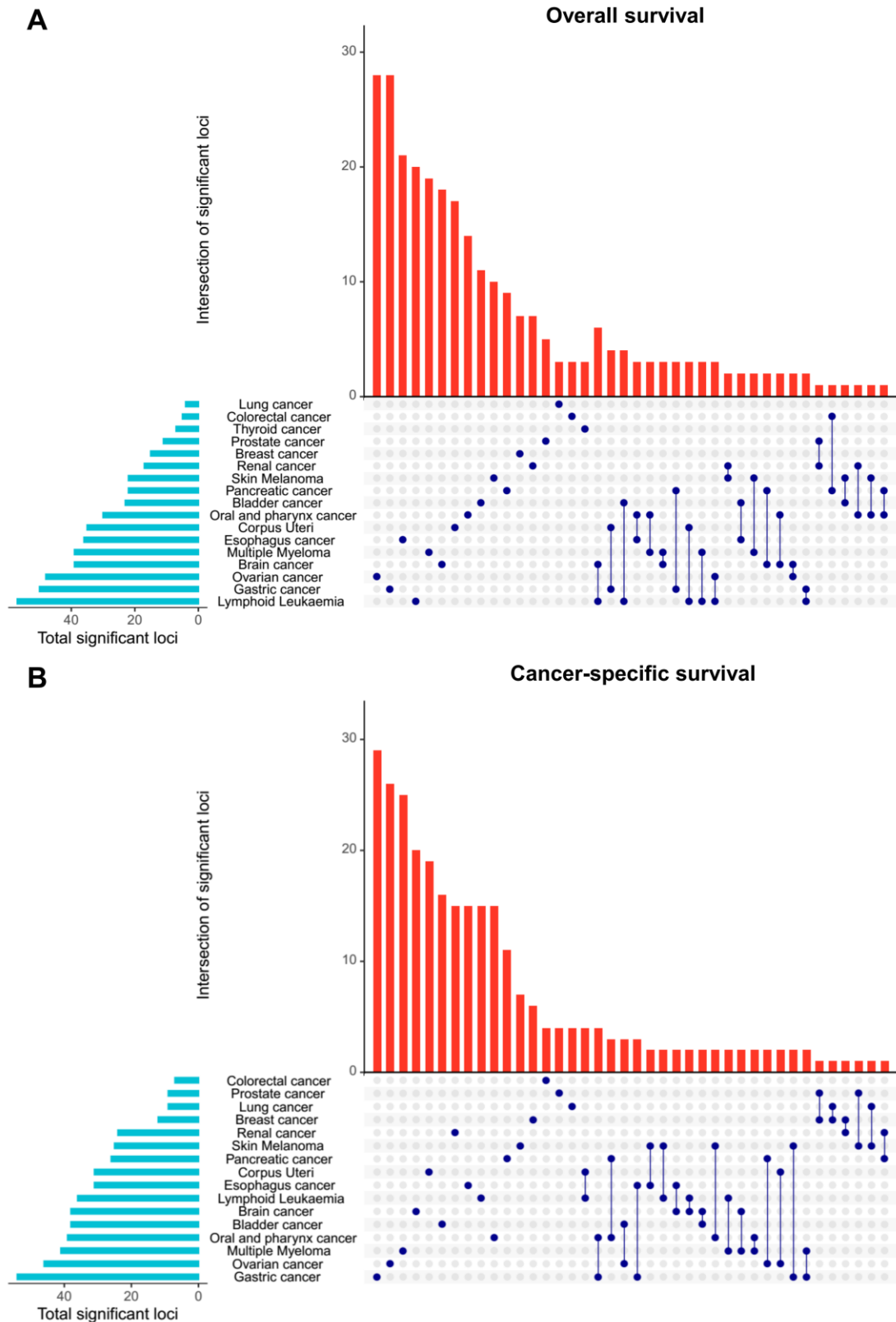
Supplementary Table 2. Summary of cancer survival-associated risk loci.

