

Supplementary Table S4. Enrichment and depletion levels within KEGG circulatory system-associated genes

Germ Layers

Name	Enrichment ratio	Observed	Expected
endoderm	1.075556146	79	73.45037292
ectoderm	1.025564975	98	95.55708548
mesoderm	0.985262238	97	98.45094664

Organs

Name	Enrichment ratio	Observed	Expected
appendix	5.586538462	3	0.537005164
parathyroid	2.578402367	5	1.939185313
heart valve	2.165217391	52	24.01606426
aorta	2.052197802	12	5.847389558
cerebrospinal fluid	1.888407367	16	8.472748135
meninges	1.779782165	24	13.48479633
red blood cells	1.684383456	40	23.74756168
adrenal gland	1.664075286	14	8.413080895
placenta	1.646033654	11	6.682730924
pancreas	1.627147125	25	15.3643144
heart	1.504945055	66	43.85542169
lymph vessels	1.478789593	3	2.028686173
thyroid	1.433977787	8	5.578886976
coagulation system	1.411815426	31	21.95754446
abdominal wall	1.388744024	22	15.84165232
sinuses	1.385092181	5	3.609868044
gallbladder	1.38020362	7	5.071715433
diaphragm	1.355557127	11	8.114744693
tongue	1.347108565	17	12.61962134
lung	1.34255931	60	44.69076305
spinal cord	1.327494288	44	33.14515204
hypothalamus	1.299194991	5	3.848537005
ear	1.284650297	76	59.16006885
vocal cords	1.260911502	12	9.516924842

chin	1.257575758	26	20.6746988
blood vessels	1.253631562	61	48.65863454
esophagus	1.251755506	27	21.5697074
duodenum	1.234919028	7	5.668387837
stomach	1.23115658	31	25.17957544
lymph nodes	1.228453484	7	5.698221457
blood	1.217497599	64	52.56683878
biliary tract	1.20889029	11	9.099254159
pharynx	1.205314805	21	17.42283419
lower limb	1.190239004	68	57.13138267
upper limb	1.183902191	64	54.05851979
cranial nerve	1.166460427	53	45.43660356
forehead	1.155835544	28	24.2248996
bronchus	1.14400105	10	8.741250717
lacrimial apparatus	1.129861711	3	2.655192197
salivary gland	1.129861711	6	5.310384395
peripheral nerve	1.122882285	47	41.85656913
rectum	1.122653662	14	12.47045324
uterus	1.115758028	24	21.51004016
cheek	1.112943209	17	15.27481354
sweat gland	1.110576923	11	9.904761905
cerebellum	1.104710121	38	34.39816408
chest wall	1.091165193	32	29.32644865
face	1.067491426	55	51.52266208
head	1.052615687	96	91.20137694
peripheral nervous system	1.047475962	64	61.09925416
brain	1.045223325	87	83.23580034
sternum	1.044964029	26	24.88123924
larynx	1.038206263	14	13.48479633
eyelid	1.025791041	34	33.14515204
vas deferens	0.966900888	3	3.1026965
rib	0.965972068	30	31.05679862
rib cage	0.965972068	30	31.05679862

knee	0.964806085	31	32.13080895
kidney	0.962850435	32	33.2346529
eye	0.960791636	62	64.53012048
hair	0.954769544	28	29.32644865
mouth	0.950767947	51	53.64084911
inner ear	0.94610732	7	7.398737808
foot	0.939791517	48	51.07515777
fallopian tube	0.939791517	3	3.192197361
nose	0.936781995	32	34.15949512
pituitary gland	0.933250045	12	12.8582903
neck	0.931770863	38	40.78255881
ankle	0.926799007	30	32.36947791
hip	0.926799007	30	32.36947791
elbow	0.926651756	29	31.29546758
wrist	0.921381699	29	31.47446931
pelvis	0.911674454	30	32.90648308
toes	0.909612775	40	43.97475617
hand	0.908716053	44	48.41996558
fingers	0.900582216	41	45.52610442
digit	0.897836538	42	46.77911647
white blood cells	0.893846154	26	29.08777969
vertebrae	0.887087393	28	31.56397017
skull	0.886283204	50	56.41537579
shoulder	0.872583207	29	33.2346529
lips	0.871658483	22	25.23924269
skin	0.864914511	57	65.90246701
large intestine	0.86474674	21	24.28456684
intestine	0.863008001	25	28.96844521
spinal column	0.838729635	28	33.383821
scalp	0.82968393	5	6.026391279
arm	0.828044238	25	30.19162364
teeth	0.817542214	17	20.79403328
scapula	0.809231747	19	23.47905909

small intestine	0.799196246	17	21.2713712
liver	0.798076923	23	28.81927711
mandible	0.793354574	32	40.3350545
maxilla	0.792768207	32	40.36488812
jaw	0.787529651	32	40.63339071
anus	0.779516995	5	6.414228342
trachea	0.776507277	6	7.726907631
nail	0.768789697	10	13.00745841
spleen	0.764961698	11	14.37980493
clavicle	0.72867893	18	24.70223752
ovary	0.719296798	10	13.90246701
humerus	0.714865111	18	25.17957544
shin	0.702941926	19	27.0292599
ulna	0.697462574	17	24.3740677
testis	0.688196767	17	24.70223752
fibula	0.687573964	16	23.27022375
forearm	0.686869483	20	29.11761331
thigh	0.68186872	19	27.86460126
tibia	0.674600871	16	23.71772806
femur	0.669596854	17	25.38841079
bone marrow	0.652442448	8	12.2616179
radius	0.644600592	16	24.821572
ureter	0.635101215	9	14.17096959
outer ear	0.586769904	16	27.26792886
breast	0.58041958	8	13.78313253
prostate	0.576261847	6	10.41193345
penis	0.52048495	10	19.21285141
vagina	0.520254136	7	13.45496271
urethra	0.478846154	5	10.44176707
vulva	0.47477664	5	10.53126793
olfactory bulb	0.443963321	2	4.504876649
epiglottis	0.438159879	2	4.56454389
urinary bladder	0.429733728	6	13.96213425

middle ear	0.346989967	5	14.40963855
thymus	0	0	2.237521515

Body Regions

Name	Enrichment ratio	Observed	Expected
thorax	1.249869622	88	70.40734366
limbs	1.142701049	69	60.38324727
head and neck	1.061406927	100	94.21457258
non-specific	1.012856832	96	94.78141136
abdomen	0.933404735	56	59.99541021
pelvis	0.802322013	45	56.08720597

