

Supplementary Table 1: The top 300 pairs of the highest similarity disease pairs obtained by miRNA-overlap measure and mpDisNet.

Source	Target	similarity
Arthritis, Juvenile Rheumatoid	Alcoholism	0.5
Autoimmune Lymphoproliferative Syndrome	Alcoholism	0.5
Carcinoma, Neuroendocrine	Astrocytoma	0.6666667
Carcinoma, Renal Cell	Carcinoma, Hepatocellular	0.3502825
Carcinoma, Transitional Cell	Bronchiolitis Obliterans	0.5
Chlamydia Infections	Alcoholism	1
Chlamydia Infections	Arthritis, Juvenile Rheumatoid	0.5
Chlamydia Infections	Autoimmune Lymphoproliferative Syndrome	0.5
Choriocarcinoma	Barrett Esophagus	0.4117647
Choriocarcinoma	Carcinoma, Endometrioid	0.3513514
Colorectal Neoplasms	Cardiomyopathy, Hypertrophic	0.3482143
Colorectal Neoplasms, Hereditary Nonpolyposis	Angina, Unstable	0.5
Congenital Hypothyroidism	Cerebrovascular Disorders	1
Coronary Restenosis	Alcoholism	1
Coronary Restenosis	Arthritis, Juvenile Rheumatoid	0.5
Coronary Restenosis	Autoimmune Lymphoproliferative Syndrome	0.5
Coronary Restenosis	Chlamydia Infections	1
Creutzfeldt-Jakob Syndrome	Alcoholism	1
Creutzfeldt-Jakob Syndrome	Arthritis, Juvenile Rheumatoid	0.5
Creutzfeldt-Jakob Syndrome	Autoimmune Lymphoproliferative Syndrome	0.5
Creutzfeldt-Jakob Syndrome	Chlamydia Infections	1
Creutzfeldt-Jakob Syndrome	Coronary Restenosis	1
Demyelinating Diseases	Carcinoma, Neuroendocrine	0.5
Dermatitis, Allergic Contact	Carcinoma, Neuroendocrine	0.6666667
Dermatitis, Allergic Contact	Colorectal Neoplasms, Hereditary Nonpolyposis	0.5
Dermatitis, Allergic Contact	Demyelinating Diseases	0.6666667
Encephalitis	Colorectal Neoplasms, Hereditary Nonpolyposis	0.5
Focal Epithelial Hyperplasia	Astrocytoma	0.5
Focal Epithelial Hyperplasia	Autoimmune Lymphoproliferative Syndrome	0.5
Focal Epithelial Hyperplasia	Carcinoma, Ductal	0.5
Focal Epithelial Hyperplasia	Corneal Dystrophies, Hereditary	0.5
Focal Epithelial Hyperplasia	Dermatitis, Allergic Contact	0.5
Gastritis, Atrophic	Angina, Unstable	0.5
Gastritis, Atrophic	Colorectal Neoplasms, Hereditary Nonpolyposis	1
Gastritis, Atrophic	Dermatitis, Allergic Contact	0.5
Gastritis, Atrophic	Encephalitis	0.5
Gastrointestinal Stromal Tumors	Brain Neoplasms	0.4347826
Gaucher Disease	Angina, Unstable	0.5
Gaucher Disease	Colorectal Neoplasms, Hereditary Nonpolyposis	1
Gaucher Disease	Dermatitis, Allergic Contact	0.5
Gaucher Disease	Encephalitis	0.5
Gaucher Disease	Gastritis, Atrophic	1
Glioma	Carcinoma, Hepatocellular	0.4227642
Glioma	Carcinoma, Renal Cell	0.3991228
Glioma	Colorectal Neoplasms	0.3489583
Hamartoma	Adenoma	1
Hamartoma Syndrome, Multiple	Focal Epithelial Hyperplasia	0.5
Hearing Loss	Fatigue Syndrome, Chronic	1
Hemoglobinopathies	Chorioamnionitis	0.5
Hepatitis, Autoimmune	Focal Epithelial Hyperplasia	0.5
Hyperuricemia	Fatigue Syndrome, Chronic	1
Hyperuricemia	Hearing Loss	1
Hypogonadism	Hyperaldosteronism	1
Ileus	Hamartoma Syndrome, Multiple	0.5
Immune System Diseases	Hypersensitivity	0.35

Insulinoma	Coloboma	1
Intermittent Claudication	Brucellosis	0.5
Legg-Perthes Disease	Encephalitis	0.5
Leprosy	Alcoholism	0.5
Leprosy	Autoimmune Lymphoproliferative Syndrome	1
Leprosy	Chlamydia Infections	0.5
Leprosy	Coronary Restenosis	0.5
Leprosy	Creutzfeldt-Jakob Syndrome	0.5
Leprosy	Focal Epithelial Hyperplasia	0.5
Leprosy, Lepromatous	Astrocytoma	0.5
Leprosy, Lepromatous	Autoimmune Lymphoproliferative Syndrome	0.5
Leprosy, Lepromatous	Carcinoma, Ductal	0.5
Leprosy, Lepromatous	Corneal Dystrophies, Hereditary	0.5
Leprosy, Lepromatous	Dermatitis, Allergic Contact	0.5
Leprosy, Lepromatous	Focal Epithelial Hyperplasia	1
Leprosy, Lepromatous	Hamartoma Syndrome, Multiple	0.5
Leprosy, Lepromatous	Hepatitis, Autoimmune	0.5
Leprosy, Lepromatous	Leprosy	0.5
Leukemia, Lymphocytic, Acute	Arthritis, Rheumatoid	0.375
Leukemia, Megakaryocytic, Acute	Fatigue Syndrome, Chronic	0.5
Leukemia, Megakaryocytic, Acute	Hearing Loss	0.5
Leukemia, Megakaryocytic, Acute	Hyperuricemia	0.5
Leukemia, Myelocytic, Acute	Carcinoma, Renal Cell	0.40625
Leukemia, Myelocytic, Acute	Glioma	0.3903509
Leukemia, Myelocytic, Acute	Leukemia, Lymphocytic, Acute	0.415493
Leukemia, Promyelocytic, Acute	Carcinoma, Non-Small-Cell Lung	0.40625
Lichen Planus	Dermatitis, Atopic	0.3636364
Lung Neoplasms	Breast Neoplasms	0.3404255
Lung Neoplasms	Carcinoma, Renal Cell	0.4055556
Lung Neoplasms	Colorectal Neoplasms	0.3884892
Lung Neoplasms	Glioma	0.3574661
Lung Neoplasms	Leukemia, Myelocytic, Acute	0.3791209
Lupus Erythematosus, Systemic	Breast Neoplasms	0.3431373
Lyme Disease	Chorioamnionitis	1
Lyme Disease	Hemoglobinopathies	0.5
Lymphoma, B-Cell	Burkitt Lymphoma	0.3863636
Lymphoma, T-Cell, Cutaneous	Dermatitis, Allergic Contact	0.4
Melanoma	Carcinoma, Hepatocellular	0.4540682
Melanoma	Carcinoma, Renal Cell	0.4380165
Melanoma	Glioma	0.4522059
Melanoma	Leukemia, Myelocytic, Acute	0.3895582
Melanoma	Lung Neoplasms	0.3483607
MELAS Syndrome	Fatigue Syndrome, Chronic	1
MELAS Syndrome	Hearing Loss	1
MELAS Syndrome	Hyperuricemia	1
MELAS Syndrome	Leukemia, Megakaryocytic, Acute	0.5
Meningitis	Alcoholism	1
Meningitis	Arthritis, Juvenile Rheumatoid	0.5
Meningitis	Autoimmune Lymphoproliferative Syndrome	0.5
Meningitis	Chlamydia Infections	1
Meningitis	Coronary Restenosis	1
Meningitis	Creutzfeldt-Jakob Syndrome	1
Meningitis	Leprosy	0.5
Metabolic Diseases	Fatigue Syndrome, Chronic	0.5
Metabolic Diseases	Hearing Loss	0.5
Metabolic Diseases	Hyperuricemia	0.5