Cancer type	Overall survival ^a	Cancer-specific survival ^a
Bladder cancer	1q23.3, 2q23.3, 3q21.2, 4q26, 5q33.3, 6q26, 7p21.3, 7q11.21, 8p23.1, 8q24.22, 9q32, 9q33.2, 10p12.2, 10q25.3, 10q26.13, 11q14.1, 12p13.31, 16q24.1, 17p13.1, 17q21.31, 17q23.3, 17q25.1, 18q21.33	1p22.3, 1q23.3, 1q32.1, 1q41, 2q11.2, 3p25.3, 3p12.3, 3q13.13, 3q21.2, 3q21.3, 4q22.1, 4q23, 4q25, 4q31.21, 5q22.3, 6q26, 7q11.21, 8p23.1, 8p22, 8q24.22, 9p22.1, 9q33.2, 9q34.3, 10p12.2, 10q11.23, 11p11.2, 12p13.31, 12p11.21, 13q32.2, 15q24.1, 16p13.3, 17p13.2, 17q21.31, 17q23.3, 17q25.1, 20p11.21, 20q13.2, 22q12.2
Brain cancer	1p36.11, 2p21, 2q31.3, 3p22.2, 3q13.11, 3q23, 4q13.2, 5p15.33, 5p15.1, 5q12.1, 5q21.3, 6q15, 6q24.2, 7q31.1, 8q12.1, 8q22.1, 9p24.1, 9q21.13, 9q22.1, 10p15.1, 11p15.1, 11q22.1, 12q13.3, 12q15, 12q24.23, 15q22.31, 15q26.2, 16p13.2, 16p13.13, 16q21, 16q22.2, 16q24.3, 17p13.1, 17p12, 17q25.1, 17q25.3, 18q12.3, 20q12, 20q13.33	1q25.3, 1q42.3, 1q43, 2p21, 2q31.3, 3p22.2, 3p12.3, 3q13.11, 3q23, 4p16.3, 4q13.2, 5p15.1, 5q12.1, 5q22.3, 6q15, 6q24.2, 7q31.1, 8q12.1, 8q22.1, 9p24.2, 9q21.13, 10p15.1, 11p15.1, 11p14.2, 11p12, 12q24.23, 16p13.2, 16p13.13, 16q21, 16q22.2, 16q24.3, 17p13.1, 17p12, 17q25.1, 17q25.3, 18q12.3, 19p13.3, 20q12
Breast cancer	2p25.1, 3p26.1, 3q13.32, 6q23.2, 7p21.3, 8q23.2, 10q23.31, 13q33.1, 15q11.2, 15q23, 16p13.11, 16p11.2, 17q25.1, 18p11.32, 22q12.3	1q24.1, 2p14, 4p12, 4q28.3, 5q14.3, 7p21.3, 8q23.2, 9q21.31, 10q11.21, 12q15, 15q23, 16p13.11