Body Systems

Name	Enrichment ratio	Observed	Expected
respiratory	1.215428198	64	52.65633964
cardiovascular	1.152523694	72	62.47160069
skeletal muscle	1.085755814	78	71.83935743
endocrine	1.041449057	27	25.92541595
nervous	1.040407973	92	88.42685026
digestive	0.930132817	54	58.0562249
urinary	0.901747177	35	38.81353987
reproductive	0.888272678	34	38.27653471
integumentary	0.856815947	58	67.69248422
skeleton	0.854556213	58	67.87148594
immune	0.803543203	35	43.55708548
lymphatic	0.522254304	11	21.06253586

P-value	FDR
0.118410291	0.309752542
0.206501695	0.309752542
0.253529518	0.760588553

P-value	FDR
0.043543819	0.320175141
0.054283093	0.37040878
1.64927E-09	2.06158E-07
0.013622756	0.141903703
0.00923515	0.128265974
0.002862445	0.059634279
0.000206296	0.008595673
0.036370122	0.284141578
0.063135521	0.394597003
0.007272685	0.128265974
8.16797E-06	0.000510498
0.282218091	0.80938992
0.168726101	0.727267679
0.019632197	0.17528747
0.056302135	0.37040878
0.249912211	0.80938992
0.209689027	0.770915539
0.161435749	0.720695307
0.106592127	0.512462149
0.001457812	0.03644531
0.013506404	0.141903703
0.286495329	0.80938992
0.000397046	0.012407697
0.208023184	0.770915539

0.102831946	0.512462149
0.008319013	0.128265974
0.101682805	0.512462149
0.287292969	0.80938992
0.097414992	0.512462149
0.291380371	0.80938992
0.013113847	0.141903703
0.258522869	0.80938992
0.179303749	0.741932148
0.016526053	0.158904356
0.026466445	0.220553709
0.070016896	0.416767238
0.19360819	0.756281993
0.32454176	0.845160834
0.399723613	0.960874071
0.370122615	0.925306539
0.154401934	0.714823768
0.3186038	0.845160834
0.272707644	0.80938992
0.313240911	0.845160834
0.350666324	0.894556948
0.227599027	0.80938992
0.279431423	0.80938992
0.249337374	0.80938992
0.080207321	0.455723412
0.284455194	0.80938992
0.183999173	0.741932148
0.393130266	0.960874071
0.428969596	0.992985176
0.424454903	0.992985176
0.485259902	0.99796848
0.41469781	0.762312151
0.41469781	0.762312151

0.409035831	0.762312151
0.400997338	0.762312151
0.300945041	0.653908243
0.390594358	0.762312151
0.300171877	0.653908243
0.459307035	0.832077961
0.27135039	0.652284592
0.488481883	0.872289076
0.327814411	0.671750842
0.411522919	0.762312151
0.287908679	0.653908243
0.3096376	0.653908243
0.3096376	0.653908243
0.313875957	0.653908243
0.300388932	0.653908243
0.270669434	0.652284592
0.213312212	0.592533922
0.190206652	0.544048615
0.183296111	0.544048615
0.170732108	0.544048615
0.250702963	0.639548376
0.223153983	0.595158535
0.10122603	0.433188079
0.184956012	0.544048615
0.230007484	0.598977823
0.034866562	0.255297196
0.223779609	0.595158535
0.191505112	0.544048615
0.125942512	0.47002272
0.351799522	0.709273229
0.12784618	0.47002272
0.174949169	0.544048615
0.14402991	0.51040921

0.146997852	0.51040921
0.097113336	0.433188079
0.043582835	0.255297196
0.043033177	0.255297196
0.03833788	0.255297196
0.296104073	0.653908243
0.269295447	0.652284592
0.187013115	0.544048615
0.167578169	0.544048615
0.055985174	0.291589447
0.126772725	0.47002272
0.044932307	0.255297196
0.0316356	0.255297196
0.038632695	0.255297196
0.032870326	0.255297196
0.038109432	0.255297196
0.019438839	0.255297196
0.020783936	0.255297196
0.030438099	0.255297196
0.023166692	0.255297196
0.091407967	0.42318503
0.016967589	0.255297196
0.062513114	0.312565571
0.004009606	0.198507469
0.039446963	0.255297196
0.066672687	0.320541763
0.006352239	0.198507469
0.022276501	0.255297196
0.028939149	0.255297196
0.027231284	0.255297196
0.108623943	0.437999769
0.103965139	0.433188079
0.006280187	0.198507469

0.001460049	0.18250616
0.050309391	0.273420605

P-value	FDR
6.83607E-05	0.000410164
0.044248748	0.088497495
0.027223402	0.081670206
0.35345295	0.530179425
0.211114753	0.633344259
0.013887309	0.083323855

P-value	FDR
0.013706713	0.164480558
0.028529293	0.171175759
0.097256817	0.389027267
0.398468144	0.956323546
0.170887608	0.512662823
0.208925165	0.374478982
0.218446073	0.374478982
0.190496074	0.374478982
0.023330483	0.093321931
0.021312647	0.093321931
0.041741826	0.125225477
0.004297075	0.051564905

Supplementary Table S4. Enrichment and depletion levels within KEGG immune system-associated genes

Germ Layers

Name	Enrichment ratio	Observed	Expected
endoderm	1.150436637	91	79.10040161
mesoderm	1.018636364	108	106.0240964
ectoderm	0.932875429	96	102.9076305

Organs

Name	Enrichment ratio	Observed	Expected
sinuses	5.144628099	20	3.887550201
lymph nodes	4.888743455	30	6.136546185
bone marrow	4.089416058	54	13.20481928
lymph vessels	3.661764706	8	2.184738956
appendix	3.458333333	2	0.578313253
bronchus	2.549488055	24	9.413654618
white blood cells	2.394230769	75	31.3253012
aorta	2.382015306	15	6.297188755
anus	2.31627907	16	6.907630522
spleen	2.260114108	35	15.48594378
thyroid	2.163770053	13	6.008032129
hypothalamus	1.930232558	8	4.144578313
meninges	1.859236726	27	14.52208835
scalp	1.849009901	12	6.489959839
small intestine	1.789796634	41	22.90763052
rectum	1.78708134	24	13.42971888
large intestine	1.758906634	46	26.15261044
placenta	1.667410714	12	7.196787149
nail	1.641915138	23	14.00803213
blood	1.589812713	90	56.61044177
coagulation system	1.56470788	37	23.64658635
intestine	1.506565396	47	31.19678715
knee	1.473885794	51	34.60240964
elbow	1.453884652	49	33.70281124
wrist	1.445616114	49	33.89558233
ankle	1.434331797	50	34.85943775