Metabolic Diseases	MELAS Syndrome	0.5
Multiple Myeloma	Leukemia, Lymphocytic, Acute	0.3510638
Muscular Dystrophy, Duchenne	Dermatomyositis	0.4482759
Mycobacterium avium-intracellulare Infection	Alcoholism	1
Mycobacterium avium-intracellulare Infection	Arthritis, Juvenile Rheumatoid	0.5
Mycobacterium avium-intracellulare Infection	Autoimmune Lymphoproliferative Syndrome	0.5
Mycobacterium avium-intracellulare Infection	Chlamydia Infections	1
Mycobacterium avium-intracellulare Infection	Coronary Restenosis	1
Mycobacterium avium-intracellulare Infection	Creutzfeldt-Jakob Syndrome	1
Mycobacterium avium-intracellulare Infection	Leprosy	0.5
Mycobacterium avium-intracellulare Infection	Meningitis	1
Myelodysplastic Syndromes	Aneurysm	0.3623188
Myocardial Infarction	Atherosclerosis	0.3508772
Myocardial Infarction	Cardiomyopathy, Hypertrophic	0.3627451
Myoma	Adenoma	1
Myoma	Hamartoma	1
Myopia	Dyspepsia	1
Nephrolithiasis	Angina, Unstable	0.5
Nephrolithiasis	Colorectal Neoplasms, Hereditary Nonpolyposis	1
Nephrolithiasis	Dermatitis, Allergic Contact	0.5
Nephrolithiasis	Encephalitis	0.5
Nephrolithiasis	Gastritis, Atrophic	1
Nephrolithiasis	Gaucher Disease	1
Neutropenia	Focal Epithelial Hyperplasia	0.5
Neutropenia	Leprosy, Lepromatous	0.5
Oligodendroglioma	Mental Retardation	1
Oral Submucous Fibrosis	Focal Epithelial Hyperplasia	0.5
Oral Submucous Fibrosis	Leprosy, Lepromatous	0.5
Osteonecrosis	Carcinoma, Transitional Cell	0.5
Osteonecrosis	Complex Regional Pain Syndromes	0.5
Osteonecrosis	Neurotoxicity Syndromes	0.5
Osteopetrosis	Dyspepsia	0.5
Osteopetrosis	Myopia	0.5
Osteosarcoma	Carcinoma, Hepatocellular	0.3611111
Osteosarcoma	Carcinoma, Renal Cell	0.3719807
Osteosarcoma	Colorectal Neoplasms	0.3575758
Osteosarcoma	Glioma	0.4329004
Osteosarcoma	Leukemia, Myelocytic, Acute	0.3492823
Osteosarcoma	Lung Neoplasms	0.4095745
Osteosarcoma	Melanoma	0.3846154
Periodontal Diseases	Dermatitis, Atopic	0.3846154
Peripheral Nervous System Diseases	Autoimmune Lymphoproliferative Syndrome	0.6666667
Peripheral Nervous System Diseases	Carcinoma, Neuroendocrine	0.5
Peripheral Nervous System Diseases	Demyelinating Diseases	0.5
Peripheral Nervous System Diseases	Dermatitis, Allergic Contact	0.6666667
Peripheral Nervous System Diseases	Glomerulonephritis, IGA	0.5
Peripheral Nervous System Diseases	Leprosy	0.6666667
Peripheral Nervous System Diseases	Lichen Planus	0.375
Pneumonia	Lichen Planus	0.375
Pneumonia	Peripheral Nervous System Diseases	0.5
Primary Myelofibrosis	Chorioamnionitis	0.5
Primary Myelofibrosis	Lyme Disease	0.5
Primary Myelofibrosis	Otitis Media	0.5
Prostatic Neoplasms	Carcinoma, Renal Cell	0.3480392
Prostatic Neoplasms	Glioma	0.3416667
Prostatic Neoplasms	Leukemia, Myelocytic, Acute	0.3514851

Prostatic Neoplasms	Lung Neoplasms	0.3403141
Prostatic Neoplasms	Osteosarcoma	0.3537736
Pulmonary Heart Disease	Alcoholism	1
Pulmonary Heart Disease	Arthritis, Juvenile Rheumatoid	0.5
Pulmonary Heart Disease	Autoimmune Lymphoproliferative Syndrome	0.5
Pulmonary Heart Disease	Chlamydia Infections	1
Pulmonary Heart Disease	Coronary Restenosis	1
Pulmonary Heart Disease	Creutzfeldt-Jakob Syndrome	1
Pulmonary Heart Disease	Leprosy	0.5
Pulmonary Heart Disease	Meningitis	1
Pulmonary Heart Disease	Mycobacterium avium-intracellulare Infection	1
Retinitis Pigmentosa	Attention Deficit Disorder with Hyperactivity	0.375
Salivary Gland Diseases	Astrocytoma	0.5
Salivary Gland Diseases	Autoimmune Lymphoproliferative Syndrome	0.5
Salivary Gland Diseases	Carcinoma, Ductal	0.5
Salivary Gland Diseases	Corneal Dystrophies, Hereditary	0.5
Salivary Gland Diseases	Dermatitis, Allergic Contact	0.5
Salivary Gland Diseases	Focal Epithelial Hyperplasia	1
Salivary Gland Diseases	Hamartoma Syndrome, Multiple	0.5
Salivary Gland Diseases	Hepatitis, Autoimmune	0.5
Salivary Gland Diseases	Leprosy	0.5
Salivary Gland Diseases	Leprosy, Lepromatous	1
Salivary Gland Diseases	Neutropenia	0.5
Salivary Gland Diseases	Oral Submucous Fibrosis	0.5
Schistosomiasis japonica	Colitis	0.375
Schistosomiasis japonica	Primary Myelofibrosis	0.5
Seminoma	Cerebellar Neoplasms	0.5
Short Bowel Syndrome	Carcinoma, Transitional Cell	0.5
Short Bowel Syndrome	Malaria, Vivax	0.5
Skin Diseases	Sepsis	0.5
Sleep Apnea, Obstructive	Esophagitis	0.3333333
Sleep Apnea, Obstructive	Osteogenesis Imperfecta	0.5
Spondylitis, Ankylosing	Glomerulonephritis, IGA	0.4
Spondylitis, Ankylosing	Peripheral Nervous System Diseases	0.375
Stomach Neoplasms	Carcinoma, Renal Cell	0.3386243
Stomach Neoplasms	Glioma	0.3513514
Stomach Neoplasms	Lung Neoplasms	0.3684211
Stress Disorders, Post-Traumatic	Liver Diseases, Alcoholic	0.3333333
Telangiectasia, Hereditary Hemorrhagic	Esophagitis	0.3333333
Tetralogy of Fallot	Fatigue Syndrome, Chronic	1
Tetralogy of Fallot	Hearing Loss	1
Tetralogy of Fallot	Hyperuricemia	1
Tetralogy of Fallot	Intracranial Aneurysm	0.3333333
Tetralogy of Fallot	Leukemia, Megakaryocytic, Acute	0.5
Tetralogy of Fallot	MELAS Syndrome	1
Tetralogy of Fallot	Metabolic Diseases	0.5
Thrombocythemia, Hemorrhagic	Myeloproliferative Disorders	0.3333333
Thrombocytopenia	Angina, Unstable	0.3333333
Thrombocytopenia	Colorectal Neoplasms, Hereditary Nonpolyposis	0.5
Thrombocytopenia	Dermatitis, Allergic Contact	0.3333333
Thrombocytopenia	Encephalitis	0.3333333
Thrombocytopenia	Fatigue Syndrome, Chronic	0.5
Thrombocytopenia	Gastritis, Atrophic	0.5
Thrombocytopenia	Gaucher Disease	0.5
Thrombocytopenia	Hearing Loss	0.5
Thrombocytopenia	Hyperuricemia	0.5