Colorectal cancer	1q44, 2p22.3, 8q24.23, 10q25.1, 21q22.2	1p31.3, 3p13, 4q28.1, 10p12.31, 10q25.1, 17q21.33, 17q23.3
Corpus Uteri	1q31.3, 1q42.2, 2p25.3, 2p22.1, 2p14, 2q12.2, 2q31.2, 3p24.3, 3q13.2, 3q26.31, 4p12, 4q24, 4q32.1, 4q35.1, 4q35.2, 5q12.3, 6p22.1, 6p21.33, 7p14.3, 7q35, 8q24.21, 9q33.1, 10p11.21, 10q25.2, 11p14.3, 11p12, 12p13.33, 14q32.2, 15q13.2, 15q22.2, 16p11.2, 16q23.1, 17p13.3, 20q13.2, 21q21.1	1q31.3, 1q42.2, 2p22.1, 3p21.1, 3q11.2, 3q13.2, 3q26.31, 4p16.3, 4q24, 4q32.1, 4q35.1, 5q12.3, 7p12.2, 7q11.23, 8q21.13, 9q33.1, 10p11.21, 12p12.3, 12q13.13, 12q24.13, 12q24.32, 13q12.13, 13q21.1, 14q32.11, 14q32.2, 15q26.1, 16p13.3, 16q23.1, 17q24.3, 18p11.21, 19p12
Esophagus cancer	1p36.13, 1p35.2, 1p31.3, 1q31.2, 2q32.3, 2q35, 2q37.1, 3q21.3, 3q26.32, 3q27.3, 4q12, 4q13.1, 5q23.1, 6p25.1, 6q25.3, 7p12.3, 7q11.23, 7q21.12, 8p23.2, 8p23.1, 8p21.2, 8p12, 8q24.12, 8q24.21, 9p24.3, 10p15.1, 10q25.3, 11p12, 11q24.1, 11q25, 12q23.3, 12q24.11, 13q33.1, 18q12.1, 20q13.2, 22q11.23	1p36.32, 1p36.13, 1p31.3, 1q21.3, 2q35, 3q21.3, 3q25.33, 3q26.32, 3q27.3, 4q34.3, 5p14.1, 6p12.2, 7q11.22, 7q11.23, 7q21.3, 7q22.1, 7q22.3, 8p11.21, 8q12.1, 9p24.1, 10p15.1, 10q21.2, 10q25.3, 11q25, 12q15, 12q23.3, 12q24.11, 13q33.1, 17p11.2, 18q11.2, 18q21.31