middle ear	1.417701863	22	15.51807229
hip	1.405645161	49	34.85943775
salivary gland	1.398876404	8	5.718875502
shoulder	1.396992819	50	35.79116466
lung	1.392106142	67	48.12851406
trachea	1.321911197	11	8.321285141
sweat gland	1.3125	14	10.66666667
toes	1.266960651	60	47.35742972
liver	1.256599379	39	31.03614458
stomach	1.253850711	34	27.11646586
tongue	1.250886525	17	13.59036145
teeth	1.25035868	28	22.3935743
digit	1.230707908	62	50.37751004
cheek	1.215820313	20	16.4497992
fingers	1.203391219	59	49.02811245
hand	1.169824399	61	52.14457831
foot	1.163551402	64	55.00401606
esophagus	1.162344398	27	23.22891566
pituitary gland	1.155452436	16	13.84738956
scapula	1.146918679	29	25.28514056
uterus	1.122399445	26	23.16465863
fibula	1.117307692	28	25.06024096
humerus	1.106338863	30	27.11646586
lower limb	1.105221932	68	61.52610442
ulna	1.104804162	29	26.24899598
adrenal gland	1.103723404	10	9.060240964
upper limb	1.099337748	64	58.21686747
gallbladder	1.098529412	6	5.46184739
tibia	1.096226415	28	25.54216867
neck	1.09290417	48	43.91967871
clavicle	1.090126812	29	26.60240964
skin	1.084936623	77	70.97188755
radius	1.084885817	29	26.73092369
sternum	1.082284173	29	26.79518072
mouth	1.073275862	62	57.76706827
forehead	1.073275862	28	26.08835341

blood vessels	1.068669528	56	52.40160643
lips	1.066932624	29	27.18072289
shin	1.064983444	31	29.10843373
chest wall	1.044888098	33	31.58232932
thigh	1.033056745	31	30.00803213
chin	1.033008658	23	22.26506024
face	1.027287203	57	55.48594378
femur	1.024089307	28	27.34136546
forearm	1.020491803	32	31.35742972
rib	1.016570605	34	33.44578313
rib cage	1.016570605	34	33.44578313
mandible	0.989922337	43	43.437751
maxilla	0.989190687	43	43.46987952
skull	0.987572713	60	60.75502008
cerebrospinal fluid	0.986355634	9	9.124497992
arm	0.984189723	32	32.51405622
jaw	0.982654185	43	43.75903614
nose	0.97860262	36	36.78714859
parathyroid	0.957692308	2	2.088353414
head	0.9468842	93	98.21686747
breast	0.943181818	14	14.84337349
vertebrae	0.941398866	32	33.99196787
red blood cells	0.938442211	24	25.57429719
biliary tract	0.918442623	9	9.799196787
hair	0.918234995	29	31.58232932
spinal column	0.917895442	33	35.95180723
pelvis	0.90299184	32	35.437751
vas deferens	0.897836538	3	3.341365462
abdominal wall	0.879237288	15	17.06024096
fallopian tube	0.872663551	3	3.437751004
peripheral nerve	0.865199572	39	45.07630522
ear	0.86327534	55	63.71084337
brain	0.859005376	77	89.63855422
larynx	0.826327434	12	14.52208835
duodenum	0.819078947	5	6.104417671
epiglottis	0.81372549	4	4.915662651

urethra	0.800357143	9	11.24497992
eye	0.791435506	55	69.4939759
testis	0.789402174	21	26.60240964
ureter	0.786315789	12	15.26104418
outer ear	0.783233042	23	29.36546185
heart	0.762244898	36	47.22891566
kidney	0.754376122	27	35.79116466
heart valve	0.734627329	19	25.86345382
urinary bladder	0.731570513	11	15.03614458
pancreas	0.725242718	12	16.54618474
peripheral nervous system	0.714294434	47	65.79919679
pharynx	0.692851027	13	18.76305221
eyelid	0.672367237	24	35.69477912
cranial nerve	0.633535785	31	48.93172691
vagina	0.621119734	9	14.48995984
cerebellum	0.620880312	23	37.04417671
spinal cord	0.616336634	22	35.69477912
ovary	0.601126609	9	14.97188755
vocal cords	0.585423197	6	10.24899598
penis	0.483307453	10	20.69076305
diaphragm	0.457720588	4	8.738955823
vulva	0.440864023	5	11.34136546
thymus	0.415	1	2.409638554
olfactory bulb	0.412251656	2	4.851405622
inner ear	0.376512097	3	7.967871486
prostate	0.356733524	4	11.21285141
lacrimal apparatus	0.349719101	1	2.859437751

Body Regions

Name	Enrichment ratio	Observed	Expected
limbs	1.045701581	68	65.02811245
thorax	1.041896186	79	75.82329317
non-specific	1.038479698	106	102.0722892
abdomen	1.021506713	66	64.61044177
head and neck	0.946168461	96	101.4618474
pelvis	0.894015957	54	60.40160643

Body Systems

Name	Enrichment ratio	Observed	Expected
lymphatic	2.777443343	63	22.68273092
immune	1.748116438	82	46.90763052
respiratory	1.35786119	77	56.70682731
digestive	1.119604317	70	62.52208835
reproductive	1.067420109	44	41.22088353
integumentary	1.056247245	77	72.89959839
skeleton	0.971373626	71	73.09236948
cardiovascular	0.921561605	62	67.27710843
nervous	0.903087045	86	95.22891566
endocrine	0.859608746	24	27.91967871
skeletal muscle	0.736762874	57	77.36546185
urinary	0.669869331	28	41.79919679

P-value	FDR
0.006061024	0.018183073
0.224823954	0.33723593
0.012645156	0.037935469

P-value	FDR
1.92273E-09	4.80682E-08
-3.95462E-12	4.94E-10
-9.14824E-14	5.72E-12
0.002424586	0.015153665
0.185097245	0.502981644
1.58729E-05	0.000283445
2.04071E-12	8.50295E-11
0.00156751	0.010885486
0.001416832	0.010742482
1.45251E-06	3.02606E-05
0.006997779	0.036446767
0.054168589	0.193459248
0.000814966	0.007836216
0.026913171	0.120148085
4.69915E-05	0.000652659
0.002822076	0.01533737
1.86965E-05	0.000292132
0.050194088	0.186707071
0.009437435	0.045372283
5.53852E-11	1.73079E-09
0.001860791	0.012242044
0.000744896	0.007759334
0.000638871	0.007259895
0.001236537	0.010742482
0.001413391	0.010742482
0.001460978	0.010742482

0.047591899	0.186707071
0.002683023	0.015321441
0.183770296	0.502981644
0.002696574	0.015321441
0.000195823	0.002447787
0.180350045	0.502981644
0.15341377	0.467724908
0.00861497	0.043074852
0.050784323	0.186707071
0.069940456	0.242848807
0.169681309	0.502981644
0.099243471	0.335281997
0.014544076	0.067333684
0.177257184	0.502981644
0.030266487	0.130458997
0.048221821	0.186707071
0.045733872	0.186707071
0.192482165	0.511920651
0.268299022	0.599959718
0.202541132	0.527450864
0.253925833	0.598881682
0.252314541	0.598881682
0.261725539	0.599959718
0.110800329	0.364474768
0.268781954	0.599959718
0.363992265	0.710922392
0.138573777	0.433043053
0.39340297	0.733960764
0.288178074	0.63196946
0.215756722	0.539391805
0.295237411	0.636287524
0.119923028	0.384368678
0.305107159	0.64601792
0.310088602	0.64601792
0.213220466	0.539391805
0.331120118	0.675746555