Thrombocytopenia	Leukemia, Megakaryocytic, Acute	0.3333333
Thrombocytopenia	MELAS Syndrome	0.5
Thrombocytopenia	Metabolic Diseases	0.3333333
Thrombocytopenia	Nephrolithiasis	0.5
Thrombocytopenia	Tetralogy of Fallot	0.5
Thrombocytosis	Alcoholism	0.5
Thrombocytosis	Arthritis, Juvenile Rheumatoid	0.3333333
Thrombocytosis	Autoimmune Lymphoproliferative Syndrome	0.3333333
Thrombocytosis	Chlamydia Infections	0.5
Thrombocytosis	Coronary Restenosis	0.5
Thrombocytosis	Creutzfeldt-Jakob Syndrome	0.5
Thrombocytosis	Leprosy	0.3333333
Thrombocytosis	Meningitis	0.5
Thrombocytosis	Mycobacterium avium-intracellulare Infection	0.5
Thrombocytosis	Osteogenesis Imperfecta	0.3333333
Thrombocytosis	Pulmonary Heart Disease	0.5
Thrombocytosis	Sleep Apnea, Obstructive	0.5
Thrombosis	Hemangiosarcoma	0.4
Thyroiditis, Autoimmune	Colorectal Neoplasms, Hereditary Nonpolyposis	0.3333333
Thyroiditis, Autoimmune	Gastritis, Atrophic	0.3333333
Thyroiditis, Autoimmune	Gaucher Disease	0.3333333
Thyroiditis, Autoimmune	Nephrolithiasis	0.3333333
Tourette Syndrome	Osteomyelitis	0.5
Toxoplasmosis	Lymphoma, Large-Cell, Ki-1	0.4666667
Uterine Cervical Neoplasms	Carcinoma, Pancreatic Ductal	0.3383459
Uterine Cervical Neoplasms	Glioma	0.354067
Uterine Cervical Neoplasms	Osteosarcoma	0.3405405
Uterine Cervical Neoplasms	Prostatic Neoplasms	0.3579545
Uterine Neoplasms	Fatigue Syndrome, Chronic	1
Uterine Neoplasms	Hearing Loss	1
Uterine Neoplasms	Hyperuricemia	1
Uterine Neoplasms	Intracranial Aneurysm	0.3333333
Uterine Neoplasms	Leukemia, Megakaryocytic, Acute	0.5
Uterine Neoplasms	MELAS Syndrome	1
Uterine Neoplasms	Metabolic Diseases	0.5
Uterine Neoplasms	Tetralogy of Fallot	1
Uterine Neoplasms	Thrombocytopenia	0.5
Uveitis	Alcoholism	1
Uveitis	Arthritis, Juvenile Rheumatoid	0.5
Uveitis	Arthritis, Psoriatic	0.3333333
Uveitis	Autoimmune Lymphoproliferative Syndrome	0.5
Uveitis	Chlamydia Infections	1
Uveitis	Coronary Restenosis	1
Uveitis	Creutzfeldt-Jakob Syndrome	1
Uveitis	Leprosy	0.5
Uveitis	Meningitis	1
Uveitis	Mycobacterium avium-intracellulare Infection	1
Uveitis	Peripheral Nervous System Diseases	0.3333333
Uveitis	Pneumonia	0.3333333
Uveitis	Pulmonary Heart Disease	1
Uveitis	Thrombocytosis	0.5
Uveomeningoencephalitic Syndrome	Alcoholism	1
Uveomeningoencephalitic Syndrome	Arthritis, Juvenile Rheumatoid	0.5
Uveomeningoencephalitic Syndrome	Arthritis, Psoriatic	0.3333333
Uveomeningoencephalitic Syndrome	Autoimmune Lymphoproliferative Syndrome	0.5
Uveomeningoencephalitic Syndrome	Chlamydia Infections	1

Uveomeningoencephalitic Syndrome	Coronary Restenosis	1
Uveomeningoencephalitic Syndrome	Creutzfeldt-Jakob Syndrome	1
Uveomeningoencephalitic Syndrome	Leprosy	0.5
Uveomeningoencephalitic Syndrome	Meningitis	1
Uveomeningoencephalitic Syndrome	Mycobacterium avium-intracellulare Infection	1
Uveomeningoencephalitic Syndrome	Peripheral Nervous System Diseases	0.3333333
Uveomeningoencephalitic Syndrome	Pneumonia	0.3333333
Uveomeningoencephalitic Syndrome	Pulmonary Heart Disease	1
Uveomeningoencephalitic Syndrome	Thrombocytosis	0.5
Uveomeningoencephalitic Syndrome	Uveitis	1
Varicocele	Arthritis, Psoriatic	0.3333333
Varicocele	Heart Valve Diseases	0.5
Varicocele	Polycystic Kidney Diseases	0.5
Vitiligo	Colorectal Neoplasms, Hereditary Nonpolyposis	0.3333333
Vitiligo	Gastritis, Atrophic	0.3333333
Vitiligo	Gaucher Disease	0.3333333
Vitiligo	Heart Defects, Congenital	0.3333333
Vitiligo	Nephrolithiasis	0.3333333
Vitiligo	Sleep Apnea, Obstructive	0.3333333
Vulvar Neoplasms	Polycystic Kidney Diseases	0.5
Vulvar Neoplasms	Severe Acute Respiratory Syndrome	0.3333333