Gastric cancer	1p36.32, 1p36.12, 1p34.1, 1q41, 1q43, 2p24.3, 2p23.3, 2p14, 2q11.2, 2q12.2, 2q12.3, 2q13, 2q24.2, 3p21.1, 3q21.1, 3q22.1, 3q29, 4p15.31, 4p12, 4q28.1, 4q32.1, 5q22.2, 7p21.3, 7p15.2, 9p21.3, 9q33.1, 10p13, 10p12.31, 10q22.3, 10q23.1, 10q23.31, 10q26.3, 11q12.3, 11q24.1, 11q24.2, 12q14.1, 12q24.32, 15q21.1, 15q21.3,	1p36.32, 1p13.1, 1q23.2, 1q24.2, 1q31.3, 1q42.13, 1q43, 2p21, 2p14, 2q33.1, 2q37.1, 3p22.3, 3q12.1, 3q21.1, 4p15.31, 4p11, 4q13.2, 4q25, 4q26, 4q28.1, 5q22.2, 5q22.3, 6p25.3, 6p22.3, 6p12.2, 6p12.1, 6q11.1, 7p21.1, 7p11.2, 7q35, 8p21.3, 9p21.3, 9p13.2, 9q32, 10p13, 10q21.3, 10q23.2, 11p14.1, 11q22.1, 11q24.1, 12q24.21, 13q21.33, 13q31.3,

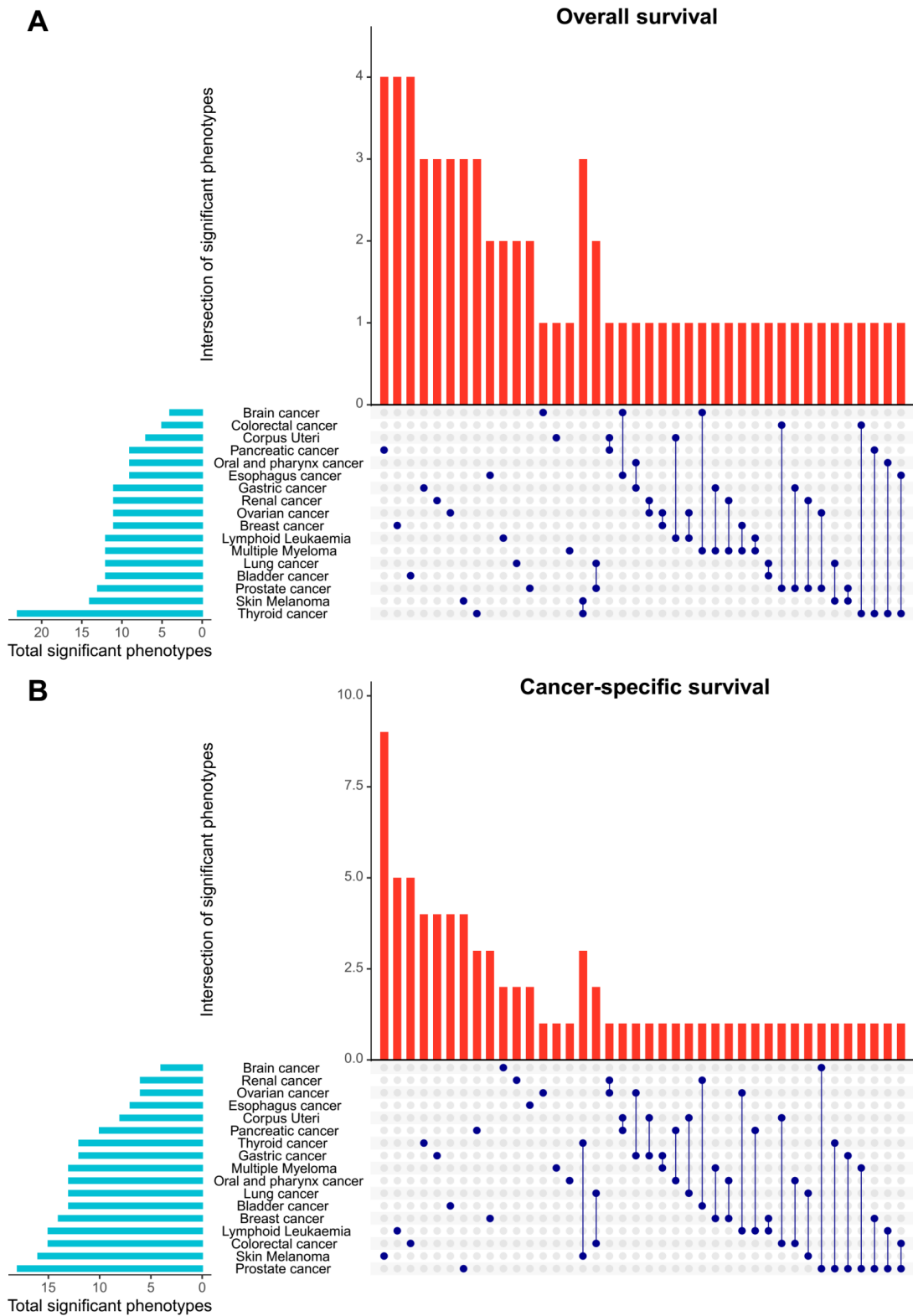
	15q22.2, 15q26.2, 16p13.12, 17p11.1, 17q11.1, 17q24.3, 18q21.31, 18q21.33, 19p13.3, 20p11.23, 21q22.2	13q32.2, 13q33.1, 15q11.2, 15q26.2, 17p11.1, 17q11.1, 17q12, 18q21.31, 20q13.13, 20q13.33, 21q22.2
Lung cancer	3p14.2, 3p14.1, 4p15.2, 17p11.2	1q31.2, 2p16.3, 2q12.3, 5q14.2, 5q14.3, 8q24.22, 9p13.3, 9q21.13, 14q12
Lymphoid Leukaemia	1p36.32, 1p36.13, 1p32.3, 1p32.2, 2q11.2, 2q22.1, 2q23.3, 2q24.1, 2q32.1, 3p22.2, 3p22.1, 3p14.1, 3p13, 3q12.1, 4p15.33, 4q13.2, 4q26, 4q35.1, 5p14.3, 5q23.1, 5q23.2, 5q32, 5q33.2, 5q33.3, 6p21.2, 6q13, 6q24.2, 7p21.1, 7p14.3, 7q31.1, 7q35, 8q22.1, 9q22.33, 9q34.13, 10p14, 10p12.2, 11p12, 