0.24868316	0.598881682
0.340576264	0.675746555
0.338519733	0.675746555
0.378932288	0.728715938
0.411028337	0.755566795
0.423306598	0.766859779
0.387458964	0.733823796
0.435948884	0.769420291
0.440735516	0.769420291
0.44934145	0.769420291
0.44934145	0.769420291
0.468503564	1
0.465994176	1
0.441462136	1
0.497475571	0.829125952
0.462333948	1
0.443502499	1
0.440593076	1
0.47676815	0.805351605
0.070143472	0.438396702
0.4183481	1
0.343442647	1
0.366601205	1
0.409910317	1
0.295383112	1
0.275399141	1
0.241937981	0.92963703
0.455921896	1
0.299663901	1
0.435509021	1
0.117571714	0.565248624
0.046849725	0.366013476
0.002017532	0.043334852
0.242656985	0.92963703
0.340342735	1
0.357738619	1

0.245424176	0.92963703
0.002417326	0.043334852
0.102250295	0.532553621
0.184276707	0.79429615
0.080941235	0.456969352
0.013981832	0.174772905
0.033479988	0.321922962
0.056394769	0.391630342
0.127729475	0.591340162
0.108010358	0.540051789
0.000148716	0.013052749
0.065900415	0.43355536
0.006812807	0.094622315
0.000208844	0.013052749
0.053360141	0.391630342
0.001572347	0.043334852
0.001793236	0.043334852
0.040905958	0.340882985
0.073865128	0.439673383
0.002426752	0.043334852
0.037276992	0.332830282
0.015690166	0.178297345
0.191086255	0.796192727
0.084082361	0.456969352
0.023471487	0.244494655
0.005926218	0.092597152
0.132475025	0.591406364

P-value

FDR

0.28673035	0.5734607
0.264154893	0.5734607
0.103758397	0.5734607
0.39690158	0.595352371
0.04405553	0.264333179
0.109894657	0.32968397

P-value	FDR
-2.67272E-12	-3.20726E-11
1.28849E-11	7.73094E-11
6.24956E-05	0.000249982
0.078393917	0.235181751
0.292355222	0.584710444
0.210897586	0.506154206
0.334504857	0.669009715
0.151576389	0.454729167
0.009466724	0.037866897
0.1947188	0.467325121
2.37548E-05	0.000285058
0.002599847	0.015599081

Supplementary Table S4. Enrichment and depletion levels within KEGG endocrine system-associated genes

Germ Layers

Name	Enrichment ratio	Observed	Expected
endoderm	1.109289222	123	110.881813
ectoderm	1.012100519	146	144.2544464
mesoderm	0.995807759	148	148.6230637

Organs

Name	Enrichment ratio	Observed	Expected
lymph vessels	4.244848258	13	3.062535858
appendix	3.700636943	3	0.810671256
vas deferens	2.988975992	14	4.683878371
fallopian tube	2.697660575	13	4.818990247
thyroid	2.493477298	21	8.421973609
lymph nodes	2.325007503	20	8.602122777
hypothalamus	2.065471782	12	5.809810671
adrenal gland	2.047160862	26	12.70051635
aorta	2.039126479	18	8.827309237
salivary gland	1.995849138	16	8.01663798
scalp	1.978558365	18	9.097532989
placenta	1.883359873	19	10.08835341
breast	1.874348581	39	20.80722892
nail	1.833343073	36	19.63625932
uterus	1.724568672	56	32.47188755
ovary	1.715316694	36	20.98737808
parathyroid	1.707986281	5	2.927423982
pituitary gland	1.700060591	33	19.41107286
sweat gland	1.671974522	25	14.95238095
sinuses	1.651523925	9	5.449512335
abdominal wall	1.547158948	37	23.91480207
cheek	1.517839371	35	23.05909352
bone marrow	1.512669115	28	18.51032702
sternum	1.490904092	56	37.56110155
fibula	1.480254777	52	35.12908778
lips	1.469756516	56	38.10154905

chest wall	1.468207943	65	44.27165806
scapula	1.467088597	52	35.44434882
tibia	1.452325442	52	35.80464716
anus	1.445830247	14	9.683017785
ulna	1.440394795	53	36.79546758
spleen	1.428046621	31	21.70797476
humerus	1.42062366	54	38.01147447
radius	1.414426139	53	37.47102697
cerebrospinal fluid	1.407284471	18	12.79059094
prostate	1.399667841	22	15.71801492
clavicle	1.394442906	52	37.2908778
vulva	1.383807582	22	15.89816408
pancreas	1.379654938	32	23.19420539
rib	1.365076451	64	46.883821
rib cage	1.365076451	64	46.883821
knee	1.360679879	66	48.50516351
femur	1.35675526	52	38.32673551
intestine	1.349150852	59	43.73121056
shin	1.347914118	55	40.80378657
testis	1.340810486	50	37.2908778
forehead	1.33988579	49	36.57028112
small intestine	1.339080408	43	32.11158921
teeth	1.337963428	42	31.39099254
elbow	1.333499299	63	47.24411933
ankle	1.330182864	65	48.86546185
coagulation system	1.327402382	44	33.14744693
meninges	1.326334479	27	20.356856
wrist	1.325915416	63	47.51434309
chin	1.313646014	41	31.21084337
thigh	1.307505558	55	42.06483075
forearm	1.296739584	57	43.95639702
spinal column	1.289766227	65	50.39672978
hip	1.289254161	63	48.86546185
large intestine	1.282038843	47	36.66035571
fingers	1.280430082	88	68.72690763
shoulder	1.275623506	64	50.17154332

rectum	1.274860574	24	18.82558807
upper limb	1.27439153	104	81.60757315
digit	1.260293449	89	70.6184739
vertebrae	1.259195935	60	47.64945496
hand	1.258626982	92	73.09552496
heart	1.253685168	83	66.20481928
white blood cells	1.252523273	55	43.91135972
lower limb	1.252225973	108	86.24641423
toes	1.250283038	83	66.38496845
pelvis	1.248084264	62	49.6761331
hair	1.242329798	55	44.27165806
biliary tract	1.23759006	17	13.73637407
arm	1.228669973	56	45.57773953
neck	1.218205285	75	61.5659782
heart valve	1.213625035	44	36.25502008
foot	1.206165546	93	77.10384395
lung	1.200607179	81	67.46586345
mandible	1.198874986	73	60.89041882
jaw	1.190072673	73	61.34079174
nose	1.182911023	61	51.56769937
maxilla	1.181578093	72	60.93545611
vagina	1.181578093	24	20.3118187
kidney	1.17596542	59	50.17154332
gallbladder	1.175496441	9	7.656339644
mouth	1.17317189	95	80.97705106
penis	1.172251454	34	29.00401606
blood	1.171938373	93	79.35570855
red blood cells	1.171558429	42	35.84968445
duodenum	1.168622192	10	8.557085485
peripheral nerve	1.155295068	73	63.18732071
face	1.131404925	88	77.77940333
stomach	1.131237359	43	38.01147447
blood vessels	1.129930838	83	73.45582329
skin	1.125770949	112	99.48737808
ear	1.10851152	99	89.30895009
liver	1.103295486	48	43.5060241