Source	Target	similarity
Alzheimer Disease	Atherosclerosis	0.98562754
Alzheimer Disease	Brain Diseases	0.98842779
Alzheimer Disease	Breast Neoplasms	0.985996
Alzheimer Disease	Carcinoma, Hepatocellular	0.98597672
Alzheimer Disease	Carcinoma, Squamous Cell	0.98399434
Alzheimer Disease	Coronary artery disease	0.9839721
Alzheimer Disease	Diabetes Mellitus	0.98970786
Alzheimer Disease	Diabetes Mellitus, Type 2	0.991973
Alzheimer Disease	Esophageal Neoplasms	0.9838278
Alzheimer Disease	Hepatitis B	0.98594711
Alzheimer Disease	Hepatitis C	0.98402599
Alzheimer Disease	Hypertension	0.9877321
Alzheimer Disease	Immune System Diseases	0.98363692
Alzheimer Disease	Kidney Failure, Chronic	0.98449754
Alzheimer Disease	Liver Neoplasms	0.98443263
Alzheimer Disease	Lung Neoplasms	0.9859086
Alzheimer Disease	Metabolic Syndrome X	0.98858764
Alzheimer Disease	Multiple Sclerosis	0.98456408
Alzheimer Disease	Myocardial Infarction	0.98601264
Alzheimer Disease	Obesity	0.98794866
Alzheimer Disease	Osteoporosis	0.9854498
Alzheimer Disease	Prostatic Neoplasms	0.9851983
Alzheimer Disease	Schizophrenia	0.98464465
Alzheimer Disease	Stomach Neoplasms	0.98481312
Anxiety Disorders	Panic Disorder	0.98454806
Arthritis, Rheumatoid	Diabetes Mellitus, Type 2	0.9843674
Arthritis, Rheumatoid	Hepatitis B	0.98706643
Arthritis, Rheumatoid	Hepatitis C	0.98632469
Asthma	Breast Neoplasms	0.98390865
Asthma	Carcinoma, Hepatocellular	0.98385279
Asthma	Diabetes Mellitus	0.98671575
Asthma	Diabetes Mellitus, Type 2	0.98718208
Asthma	Hepatitis B	0.98736443
Asthma	Hepatitis C	0.98536174
Asthma	Hypersensitivity	0.98483383
Asthma	Hypertension	0.98619547
Asthma	Lung Neoplasms	0.98551194
Asthma	Lupus Erythematosus, Systemic	0.98473574
Asthma	Lymphoma	0.98406379
Asthma	Multiple Sclerosis	0.98543879
Atherosclerosis	Carcinoma, Hepatocellular	0.98366358
Atherosclerosis	Carcinoma, Squamous Cell	0.9837216
Atherosclerosis	Coronary artery disease	0.99185535
Atherosclerosis	Diabetes Mellitus	0.98753417
Atherosclerosis	Diabetes Mellitus, Type 2	0.988395
Atherosclerosis	Heart Diseases	0.98527068
Atherosclerosis	Hepatitis B	0.98468887
Atherosclerosis	Hepatitis C	0.98424177
Atherosclerosis	Hypertension	0.98652581
Atherosclerosis	Ischemia	0.98578906
Atherosclerosis	Kidney Failure, Chronic	0.98496804
Atherosclerosis	Liver Cirrhosis	0.98507848
Atherosclerosis	Metabolic Syndrome X	0.98661013
Atherosclerosis	Myocardial Infarction	0.98890541
Atherosclerosis	Obesity	0.98590874

Atherosclerosis	Pre-Eclampsia	0.98385213
Bipolar Disorder	Schizophrenia	0.98375155
Brain Diseases	Diabetes Mellitus	0.98627754
Brain Diseases	Diabetes Mellitus, Type 2	0.98682982
Brain Diseases	Hypertension	0.98493099
Brain Diseases	Obesity	0.98452815
Breast Neoplasms	Carcinoma, Hepatocellular	0.98928784
Breast Neoplasms	Carcinoma, Squamous Cell	0.98742686
Breast Neoplasms	Colorectal Neoplasms	0.98623983
Breast Neoplasms	Diabetes Mellitus	0.98813999
Breast Neoplasms	Diabetes Mellitus, Type 2	0.98822106
Breast Neoplasms	Esophageal Neoplasms	0.98775371
Breast Neoplasms	Glioma	0.9838862
Breast Neoplasms	Hepatitis B	0.98741511
Breast Neoplasms	Hepatitis C	0.98637204
Breast Neoplasms	Kidney Failure, Chronic	0.98746513
Breast Neoplasms	Liver Neoplasms	0.98614945
Breast Neoplasms	Lung Neoplasms	0.99041989
Breast Neoplasms	Lymphoma	0.98595912
Breast Neoplasms	Multiple Sclerosis	0.98443869
Breast Neoplasms	Obesity	0.98548617
Breast Neoplasms	Ovarian Neoplasms	0.99006673
Breast Neoplasms	Pancreatic Neoplasms	0.98627686
Breast Neoplasms	Prostatic Neoplasms	0.98675422
Breast Neoplasms	Pulmonary Disease, Chronic Obstructive	0.98594764
Breast Neoplasms	Stomach Neoplasms	0.98941171
Breast Neoplasms	Urinary Bladder Neoplasms	0.98818813
Carcinoma, Hepatocellular	Carcinoma, Squamous Cell	0.9859452
Carcinoma, Hepatocellular	Colorectal Neoplasms	0.98403647
Carcinoma, Hepatocellular	Diabetes Mellitus	0.98731845
Carcinoma, Hepatocellular	Diabetes Mellitus, Type 2	0.98772025
Carcinoma, Hepatocellular	Esophageal Neoplasms	0.98582449
Carcinoma, Hepatocellular	Hepatitis B	0.98546156
Carcinoma, Hepatocellular	Hepatitis C	0.9842457
Carcinoma, Hepatocellular	Hypertension	0.98476043
Carcinoma, Hepatocellular	Kidney Failure, Chronic	0.98585294
Carcinoma, Hepatocellular	Liver Neoplasms	0.98566199
Carcinoma, Hepatocellular	Lung Neoplasms	0.98853629
Carcinoma, Hepatocellular	Lymphoma	0.98459665
Carcinoma, Hepatocellular	Metabolic Syndrome X	0.9837493
Carcinoma, Hepatocellular	Multiple Sclerosis	0.9836219
Carcinoma, Hepatocellular	Obesity	0.98541108
Carcinoma, Hepatocellular	Pulmonary Disease, Chronic Obstructive	0.98431585
Carcinoma, Hepatocellular	Stomach Neoplasms	0.98682325
Carcinoma, Non-Small-Cell Lung	Lung Neoplasms	0.98729559
Carcinoma, Non-Small-Cell Lung	Pulmonary Disease, Chronic Obstructive	0.98396047
Carcinoma, Squamous Cell	Colorectal Neoplasms	0.98447538
Carcinoma, Squamous Cell	Diabetes Mellitus	0.98770947
Carcinoma, Squamous Cell	Diabetes Mellitus, Type 2	0.98702263
Carcinoma, Squamous Cell	Esophageal Neoplasms	0.98855653
Carcinoma, Squamous Cell	Kidney Failure, Chronic	0.98493859
Carcinoma, Squamous Cell	Liver Neoplasms	0.98453358
Carcinoma, Squamous Cell	Lung Neoplasms	0.98904803
Carcinoma, Squamous Cell	Lymphoma	0.98375845
Carcinoma, Squamous Cell	Metabolic Syndrome X	0.98366132
Carcinoma, Squamous Cell	Obesity	0.98417183