11q13.2, 11q13.4, 11q14.1, 12p12.1, 14q13.1, 15q25.1, 15q25.3, 15q26.1, 15q26.2, 16p13.2, 17p13.2, 17q21.2, 17q25.3, 20p11.21, 20q13.13, 20q13.2, 20q13.31, 21q21.1, 21q21.2, 22q12.3	1p21.3, 1q25.3, 1q41, 2p24.2, 2q24.1, 3p24.2, 3p24.1, 3p22.1, 4p15.2, 4q24, 4q26, 4q35.1, 5p13.3, 5p13.1, 5q11.2, 5q23.1, 5q32, 5q33.2, 6p12.2, 7p12.3, 7q31.1, 8p23.1, 8q21.2, 8q21.3, 8q24.21, 10q11.23, 10q23.1, 14q32.11, 15q26.1, 15q26.2, 17q22, 18q22.3, 19q13.33, 19q13.42, 19q13.43, 20p11.21
Multiple Myeloma	1p36.13, 1p35.3, 2p23.2, 2p22.2, 2p21, 2p16.1, 2p14, 2p11.1, 2q22.1, 2q32.3, 2q35, 3p26.2, 3p24.1, 3q13.12, 4p14, 4q23, 5p15.2, 5q34, 6p25.3, 6p21.2, 6q15, 6q22.31, 6q22.33, 7q36.2, 8p22, 12p13.32, 12q15, 14q32.11, 14q32.33, 15q13.1, 15q25.1, 16p13.12, 16q23.1, 16q23.3, 18q12.2, 19p13.2, 20q11.21, 21q22.3, 22q13.1	1p35.3, 1q31.1, 1q42.13, 2p23.2, 2p22.2, 2p21, 2p14, 2p11.1, 2q32.3, 2q33.3, 3p26.2, 3p24.1, 3q13.12, 3q27.2, 5p15.2, 5p13.1, 5q23.2, 5q34, 5q35.2, 6p21.2, 6q15, 6q22.31, 7q34, 7q36.2, 9p21.3, 9q21.31, 11p15.2, 11p11.2, 14q24.1, 14q32.33, 15q13.1, 15q25.1, 16q23.1, 16q23.2, 17p13.1, 18p11.23, 18q21.1, 18q23, 19p13.2, 21q22.3, 22q13.1
Oral and pharynx cancer	1p31.3, 2p13.3, 2q12.1, 2q14.1, 2q14.3, 2q24.1, 2q32.1, 2q32.3, 3p14.3, 3q22.3, 3q28, 4q31.23, 4q31.3, 4q32.1, 4q32.3, 5q14.1, 5q23.3, 6p25.3, 6q16.1, 6q25.3, 8p22, 8p12, 8q21.3, 11q23.3, 