skull	1.056765705	90	85.16551922
spinal cord	1.01925734	51	50.03643144
urethra	1.015031847	16	15.76305221
esophagus	1.013452441	33	32.56196213
head	1.002331498	138	137.6790017
brain	0.986836518	124	125.6540448
bronchus	0.985152497	13	13.19592656
eyelid	0.979286464	49	50.03643144
peripheral nervous system	0.954070462	88	92.23637407
outer ear	0.923134817	38	41.16408491
tongue	0.892352171	17	19.05077453
eye	0.882814916	86	97.41566265
pharynx	0.836445336	22	26.30177854
diaphragm	0.816316973	10	12.25014343
ureter	0.794663091	17	21.39271371
cranial nerve	0.772687162	53	68.59179575
cerebellum	0.770297369	40	51.92799771
urinary bladder	0.759105014	16	21.07745267
epiglottis	0.725615087	5	6.89070568
trachea	0.685832329	8	11.66465863
larynx	0.63860549	13	20.356856
inner ear	0.626720773	7	11.16924842
vocal cords	0.626440109	9	14.36689616
thymus	0.592101911	2	3.377796902
middle ear	0.505677098	11	21.75301205
olfactory bulb	0.44113553	3	6.800631096
lacrimal apparatus	0.249481142	1	4.00831899

Body Regions

Name	Enrichment ratio	Observed	Expected
limbs	1.19575917	109	91.15547906
thorax	1.185458275	126	106.2880092
abdomen	1.137241984	103	90.56999426
pelvis	1.13381217	96	84.67010901
head and neck	1.012460519	144	142.2277682
non-specific	0.99242766	142	143.0834768

Body Systems

Name	Enrichment ratio	Observed	Expected
endocrine	1.584162189	62	39.13740677
reproductive	1.349881597	78	57.78284567
lymphatic	1.320907237	42	31.79632817
digestive	1.15240801	101	87.64257028
urinary	1.143471215	67	58.59351692
respiratory	1.132206203	90	79.49082042
integumentary	1.105787504	113	102.1896156
skeletal muscle	1.069619316	116	108.4497992
cardiovascular	1.060354425	100	94.3080895
skeleton	1.024791769	105	102.4598394
immune	1.018942501	67	65.75444636
nervous	1.011307667	135	133.4905336

P-value	FDR
0.015025109	0.045075326
0.317133552	0.475700328
0.394562318	0.98654752

P-value	FDR
1.63064E-05	0.001019148
0.081726352	0.118788302
0.000284661	0.003655702
0.001191358	0.007500557
9.11825E-05	0.002849453
0.000337812	0.003838768
0.013190903	0.030534498
0.000292456	0.003655702
0.002844537	0.012260935
0.0059359	0.017147087
0.003869346	0.013284548
0.005034093	0.016134913
4.64451E-05	0.001935214
0.000154655	0.003020093
6.55835E-06	0.000819793
0.000562759	0.00541114
0.154828223	0.210364433
0.001165991	0.007500557
0.006035774	0.017147087
0.085951336	0.123493299
0.003051835	0.012657983
0.005460262	0.016647139
0.013588698	0.030883404
0.000453367	0.004722574
0.000957753	0.007500557
0.000659078	0.005884627

0.000181432	0.003020093
0.001184249	0.007500557
0.001500762	0.008366611
0.090622512	0.12872516
0.001606389	0.008366611
0.020243635	0.038930068
0.001970722	0.009123713
0.002446993	0.010924077
0.075266729	0.110686366
0.056078881	0.089870002
0.003746359	0.013284548
0.06187038	0.096467633
0.028540152	0.050246747
0.001741005	0.008370215
0.001741005	0.008370215
0.001526298	0.008366611
0.006699206	0.018608904
0.003932226	0.013284548
0.005850548	0.017147087
0.010110906	0.025793127
0.011135162	0.027351217
0.018188108	0.036716476
0.019905825	0.038878565
0.003568749	0.013284548
0.00313918	0.012657983
0.019436823	0.038565125
0.063703712	0.097109318
0.004122006	0.01355923
0.028310501	0.050246747
0.011159296	0.027351217
0.011381905	0.027360349
0.00689711	0.018742148
0.008168034	0.021723495
0.027958899	0.050246747
0.000968076	0.007500557
0.009723904	0.025322668

0.107911376	0.151560922
0.000145585	0.003020093
0.001570975	0.008366611
0.017135807	0.036304677
0.001200089	0.007500557
0.003366422	0.013150088
0.02590144	0.048323581
0.000193286	0.003020093
0.003677828	0.013284548
0.018211372	0.036716476
0.030113604	0.052280562
0.183004549	0.243357114
0.034906148	0.059403107
0.014288652	0.031268715
0.073539551	0.109433856
0.005330021	0.016647139
0.014508684	0.031268715
0.023917076	0.045297492
0.028453498	0.050246747
0.05522256	0.089647013
0.035166639	0.059403107
0.191449548	0.2519073
0.066119915	0.099578185
0.306603985	0.387126243
0.011984472	0.028265264
0.153247008	0.210364433
0.014132557	0.031268715
0.122276928	0.169829067
0.303058973	0.386554812
0.054943078	0.089647013
0.050357327	0.083928879
0.175626061	0.236056534
0.062511026	0.096467633
0.01759664	0.036659667
0.057517854	0.091009262
0.209597439	0.272913332

0.218009443	0.280940004
0.430246408	0.53780801
0.462202064	0.566424098
0.458408707	0.566424098
0.478002974	0.580100697
0.362313959	0.999995935
0.491721539	0.999995935
0.431873854	0.999995935
0.2411967	0.999995935
0.282293574	0.999995935
0.312918287	0.999995935
0.028644577	0.809969746
0.175443685	0.999995935
0.255751596	0.999995935
0.148789614	0.999995935
0.004887963	0.30549766
0.018000992	0.750041336
0.110785339	0.999995935
0.2371779	0.999995935
0.126605808	0.999995935
0.03239879	0.809969746
0.089216978	0.999995935
0.059389183	0.927955984
0.237607629	0.999995935
0.00341005	0.30549766
0.056083039	0.927955984
0.049484169	0.927955984