Carcinoma, Squamous Cell	Ovarian Neoplasms	0.98795
Carcinoma, Squamous Cell	Pulmonary Disease, Chronic Obstructive	0.98408943
Carcinoma, Squamous Cell	Stomach Neoplasms	0.98663767
Colitis, Ulcerative	Inflammatory Bowel Diseases	0.98464622
Colorectal Neoplasms	Diabetes Mellitus, Type 2	0.98471294
Colorectal Neoplasms	Esophageal Neoplasms	0.98372269
Colorectal Neoplasms	Lung Neoplasms	0.98710033
Colorectal Neoplasms	Stomach Neoplasms	0.98584402
Coronary artery disease	Diabetes Mellitus	0.98774788
Coronary artery disease	Diabetes Mellitus, Type 2	0.98830804
Coronary artery disease	Heart Diseases	0.98683927
Coronary artery disease	Hypertension	0.98668095
Coronary artery disease	Ischemia	0.98718149
Coronary artery disease	Metabolic Syndrome X	0.98594584
Coronary artery disease	Myocardial Infarction	0.98939826
Coronary artery disease	Obesity	0.98435113
Cystic Fibrosis	Diabetes Mellitus	0.98374554
Cystic Fibrosis	Hepatitis B	0.98388221
Diabetes Mellitus	Diabetes Mellitus, Type 2	0.99469607
Diabetes Mellitus	Esophageal Neoplasms	0.98606355
Diabetes Mellitus	Glioma	0.98442763
Diabetes Mellitus	Heart Diseases	0.98443804
Diabetes Mellitus	Hepatitis B	0.98780111
Diabetes Mellitus	Hepatitis C	0.98663583
Diabetes Mellitus	Hypertension	0.99031488
Diabetes Mellitus	Kidney Failure, Chronic	0.98926471
Diabetes Mellitus	Liver Cirrhosis	0.98531768
Diabetes Mellitus	Liver Neoplasms	0.98617211
Diabetes Mellitus	Lung Neoplasms	0.98845898
Diabetes Mellitus	Lymphoma	0.98658381
Diabetes Mellitus	Lymphoma, Non-Hodgkin	0.98379638
Diabetes Mellitus	Melanoma	0.98425359
Diabetes Mellitus	Metabolic Syndrome X	0.98983602
Diabetes Mellitus	Multiple Sclerosis	0.98596851
Diabetes Mellitus	Myocardial Infarction	0.98899695
Diabetes Mellitus	Obesity	0.99123846
Diabetes Mellitus	Osteoporosis	0.98514184
Diabetes Mellitus	Ovarian Neoplasms	0.98369593
Diabetes Mellitus	Prostatic Neoplasms	0.98447682
Diabetes Mellitus	Pulmonary Disease, Chronic Obstructive	0.98422339
Diabetes Mellitus	Schizophrenia	0.98516946
Diabetes Mellitus	Stomach Neoplasms	0.98502862
Diabetes Mellitus	Urinary Bladder Neoplasms	0.9841696
Diabetes Mellitus, Type 2	Esophageal Neoplasms	0.98681709
Diabetes Mellitus, Type 2	Glioma	0.98596246
Diabetes Mellitus, Type 2	Heart Diseases	0.985219
Diabetes Mellitus, Type 2	Hepatitis B	0.98832558
Diabetes Mellitus, Type 2	Hepatitis C	0.98778228
Diabetes Mellitus, Type 2	Hypertension	0.99235249
Diabetes Mellitus, Type 2	Immune System Diseases	0.9855628
Diabetes Mellitus, Type 2	Ischemia	0.98519213
Diabetes Mellitus, Type 2	Kidney Failure, Chronic	0.98889426
Diabetes Mellitus, Type 2	Liver Cirrhosis	0.98589895
Diabetes Mellitus, Type 2	Liver Neoplasms	0.98575674
Diabetes Mellitus, Type 2	Lung Neoplasms	0.98941364
Diabetes Mellitus, Type 2	Lymphoma	0.98675873

Diabetes Mellitus, Type 2	Lymphoma, Non-Hodgkin	0.98392486
Diabetes Mellitus, Type 2	Melanoma	0.98551011
Diabetes Mellitus, Type 2	Metabolic Syndrome X	0.99191631
Diabetes Mellitus, Type 2	Multiple Sclerosis	0.98787046
Diabetes Mellitus, Type 2	Myocardial Infarction	0.98820351
Diabetes Mellitus, Type 2	Obesity	0.99167324
Diabetes Mellitus, Type 2	Osteoporosis	0.98552305
Diabetes Mellitus, Type 2	Ovarian Neoplasms	0.98438309
Diabetes Mellitus, Type 2	Prostatic Neoplasms	0.98644046
Diabetes Mellitus, Type 2	Pulmonary Disease, Chronic Obstructive	0.98398821
Diabetes Mellitus, Type 2	Schizophrenia	0.98580679
Diabetes Mellitus, Type 2	Stomach Neoplasms	0.98641347
Diabetes Mellitus, Type 2	Urinary Bladder Neoplasms	0.98382826
Endometrial Neoplasms	Esophageal Neoplasms	0.98379492
Endometrial Neoplasms	Ovarian Neoplasms	0.98598974
Endometrial Neoplasms	Stomach Neoplasms	0.98381219
Esophageal Neoplasms	Glioma	0.98417034
Esophageal Neoplasms	Kidney Failure, Chronic	0.98488328
Esophageal Neoplasms	Leukemia, B-Cell, Chronic	0.983749
Esophageal Neoplasms	Liver Neoplasms	0.98465156
Esophageal Neoplasms	Lung Neoplasms	0.98858184
Esophageal Neoplasms	Lymphoma	0.98550773
Esophageal Neoplasms	Multiple Sclerosis	0.98389392
Esophageal Neoplasms	Ovarian Neoplasms	0.98644411
Esophageal Neoplasms	Prostatic Neoplasms	0.98379283
Esophageal Neoplasms	Pulmonary Disease, Chronic Obstructive	0.98521387
Esophageal Neoplasms	Stomach Neoplasms	0.98616473
Esophageal Neoplasms	Urinary Bladder Neoplasms	0.98596149
Glioma	Hepatitis B	0.98432304
Glioma	Hepatitis C	0.98375806
Glioma	Leukemia, Lymphocytic	0.98635044
Glioma	Leukemia, Lymphocytic, Acute	0.98622156
Glioma	Leukemia, Myelocytic, Acute	0.98735386
Glioma	Leukemia, Myeloid	0.98444253
Glioma	Lung Neoplasms	0.98628562
Glioma	Lymphoma	0.98744839
Glioma	Meningioma	0.98569326
Glioma	Stomach Neoplasms	0.98393107
Heart Diseases	Hypertension	0.98514483
Heart Diseases	Myocardial Infarction	0.98418119
Hepatitis B	Hepatitis C	0.99424676
Hepatitis B	Hypertension	0.98474742
Hepatitis B	Kidney Failure, Chronic	0.98502951
Hepatitis B	Liver Cirrhosis	0.98438928
Hepatitis B	Liver Neoplasms	0.98562112
Hepatitis B	Lung Neoplasms	0.98634105
Hepatitis B	Lupus Erythematosus, Systemic	0.98661302
Hepatitis B	Lymphoma	0.98743847
Hepatitis B	Multiple Sclerosis	0.98498974
Hepatitis B	Myocardial Infarction	0.98421756
Hepatitis B	Obesity	0.9842841
Hepatitis C	Hypertension	0.98376861
Hepatitis C	Kidney Failure, Chronic	0.98396104
Hepatitis C	Leukemia, Lymphocytic, Acute	0.98385556
Hepatitis C	Liver Neoplasms	0.98543883
Hepatitis C	Lung Neoplasms	0.98509351