11q24.1, 12q21.33, 16q12.2, 20q11.21, 20q12, 20q13.33	1q24.2, 1q31.3, 2p21, 2q14.3, 2q24.3, 2q32.1, 2q32.2, 3p14.3, 3p14.2, 3q28, 4q25, 4q32.3, 4q34.3, 5p15.1, 5q23.2, 6p21.31, 6q16.1, 7p21.1, 7p14.1, 8p23.1, 8p22, 8p11.23, 9q34.13, 9q34.3, 10q26.11, 11p11.2, 11q24.1, 13q31.3, 14q12, 14q13.1, 14q23.3, 15q13.3, 15q14, 16p12.3, 16q12.2, 17q25.3, 18q23, 19p13.12, 19q13.42
Ovarian cancer	1p32.1, 1p22.3, 1q42.12, 2p12, 2q14.2, 2q31.1, 2q32.3, 2q33.2, 3p26.1, 3p14.1, 3p11.1, 3q12.1, 4q13.3, 4q24, 4q25, 4q34.2, 5p15.2, 5q12.3, 5q35.1, 5q35.3, 6q14.1, 7p15.3, 7p14.3, 7q21.11, 7q22.1, 8q21.12, 8q24.3, 9q21.12, 9q21.13, 9q22.33, 9q34.13, 10q21.1, 10q21.2, 10q23.1, 10q24.2, 11p15.4, 11q13.3, 11q14.1, 11q24.3, 12p13.32, 12q21.2, 13q31.3, 14q32.12, 14q32.2, 15q12, 16p13.13, 19p13.11, 22q13.33	1p32.1, 1p31.1, 1p22.3, 1q41, 1q43, 2q14.2, 2q24.3, 2q32.3, 2q33.1, 2q36.1, 3p26.1, 3p14.1, 3p11.1, 3q22.2, 4q13.3, 4q23, 5p15.2, 5q12.3, 6p24.3, 6q14.1, 7q21.11, 7q22.1, 8q21.12, 8q24.3, 9q21.12, 9q21.13, 9q22.33, 10q21.1, 10q23.1, 10q24.2, 10q26.3, 11p12, 11q13.3, 11q14.1, 11q24.3, 12q21.2, 13q12.13, 13q13.1, 14q24.1, 14q32.12, 15q12, 17p13.2, 17q21.2, 18q12.2, 19q13.11, 20q11.23