P-value	FDR
0.0016568	0.004970401
0.000243604	0.001461623
0.021090796	0.042181592
0.033635963	0.050453944
0.324881453	0.389857744
0.367116494	0.999816345

P-value	FDR
2.70254E-05	0.000324305
0.000471271	0.002827627
0.024300234	0.072900703
0.014973092	0.059892366
0.082473037	0.141248714
0.045632745	0.09126549
0.03317094	0.079610256
0.09416581	0.141248714
0.175547603	0.23406347
0.33631207	0.403574484
0.417849373	0.417849373
0.375446258	0.409577736

Supplementary Table S4. Enrichment and depletion levels within KEGG digestive system-associated genes

Germ Layers

Name	Enrichment ratio	Observed	Expected
endoderm	1.112510154	121	108.7630522
ectoderm	1.00354781	142	141.497992
mesoderm	0.987768595	144	145.7831325

Organs

Name	Enrichment ratio	Observed	Expected
parathyroid	2.786013986	8	2.871485944
appendix	2.515151515	2	0.795180723
diaphragm	2.496657754	30	12.01606426
pancreas	1.933980583	44	22.75100402
duodenum	1.667942584	14	8.393574297
small intestine	1.619150835	51	31.49799197
gallbladder	1.597860963	12	7.510040161
red blood cells	1.535632709	54	35.16465863
intestine	1.468682708	63	42.89558233
large intestine	1.446057628	52	35.95983936
kidney	1.422392688	70	49.21285141
biliary tract	1.410134128	19	13.47389558
coagulation system	1.322504941	43	32.51405622
tibia	1.309777015	46	35.12048193
femur	1.30338639	49	37.59437751
blood	1.284697142	100	77.83935743
radius	1.278736888	47	36.75502008
fibula	1.276923077	44	34.45783133
blood vessels	1.276851903	92	72.05220884
sternum	1.275670373	47	36.84337349
ulna	1.274507622	46	36.09236948
salivary gland	1.271705822	10	7.863453815
scapula	1.265565438	44	34.76706827
stomach	1.260555795	47	37.28514056
liver	1.241953698	53	42.6746988
ureter	1.239043062	26	20.98393574

thigh	1.236032704	51	41.26104418
chest wall	1.220475354	53	43.42570281
shin	1.199277544	48	40.02409639
rib	1.195965418	55	45.98795181
rib cage	1.195965418	55	45.98795181
abdominal wall	1.193631228	28	23.45783133
humerus	1.180094787	44	37.28514056
clavicle	1.175559947	43	36.57831325
heart	1.170315399	76	64.93975904
peripheral nerve	1.161666559	72	61.97991968
esophagus	1.158430781	37	31.93975904
aorta	1.154916512	10	8.658634538
forearm	1.136456781	49	43.11646586
trachea	1.136188136	13	11.44176707
vertebrae	1.133957725	53	46.73895582
tongue	1.123791103	21	18.68674699
arm	1.118397413	50	44.70682731
white blood cells	1.114405594	48	43.07228916
knee	1.113952899	53	47.57831325
wrist	1.094269711	51	46.6064257
spinal column	1.092371436	54	49.43373494
vas deferens	1.088286713	5	4.59437751
ankle	1.084876414	52	47.93172691
bronchus	1.081600993	14	12.9437751
elbow	1.078949649	50	46.34136546
pelvis	1.067172175	52	48.72690763
hip	1.064013406	51	47.93172691
lower limb	1.063849988	90	84.59839357
upper limb	1.061860325	85	80.04819277
larynx	1.051689461	21	19.96787149
mouth	1.044948933	83	79.42971888
lung	1.042662945	69	66.17670683
epiglottis	1.035650624	7	6.759036145
rectum	1.02892562	19	18.46586345
cheek	1.016867898	23	22.6184739
shoulder	1.015994777	50	49.21285141

lymph vessels	0.998663102	3	3.004016064
ear	0.993123367	87	87.60240964
head	0.99223838	134	135.0481928
hand	0.990253739	71	71.69879518
peripheral nervous system	0.983709162	89	90.47389558
foot	0.978440952	74	75.63052209
neck	0.976990091	59	60.38955823
thyroid	0.968400583	8	8.261044177
skin	0.963249516	94	97.58634538
anus	0.94756871	9	9.497991968
brain	0.94115347	116	123.253012
spleen	0.939268201	20	21.29317269
toes	0.936783027	61	65.11646586
fingers	0.934528774	63	67.41365462
digit	0.92393321	64	69.26907631
mandible	0.920857988	55	59.72690763
maxilla	0.920177384	55	59.77108434
urinary bladder	0.918997669	19	20.6746988
chin	0.914600551	28	30.61445783
jaw	0.914096916	55	60.1686747
inner ear	0.912756598	10	10.95582329
eye	0.900012609	86	95.55421687
heart valve	0.899830604	32	35.562249
sweat gland	0.886363636	13	14.66666667
adrenal gland	0.882978723	11	12.45783133
uterus	0.879082083	28	31.85140562
cranial nerve	0.862054557	58	67.2811245
fallopian tube	0.846219201	4	4.726907631
nail	0.830692244	16	19.26104418
face	0.825761962	63	76.29317269
forehead	0.808441558	29	35.87148594
placenta	0.808441558	8	9.895582329
skull	0.802028749	67	83.53815261
meninges	0.801287208	16	19.96787149
vocal cords	0.780564263	11	14.09236948
cerebellum	0.765670583	39	50.93574297

spinal cord	0.753866296	37	49.08032129
lips	0.749194068	28	37.37349398
sinuses	0.748309542	4	5.345381526
teeth	0.746967523	23	30.79116466
pharynx	0.736457036	19	25.79919679
cerebrospinal fluid	0.717349552	9	12.54618474
hypothalamus	0.701902748	4	5.698795181
eyelid	0.672367237	33	49.08032129
outer ear	0.643922817	26	40.37751004
ovary	0.631486539	13	20.58634538
bone marrow	0.605839416	11	18.15662651
vagina	0.602297924	12	19.92369478
lymph nodes	0.592574964	5	8.437751004
breast	0.587957497	12	20.40963855
prostate	0.583745767	9	15.41767068
pituitary gland	0.577726218	11	19.04016064
testis	0.574110672	21	36.57831325
nose	0.573322747	29	50.58232932
hair	0.552668085	24	43.42570281
penis	0.527244495	15	28.4497992
urethra	0.517402597	8	15.46184739
vulva	0.513005408	8	15.59437751
middle ear	0.468661773	10	21.3373494
scalp	0.448244824	4	8.923694779
thymus	0.301818182	1	3.313253012
olfactory bulb	0.299819386	2	6.670682731
lacrimal apparatus	0.254341164	1	3.931726908