Hepatitis C	Lupus Erythematosus, Systemic	0.98569311
Hepatitis C	Lymphoma	0.98575289
Hepatitis C	Multiple Sclerosis	0.9851868
Hepatitis C	Myocardial Infarction	0.98385469
Hodgkin Disease	Lymphoma	0.98369552
Hypertension	Ischemia	0.98395914
Hypertension	Kidney Failure, Chronic	0.98486644
Hypertension	Liver Cirrhosis	0.9837056
Hypertension	Lung Neoplasms	0.98580912
Hypertension	Metabolic Syndrome X	0.9877571
Hypertension	Multiple Sclerosis	0.98469119
Hypertension	Myocardial Infarction	0.98849478
Hypertension	Obesity	0.98972862
Hypertension	Schizophrenia	0.98426184
Ischemia	Myocardial Infarction	0.98365601
Ischemia	Obesity	0.98361726
Kidney Failure, Chronic	Liver Neoplasms	0.98538638
Kidney Failure, Chronic	Lung Neoplasms	0.9882643
Kidney Failure, Chronic	Lymphoma	0.9853608
Kidney Failure, Chronic	Metabolic Syndrome X	0.9856025
Kidney Failure, Chronic	Obesity	0.98618486
Kidney Failure, Chronic	Ovarian Neoplasms	0.98383828
Kidney Failure, Chronic	Pulmonary Disease, Chronic Obstructive	0.98381058
Kidney Failure, Chronic	Stomach Neoplasms	0.98610956
Kidney Failure, Chronic	Urinary Bladder Neoplasms	0.98512736
Leukemia, B-Cell, Chronic	Lung Neoplasms	0.98906243
Leukemia, B-Cell, Chronic	Lymphoma	0.98540092
Leukemia, B-Cell, Chronic	Stomach Neoplasms	0.9844053
Leukemia, Lymphocytic	Leukemia, Lymphocytic, Acute	0.99105228
Leukemia, Lymphocytic	Leukemia, Myelocytic, Acute	0.98779971
Leukemia, Lymphocytic	Leukemia, Myeloid	0.98498096
Leukemia, Lymphocytic	Lymphoma	0.98568274
Leukemia, Lymphocytic, Acute	Leukemia, Myelocytic, Acute	0.98794955
Leukemia, Lymphocytic, Acute	Leukemia, Myeloid	0.98416459
Leukemia, Lymphocytic, Acute	Lymphoma	0.98501226
Leukemia, Myelocytic, Acute	Leukemia, Myeloid	0.98813992
Leukemia, Myelocytic, Acute	Lymphoma	0.98581247
Leukemia, Myelocytic, Acute	Meningioma	0.98467326
Leukemia, Myeloid	Lymphoma	0.98444336
Liver Cirrhosis	Lung Neoplasms	0.98360323
Liver Cirrhosis	Myocardial Infarction	0.98381838
Liver Neoplasms	Lung Neoplasms	0.98716106
Liver Neoplasms	Obesity	0.98482561
Liver Neoplasms	Pulmonary Disease, Chronic Obstructive	0.9854322
Liver Neoplasms	Stomach Neoplasms	0.98517454
Liver Neoplasms	Urinary Bladder Neoplasms	0.98390591
Lung Neoplasms	Lymphoma	0.98720749
Lung Neoplasms	Lymphoma, Non-Hodgkin	0.98441362
Lung Neoplasms	Metabolic Syndrome X	0.98432669
Lung Neoplasms	Multiple Sclerosis	0.98488523
Lung Neoplasms	Obesity	0.98639819
Lung Neoplasms	Ovarian Neoplasms	0.9873794
Lung Neoplasms	Pancreatic Neoplasms	0.98442212
Lung Neoplasms	Prostatic Neoplasms	0.98530727
Lung Neoplasms	Pulmonary Disease, Chronic Obstructive	0.98953975
Lung Neoplasms	Stomach Neoplasms	0.98849811

Lung Neoplasms	Urinary Bladder Neoplasms	0.98865363
Lupus Erythematosus, Systemic	Lymphoma	0.98420509
Lymphoma	Lymphoma, Non-Hodgkin	0.99013943
Lymphoma	Multiple Myeloma	0.98490546
Lymphoma	Stomach Neoplasms	0.98505788
Lymphoma, B-Cell	Lymphoma, Large-Cell, Diffuse	0.98633325
Lymphoma, Non-Hodgkin	Multiple Myeloma	0.98473238
Metabolic Syndrome X	Myocardial Infarction	0.9845326
Metabolic Syndrome X	Obesity	0.98841429
Metabolic Syndrome X	Osteoporosis	0.98586218
Multiple Sclerosis	Obesity	0.98450463
Obesity	Osteoporosis	0.98370033
Obesity	Polycystic Ovary Syndrome	0.98482318
Obesity	Prostatic Neoplasms	0.98429573
Obesity	Schizophrenia	0.98484432
Ovarian Neoplasms	Pulmonary Disease, Chronic Obstructive	0.98383284
Ovarian Neoplasms	Stomach Neoplasms	0.98742354
Ovarian Neoplasms	Urinary Bladder Neoplasms	0.98464459
Pulmonary Disease, Chronic Obstructive	Stomach Neoplasms	0.98466255
Pulmonary Disease, Chronic Obstructive	Urinary Bladder Neoplasms	0.98766118
Stomach Neoplasms	Urinary Bladder Neoplasms	0.98465646

Supplementary Table 2: The mpDisNet-predicted 100 comorbid disease pairs.