Pancreatic cancer	1p31.1, 1q32.1, 1q41, 2p25.2, 2q14.3, 2q32.1, 3p11.1, 4p16.1, 4q28.3, 5p15.1, 8q24.13, 8q24.23, 9p21.3, 9p21.1, 10p13, 15q13.3, 15q22.31, 15q26.2, 17q21.2, 18p11.32, 18q12.2, 18q22.3	1q32.1, 1q41, 2q31.1, 2q32.1, 3p11.1, 3q26.32, 4p16.1, 5p15.1, 5q33.1, 7q21.11, 7q22.1, 8q24.13, 8q24.23, 9p21.1, 9q34.13, 10p13, 10q26.2, 11p15.4, 12p13.33, 12p13.31, 13q13.1, 13q14.3, 15q13.3, 15q22.31, 15q26.2, 18p11.32
Prostate cancer	1q24.3, 2q32.1, 3q13.33, 3q25.1, 3q25.33, 4q13.3, 5p13.2, 11p12, 17p13.2, 17q24.2, 18q21.31	2q13, 3q25.33, 4p12, 5p13.2, 5q31.3, 7p12.3, 10q11.23, 14q32.31, 17q24.2
Renal cancer	1q24.3, 1q32.3, 2p15, 2q24.2, 2q37.2, 3p11.1, 3q25.32, 6q16.1, 7q31.1, 8q22.3, 9q31.1, 11p13, 11q24.1, 12p12.3, 15q12, 16q12.1, 18p11.32	1p31.3, 1q32.1, 1q32.3, 2p15, 2q24.1, 2q24.2, 3p11.1, 3q25.32, 4p15.1, 4q25, 5p14.3, 5q35.3, 6p23, 7p21.3, 8p23.2, 9q21.33, 9q34.3, 11p14.3, 11q22.3, 12p13.33, 12q21.31, 13q21.1, 15q22.2, 19q13.31
Skin Melanoma	1q21.3, 1q23.3, 2q12.1, 2q31.3, 2q37.2, 3q13.12, 4q24, 5p15.2, 5q22.3, 5q33.2, 5q34, 7p14.1, 7q21.3, 9q33.3, 10p12.1, 10q23.2, 11p14.1, 11p13, 14q32.12, 19q13.41, 20q11.23, 22q12.3	1p34.1, 1q21.3, 2q12.1, 2q12.3, 2q31.3, 2q32.3, 3q21.3, 4q26, 4q31.21, 5p15.2, 5p14.1, 5q31.3, 5q32, 6p22.3, 7q31.33, 8p12, 10q23.2, 10q26.11, 11p12, 12q21.2, 12q24.31, 16q12.2, 16q22.1, 17q22, 19q13.32
Thyroid cancer	3p25.2, 3p11.1, 6q27, 12q14.1, 14q32.2, 18q21.32, 20q13.31	-

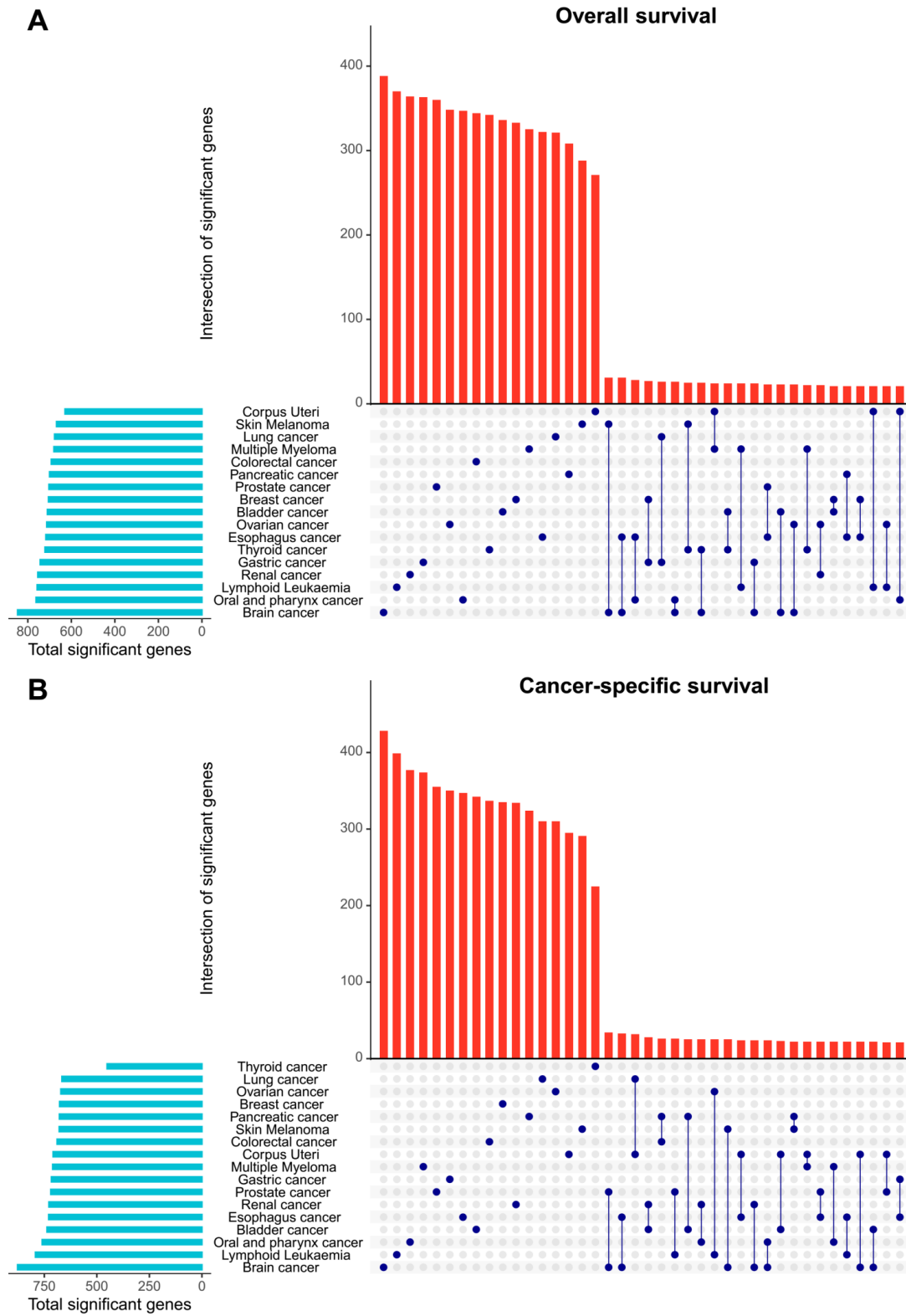
^a *P*-value for Cox regression model $\leq 1 \times 10^{-6}$.