Body Regions

Name	Enrichment ratio	Observed	Expected
abdomen	1.238189955	110	88.83935743
thorax	1.064676425	111	104.2570281
limbs	1.017741646	91	89.41365462
non-specific	1.004635591	141	140.3493976
head and neck	0.996344061	139	139.5100402
pelvis	0.878965184	73	83.05220884

Body Systems

Name	Enrichment ratio	Observed	Expected
cardiovascular	1.199921855	111	92.5060241
digestive	1.198122022	103	85.96787149
urinary	1.165746628	67	57.47389558
immune	1.131818182	73	64.49799197
respiratory	0.974710276	76	77.97188755
nervous	0.969911667	127	130.939759
endocrine	0.963803745	37	38.38955823
integumentary	0.937777956	94	100.2369478
skeletal muscle	0.902446391	96	106.37751
lymphatic	0.897759464	28	31.18875502
skeleton	0.855704296	86	100.502008
reproductive	0.723375611	41	56.67871486

P-value	FDR
0.013488876	0.040466629
0.453082144	0.679623216
0.250958001	0.752874002

P-value	FDR
0.009951779	0.124397231
0.227374313	0.617864981
1.9946E-06	0.000249325
5.41532E-06	0.000338458
0.036670088	0.21827433
0.000114107	0.004754466
0.064535353	0.288104254
0.000272915	0.004873483
0.000232443	0.004842572
0.001616751	0.02245488
0.000223221	0.004842572
0.067977474	0.293006353
0.021968804	0.211238495
0.020720768	0.211238495
0.018207434	0.206902656
0.00015499	0.004842572
0.028836735	0.21827433
0.03539685	0.21827433
0.000614237	0.009597448
0.02998681	0.21827433
0.032332094	0.21827433
0.224441778	0.617864981
0.040459541	0.21988881
0.036298439	0.21827433
0.033323745	0.21827433
0.123956844	0.469533499

0.040195661	0.21988881
0.044942336	0.234074666
0.073250196	0.30520915
0.057618737	0.266753412
0.057618737	0.266753412
0.15650418	0.533492906
0.104809423	0.42261864
0.113414846	0.443026742
0.035486643	0.21827433
0.049833336	0.249166679
0.1579139	0.533492906
0.315189383	0.729117707
0.145358537	0.519137633
0.311275975	0.729117707
0.136048192	0.500177177
0.280548042	0.692014653
0.172785405	0.553799375
0.187003651	0.578052026
0.171199231	0.553799375
0.21851494	0.617864981
0.213448064	0.617864981
0.407091778	0.87735297
0.237175283	0.630785327
0.370255598	0.826463388
0.257506474	0.670589776
0.282341978	0.692014653
0.293493257	0.705512636
0.189601065	0.578052026
0.210930647	0.617864981
0.393489504	0.862915579
0.281277747	0.692014653
0.320811791	0.729117707
0.44322618	0.908250369
0.436634537	0.908250369
0.455681923	0.918713555
0.441683375	0.908250369

0.466589739	0.925773292
0.458867701	0.940302666
0.387057682	0.880074525
0.454886132	0.940302666
0.401313983	0.880074525
0.394586127	0.880074525
0.409649743	0.882865826
0.481596561	0.970960808
0.269134765	0.743702641
0.450374048	0.940302666
0.071034788	0.317119591
0.388649771	0.880074525
0.247560842	0.703297847
0.232959059	0.703297847
0.192340617	0.669371508
0.213447573	0.684126836
0.211296455	0.684126836
0.352207965	0.863254816
0.3003115	0.782061199
0.192530736	0.669371508
0.395498028	0.880074525
0.053853156	0.269265778
0.246672729	0.703297847
0.331306934	0.845170751
0.342880107	0.857200267
0.219872769	0.687102403
0.06148308	0.29551897
0.389920692	0.880074525
0.212821978	0.684126836
0.014299158	0.147244537
0.088904599	0.375642867
0.273682572	0.743702641
0.003245606	0.050712588
0.167176775	0.63324536
0.192778994	0.669371508
0.017064052	0.147244537

0.015035124	0.147244537
0.033447244	0.190555987
0.290912072	0.773702319
0.051469539	0.269265778
0.063832098	0.29551897
0.143717895	0.561398026
0.242901531	0.703297847
0.001755442	0.038539818
0.002666534	0.047616683
0.028694515	0.189754047
0.028842615	0.189754047
0.021459814	0.157792748
0.104160552	0.420002225
0.016406748	0.147244537
0.033537854	0.190555987
0.017669344	0.147244537
0.00078442	0.032684178
4.09683E-05	0.005121032
9.56701E-05	0.005979382
0.001235061	0.038539818
0.015352811	0.147244537
0.014128865	0.147244537
0.001849911	0.038539818
0.033395787	0.190555987
0.090154288	0.375642867
0.020039038	0.156554984
0.05293857	0.269265778

P-value

FDR

0.000213689	0.001282135
0.121170216	0.363510648
0.398295796	0.657716147
0.438477431	0.657716147
0.430241416	0.903935967
0.049004448	0.294026687

P-value	FDR
0.00094745	0.011369402
0.002544528	0.015267167
0.056516585	0.226066342
0.081955748	0.245867244
0.372922349	0.60193986
0.181676434	0.436023442
0.40129324	0.60193986
0.141543846	0.424631537
0.03421078	0.136843118
0.261159065	0.522318131
0.006806103	0.040836617
0.003234157	0.038809888

Supplementary Table S4. Enrichment and depletion levels within KEGG nervous system-associated genes**Germ Layers**

Name	Enrichment ratio	Observed	Expected
ectoderm	1.021172281	152	148.848537
mesoderm	0.991156004	152	153.3562823
endoderm	0.94394801	108	114.4130809