Source	Target	similarity
Alzheimer Disease	Long QT Syndrome	0.88377895
Anemia, Sickle Cell	Cerebral Infarction	0.959475536
Anemia, Sickle Cell	Mental Retardation	0.92063305
Anemia, Sickle Cell	Mucocutaneous Lymph Node Syndrome	0.937345709
Arthritis, Rheumatoid	Friedreich Ataxia	0.883647145
Arthritis, Rheumatoid	Long QT Syndrome	0.871775004
Arthritis, Rheumatoid	Multiple Endocrine Neoplasia Type 1	0.908967166
Arthritis, Rheumatoid	Osteogenesis Imperfecta	0.898680006
Arthritis, Rheumatoid	Telangiectasia, Hereditary Hemorrhagic	0.865650556
Arthritis, Rheumatoid	Thalassemia	0.916529494
Asthma	Multiple Endocrine Neoplasia Type 1	0.910167409
Asthma	Telangiectasia, Hereditary Hemorrhagic	0.867767363
Asthma	Thalassemia	0.921268812
Autistic Disorder	DiGeorge Syndrome	0.876359596
Autistic Disorder	Long QT Syndrome	0.884154918
Autoimmune Lymphoproliferative Syndrome	Bipolar Disorder	0.862429743
Autoimmune Lymphoproliferative Syndrome	Cataract	0.846010311
Autoimmune Lymphoproliferative Syndrome	Celiac Disease	0.869614916
Autoimmune Lymphoproliferative Syndrome	Crohn Disease	0.877102919
Bipolar Disorder	Friedreich Ataxia	0.895441539
Bipolar Disorder	Telangiectasia, Hereditary Hemorrhagic	0.844632261
Bipolar Disorder	Thalassemia	0.908394697
Brain Neoplasms	Long QT Syndrome	0.877148389
Brain Neoplasms	Multiple Endocrine Neoplasia Type 1	0.912947692
Brain Neoplasms	Osteogenesis Imperfecta	0.906857593
Brain Neoplasms	Telangiectasia, Hereditary Hemorrhagic	0.86282811
Brain Neoplasms	Thalassemia	0.913234913
Breast Neoplasms	Long QT Syndrome	0.878023109
Breast Neoplasms	Thalassemia	0.919227692
Burkitt Lymphoma	Long QT Syndrome	0.795018148
Cataract	Friedreich Ataxia	0.862387952
Cataract	Long QT Syndrome	0.846656727
Cataract	Multiple Endocrine Neoplasia Type 1	0.891000081
Cataract	Osteogenesis Imperfecta	0.885094657
Cataract	Retinitis Pigmentosa	0.88522725
Cataract	Telangiectasia, Hereditary Hemorrhagic	0.83093475
Cataract	Thalassemia	0.881922676
Celiac Disease	Down Syndrome	0.950323165
Celiac Disease	Long QT Syndrome	0.867790085
Celiac Disease	Osteogenesis Imperfecta	0.895050164
Celiac Disease	Retinitis Pigmentosa	0.883439596
Celiac Disease	Telangiectasia, Hereditary Hemorrhagic	0.863223629
Celiac Disease	Thalassemia	0.908074923
Cerebral Infarction	Friedreich Ataxia	0.893480417
Cerebral Infarction	Long QT Syndrome	0.868903821
Cerebral Infarction	Multiple Endocrine Neoplasia Type 1	0.897789769
Cerebral Infarction	Osteogenesis Imperfecta	0.901453881

Cerebral Infarction	Retinitis Pigmentosa	0.884800732
Cerebral Infarction	Telangiectasia, Hereditary Hemorrhagic	0.859235693
Cerebral Infarction	Thalassemia	0.931756901
Colorectal Neoplasms	Telangiectasia, Hereditary Hemorrhagic	0.871068863
Colorectal Neoplasms	Thalassemia	0.913359088
Crohn Disease	Cystic Fibrosis	0.948487942
Crohn Disease	Familial Mediterranean Fever	0.903763634
Crohn Disease	Long QT Syndrome	0.877117859
Crohn Disease	Retinitis Pigmentosa	0.858360243
Crohn Disease	Telangiectasia, Hereditary Hemorrhagic	0.855701262
Crohn Disease	Thalassemia	0.914728173
Cystic Fibrosis	Mental Retardation	0.946905933
DiGeorge Syndrome	Mental Retardation	0.880473087
DiGeorge Syndrome	Osteoarthritis	0.877733149
DiGeorge Syndrome	Schizophrenia	0.884501597
Down Syndrome	Mental Retardation	0.946847286
Epilepsy	Long QT Syndrome	0.896304609
Epilepsy	Osteogenesis Imperfecta	0.881573118
Epilepsy	Telangiectasia, Hereditary Hemorrhagic	0.847149935
Epilepsy	Thalassemia	0.900623545
Friedreich Ataxia	Glaucoma	0.886288654
Friedreich Ataxia	Mental Retardation	0.871810639
Glaucoma	Long QT Syndrome	0.875035008
Glaucoma	Multiple Endocrine Neoplasia Type 1	0.894753529
Gout	Long QT Syndrome	0.861469602
Gout	Retinitis Pigmentosa	0.846508532
Gout	Telangiectasia, Hereditary Hemorrhagic	0.846711676
Gout	Thalassemia	0.871380227
Kidney Neoplasms	Long QT Syndrome	0.852654094
Kidney Neoplasms	Telangiectasia, Hereditary Hemorrhagic	0.848121554
Kidney Neoplasms	Thalassemia	0.888938627
Long QT Syndrome	Lung Neoplasms	0.879435196
Long QT Syndrome	Mental Retardation	0.900263417
Long QT Syndrome	Mucocutaneous Lymph Node Syndrome	0.869763547
Long QT Syndrome	Osteoarthritis	0.868596049
Long QT Syndrome	Prostatic Neoplasms	0.873711733
Long QT Syndrome	Psoriasis	0.876188572
Long QT Syndrome	Schizophrenia	0.889944888
Long QT Syndrome	Uterine Neoplasms	0.894333596
Lung Neoplasms	Thalassemia	0.920317475
Mental Retardation	Osteogenesis Imperfecta	0.872733159
Mental Retardation	Retinitis Pigmentosa	0.864296155
Mental Retardation	Thalassemia	0.91636092
Mucocutaneous Lymph Node Syndrome	Thalassemia	0.909956341
Multiple Endocrine Neoplasia Type 1	Stomach Neoplasms	0.918279365
Osteoarthritis	Telangiectasia, Hereditary Hemorrhagic	0.857912694
Osteoarthritis	Thalassemia	0.904729914
Prostatic Neoplasms	Thalassemia	0.917720917

Psoriasis	Telangiectasia, Hereditary Hemorrhagic	0.861097381
Psoriasis	Thalassemia	0.90872626
Telangiectasia, Hereditary Hemorrhagic	Uterine Neoplasms	0.868010995
Bipolar Disorder	Long QT Syndrome	0.884813424
Bipolar Disorder	Osteogenesis Imperfecta	0.885962878

Supplementary Table 3: The 66 clinically reported disease-disease pairs.

Disease1	mesh.id1	Disease2	mesh.id2
Alzheimer Disease	D000544	Schizophrenia	D012559
Alzheimer Disease	D000544	Mental Retardation	D008607
Alzheimer Disease	D000544	Brain Diseases	D001927
Alzheimer Disease	D000544	Bipolar Disorder	D001714
Alzheimer Disease	D000544	Diabetic Nephropathies	D003928
Alzheimer Disease	D000544	Epilepsy	D004827
Alzheimer Disease	D000544	Diabetes Mellitus	D003920
Anemia	D000740	Endometriosis	D004715
Asthma	D001249	Arthritis, Rheumatoid	D001172
Asthma	D001249	Diabetes Mellitus	D003920
Asthma	D001249	Obesity	D009765
Asthma	D001249	Pulmonary Disease, Chronic Obstructive	D029424
Bipolar Disorder	D001714	Schizophrenia	D012559
Brain Diseases	D001927	Lipid Metabolism, Inborn Errors	D008052
Brain Diseases	D001927	Diabetes Mellitus	D003920
Cardiomyopathy, Dilated	D002311	Hyperlipoproteinemia Type III	D006952
Cardiomyopathy, Dilated	D002311	Diabetic Nephropathies	D003928
Cardiomyopathy, Dilated	D002311	Myocardial Infarction	D009203
Cardiomyopathy, Dilated	D002311	Diabetes Mellitus	D003920
Cardiomyopathy, Dilated	D002311	Lipid Metabolism, Inborn Errors	D008052
Cardiomyopathy, Dilated	D002311	Obesity	D009765
Pulmonary Disease, Chronic Obstructive	D029424	Arthritis, Rheumatoid	D001172
Pulmonary Disease, Chronic Obstructive	D029424	Myocardial Infarction	D009203
Diabetes Mellitus	D003920	Obesity	D009765
Diabetes Mellitus	D003920	Lipid Metabolism, Inborn Errors	D008052
Diabetic Nephropathies	D003928	Myocardial Infarction	D009203
Diabetic Nephropathies	D003928	Diabetes Mellitus	D003920
Diabetic Nephropathies	D003928	Lipid Metabolism, Inborn Errors	D008052
Diabetic Nephropathies	D003928	Obesity	D009765
Endometriosis	D004715	Arthritis, Rheumatoid	D001172
Epilepsy	D004827	Multiple Sclerosis	D009103
Epilepsy	D004827	Brain Diseases	D001927
Epilepsy	D004827	Schizophrenia	D012559
Huntington Disease	D006816	Mental Retardation	D008607
Huntington Disease	D006816	Epilepsy	D004827
Huntington Disease	D006816	Diabetic Nephropathies	D003928
Huntington Disease	D006816	Bipolar Disorder	D001714