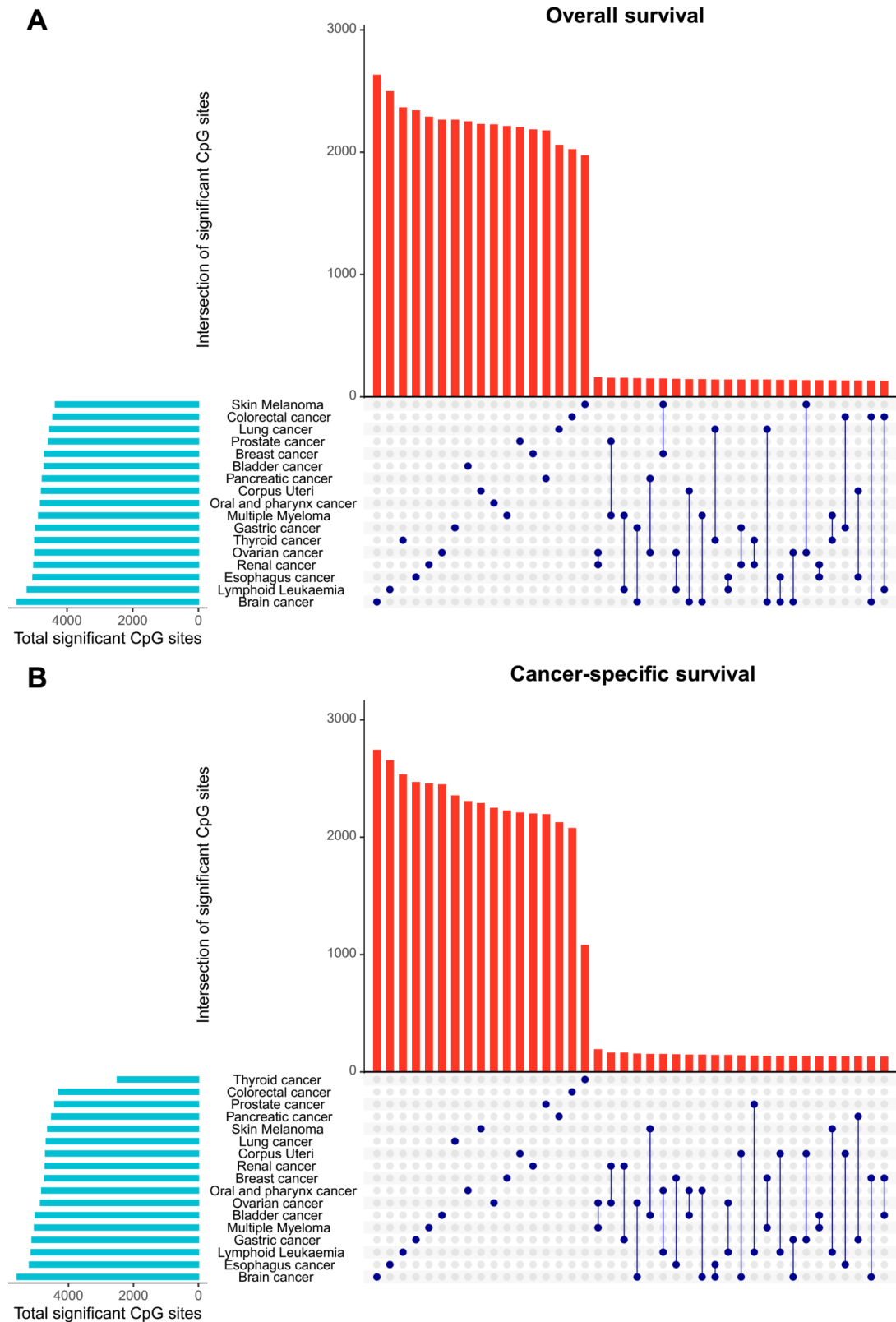
Supplementary Figure 1. Summary of the significant risk loci associated with cancer survival. (A) Overall survival; (B) cancer-specific survival. Risk loci identified in multiple cancer types were connected by lines.



Supplementary Figure 2. Summary of the significant risk factors associated with cancer survival via Mendelian randomization (MR) analysis. (A) Overall survival; (B) cancer-specific survival. Risk factors identified in multiple cancer types were connected by lines.



Supplementary Figure 3. Summary of the significant genes associated with cancer survival via Mendelian randomization (MR) analysis. (A) Overall survival; (B) cancer-specific survival. Genes identified in multiple cancer types were connected by lines.



Supplementary Figure 4. Summary of the significant CpG sites associated with cancer survival via Mendelian randomization (MR) analysis. (A) Overall survival; (B) cancer-specific survival. CpG sites identified in multiple cancer types were connected by lines.