Huntington Disease	D006816	Schizophrenia	D012559
Hyperlipoproteinemia Type III	D006952	Diabetes Mellitus	D003920
Hyperlipoproteinemia Type III	D006952	Lipid Metabolism, Inborn Errors	D008052
Hyperlipoproteinemia Type III	D006952	Myocardial Infarction	D009203
Hyperlipoproteinemia Type III	D006952	Obesity	D009765
Hyperlipoproteinemia Type III	D006952	Diabetic Nephropathies	D003928
Hyperlipoproteinemia Type III	D006952	Brain Diseases	D001927
Infertility, Male	D007248	Obesity	D009765
Infertility, Male	D007248	Hyperlipoproteinemia Type III	D006952
Infertility, Male	D007248	Cystic Fibrosis	D003550
Infertility, Male	D007248	Diabetic Nephropathies	D003928
Lipid Metabolism, Inborn Errors	D008052	Obesity	D009765
Malaria, Cerebral	D016779	Epilepsy	D004827
Malaria, Cerebral	D016779	Anemia	D000740
Mental Retardation	D008607	Bipolar Disorder	D001714
Mental Retardation	D008607	Schizophrenia	D012559
Multiple Sclerosis	D009103	Diabetes Mellitus	D003920
Myocardial Infarction	D009203	Diabetes Mellitus	D003920
Myocardial Infarction	D009203	Obesity	D009765
Myocardial Infarction	D009203	Lipid Metabolism, Inborn Errors	D008052
Polycystic Kidney Diseases	D007690	Diabetes Mellitus	D003920
Polycystic Ovary Syndrome	D011085	Obesity	D009765
Polycystic Ovary Syndrome	D011085	Diabetes Mellitus	D003920
Polycystic Ovary Syndrome	D011085	Diabetic Nephropathies	D003928
Polycystic Ovary Syndrome	D011085	Myocardial Infarction	D009203
Polycystic Ovary Syndrome	D011085	Lipid Metabolism, Inborn Errors	D008052
Arthritis, Rheumatoid	D001172	Diabetes Mellitus	D003920
Sarcoidosis, Pulmonary	D017565	Cardiomyopathy, Dilated	D002311
Sarcoidosis, Pulmonary	D017565	Pulmonary Disease, Chronic Obstructive	D029424

Supplementary Table 4: The 52 new clinically reported disease-disease pairs.

disease1	mesh.id1	disease2	mesh.id2
Muscular Atrophy, Spinal	D009134	Adenoma	D000236
Adrenal Cortex Neoplasms	D000306	Arthritis	D001168
Asthma	D001249	Arthritis, Rheumatoid	D001172
Endometriosis	D004715	Arthritis, Rheumatoid	D001172
Pulmonary Disease, Chronic Obstructive	D029424	Arthritis, Rheumatoid	D001172
Alzheimer Disease	D000544	Bipolar Disorder	D001714
Huntington Disease	D006816	Bipolar Disorder	D001714
Lymphoma, Non-Hodgkin	D008228	Carcinoma, Renal Cell	D002292
Osteoporosis	D010024	Cardiomyopathies	D009202
Ovarian Diseases	D010049	Cardiomyopathy, Hypertrophic	D002312
Infertility, Male	D007248	Cystic Fibrosis	D003550
Alzheimer Disease	D000544	Diabetes Mellitus	D003920
Arthritis, Rheumatoid	D001172	Diabetes Mellitus	D003920
Asthma	D001249	Diabetes Mellitus	D003920
Cardiomyopathy, Dilated	D002311	Diabetes Mellitus	D003920
Multiple Sclerosis	D009103	Diabetes Mellitus	D003920
Myocardial Infarction	D009203	Diabetes Mellitus	D003920
Polycystic Kidney Diseases	D007690	Diabetes Mellitus	D003920
Polycystic Ovary Syndrome	D011085	Diabetes Mellitus	D003920
Anemia	D000740	Endometriosis	D004715
Sjogren's Syndrome	D012859	Glioblastoma	D005909
Dengue Hemorrhagic Fever	D019595	Hepatitis E	D016751
Atherosclerosis	D050197	Influenza, Human	D007251
Atherosclerosis	D050197	Ischemia	D007511
Adenoma	D000236	Lymphoma, Non-Hodgkin	D008228
Thyroid Neoplasms	D013964	Mastocytosis, Systemic	D034721
Carcinoma, Renal Cell	D002292	Meningioma	D008579
Long QT Syndrome	D008133	Meningioma	D008579
Encephalitis	D004660	Meningitis	D008581
Pneumonia	D011014	Meningitis	D008581
Cardiomyopathy, Dilated	D002311	Myocardial Infarction	D009203
Polycystic Ovary Syndrome	D011085	Myocardial Infarction	D009203
Pulmonary Disease, Chronic Obstructive	D029424	Myocardial Infarction	D009203
Peritonitis	D010538	Narcolepsy	D009290
Asthma	D001249	Obesity	D009765
Cardiomyopathy, Dilated	D002311	Obesity	D009765
Diabetes Mellitus	D003920	Obesity	D009765
Infertility, Male	D007248	Obesity	D009765
Myocardial Infarction	D009203	Obesity	D009765
Polycystic Ovary Syndrome	D011085	Obesity	D009765
Thalassemia	D013789	Ovarian Neoplasms	D010051
Nephrolithiasis	D053040	Pemphigus	D010392
Autistic Disorder	D001321	Peripheral Nervous System Disorders	D010523
Influenza, Human	D007251	Pneumonia	D011014
Asthma	D001249	Pulmonary Disease, Chronic Obstructive	D029424
Immune System Diseases	D007154	Pulmonary Heart Disease	D011660
Alzheimer Disease	D000544	Schizophrenia	D012559
Bipolar Disorder	D001714	Schizophrenia	D012559
Huntington Disease	D006816	Schizophrenia	D012559
Dengue Hemorrhagic Fever	D019595	Testicular Neoplasms	D013736

Diabetes, Gestational
Adrenal Cortex Neoplasms

D016640 Varicocele
D000306 Vasculitis

D014646
D014657