Organs

Name	Enrichment ratio	Observed	Expected
lymph vessels	2.531590414	8	3.160068847
appendix	2.390946502	2	0.836488812
thyroid	2.186373539	19	8.690189329
parathyroid	1.986324786	6	3.020654045
lymph nodes	1.80259841	16	8.876075731
rectum	1.698830409	33	19.42512909
hypothalamus	1.668102211	10	5.994836489
aorta	1.646825397	15	9.108433735
placenta	1.633101852	17	10.40963855
scalp	1.597909791	15	9.387263339
abdominal wall	1.539931645	38	24.67641997
anus	1.50129199	15	9.991394148
chest wall	1.466674202	67	45.68158348
bone marrow	1.308912319	25	19.09982788
sweat gland	1.296296296	20	15.42857143
cerebrospinal fluid	1.288080334	17	13.1979346
nail	1.283214407	26	20.2616179
rib	1.281602448	62	48.37693632
rib cage	1.281602448	62	48.37693632
diaphragm	1.265795207	16	12.64027539
wrist	1.264595401	62	49.02753873
spinal cord	1.258959229	65	51.62994836
knee	1.258743423	63	50.04991394
stomach	1.249297876	49	39.22203098
sinuses	1.244872972	7	5.623063683
vas deferens	1.241452991	6	4.833046472

sternum	1.238475886	48	38.75731497
elbow	1.230801822	60	48.74870912
ankle	1.22962963	62	50.42168675
hip	1.22962963	62	50.42168675
uterus	1.223660554	41	33.5060241
adrenal gland	1.220908852	16	13.10499139
fibula	1.213865147	44	36.24784854
femur	1.213735475	48	39.54733219
lower limb	1.213577023	108	88.99311532
pelvis	1.209563144	62	51.25817556
fallopian tube	1.206645898	6	4.972461274
spleen	1.205394191	27	22.39931153
scapula	1.20306838	44	36.57314974
thigh	1.198033151	52	43.40447504
peripheral nerve	1.196325335	78	65.19965577
tibia	1.190962031	44	36.94492255
esophagus	1.190512781	40	33.5989673
upper limb	1.18755621	100	84.20654045
shoulder	1.178303079	61	51.76936317
heart valve	1.176167472	44	37.40963855
clavicle	1.169484702	45	38.47848537
forehead	1.166028097	44	37.73493976
vertebrae	1.15931527	57	49.16695353
ulna	1.158892062	44	37.96729776
chin	1.148896371	37	32.20481928
humerus	1.147314376	45	39.22203098
foot	1.143799758	91	79.55938038
meninges	1.142576205	24	21.00516351
pharynx	1.142250127	31	27.1394148
shin	1.140053961	48	42.10327022
radius	1.137998575	44	38.66437177
large intestine	1.136727637	43	37.82788296
spinal column	1.134577831	59	52.00172117
intestine	1.130220849	51	45.12392427
fingers	1.128100578	80	70.91566265
digit	1.125330688	82	72.86746988

epiglottis	1.125151295	8	7.110154905
forearm	1.124430783	51	45.35628227
lips	1.119166448	44	39.31497418
hand	1.113712604	84	75.42340792
white blood cells	1.10351377	50	45.30981067
bronchus	1.101630641	15	13.616179
pituitary gland	1.098393057	22	20.0292599
cheek	1.092737269	26	23.79345955
lung	1.091727241	76	69.61445783
teeth	1.080556884	35	32.39070568
toes	1.080305543	74	68.49913941
cerebellum	1.063794931	57	53.58175559
heart	1.053968254	72	68.31325301
blood	1.050279564	86	81.88296041
head	1.03474721	147	142.0636833
maxilla	1.03377953	65	62.87607573
brain	1.033505907	134	129.6557659
mouth	1.029250608	86	83.55593804
jaw	1.026948387	65	63.29432014
neck	1.023192175	65	63.52667814
face	1.021724678	82	80.25645439
arm	1.020641195	48	47.0292599
mandible	1.018628096	64	62.82960413
tongue	1.017424043	20	19.65748709
nose	1.014847162	54	53.20998279
peripheral nervous system	1.008680556	96	95.17383821
coagulation system	0.994061997	34	34.20309811
urethra	0.983703704	16	16.26506024
skull	0.978631725	86	87.8777969
blood vessels	0.976315371	74	75.79518072
cranial nerve	0.974903334	69	70.77624785
lacrimal apparatus	0.967124428	4	4.135972461
salivary gland	0.967124428	8	8.271944923
vocal cords	0.944386393	14	14.82444062
skin	0.935164227	96	102.6557659
breast	0.931537598	20	21.46987952

hair	0.919407709	42	45.68158348
trachea	0.913913914	11	12.03614458
ear	0.911525747	84	92.15318417
red blood cells	0.892099386	33	36.99139415
eyelid	0.890955762	46	51.62994836
kidney	0.88855642	46	51.76936317
eye	0.885412921	89	100.5180723
pancreas	0.877454153	21	23.93287435
outer ear	0.847556528	36	42.47504303
small intestine	0.81486676	27	33.13425129
larynx	0.809324812	17	21.00516351
duodenum	0.792787524	7	8.829604131
inner ear	0.780913978	9	11.52495697
ovary	0.738833254	16	21.65576592
testis	0.72767937	28	38.47848537
ureter	0.724834308	16	22.07401033
prostate	0.678234108	11	16.21858864
liver	0.646001074	29	44.89156627
biliary tract	0.634972678	9	14.17383821
vulva	0.60958976	10	16.40447504
penis	0.601449275	18	29.92771084
urinary bladder	0.597736626	13	21.74870912
thymus	0.57382716	2	3.485370052
gallbladder	0.506318083	4	7.900172117
vagina	0.477129014	10	20.95869191
olfactory bulb	0.427520235	3	7.017211704
middle ear	0.400966184	9	22.44578313

Body Regions

Name	Enrichment ratio	Observed	Expected
limbs	1.19074806	112	94.05851979
thorax	1.094161959	120	109.6729776
head and neck	1.02209556	150	146.757315
non-specific	0.961797176	142	147.6402754
abdomen	0.952336225	89	93.45438898
pelvis	0.950019701	83	87.36660929

Body Systems

Name	Enrichment ratio	Observed	Expected
lymphatic	1.06678208	35	32.80895009
skeletal muscle	1.036606374	116	111.9036145
respiratory	1.036302592	85	82.02237522
nervous	1.023654221	141	137.7418244
skeleton	0.993162393	105	105.7228916
endocrine	0.94097089	38	40.383821
digestive	0.939914735	85	90.43373494
immune	0.928538813	63	67.84853701
integumentary	0.910435336	96	105.444062
reproductive	0.85537369	51	59.62306368
urinary	0.826999174	50	60.4595525
cardiovascular	0.822101949	80	97.31153184

P-value	FDR
0.190112316	0.570336949
0.303790845	0.455686267
0.130099575	0.390298724

P-value	FDR
0.015869015	0.152586685
0.234914042	0.444912958
0.000994129	0.037484364
0.08124872	0.289286603
0.01430979	0.152586685
0.0011995	0.037484364
0.069833657	0.286411598
0.034302257	0.212211047
0.027023614	0.194925852
0.042457875	0.230749318
0.002937932	0.073448305
0.064715708	0.286411598
0.000150004	0.018750542
0.081903358	0.289286603
0.117969528	0.325622912
0.145016972	0.355433755
0.092265183	0.295721741
0.010534288	0.152586685
0.010534288	0.152586685
0.168921423	0.364054792
0.014185664	0.152586685
0.012831571	0.152586685
0.014707635	0.152586685
0.038570031	0.219147903
0.281261967	0.495179519
0.298259003	0.51300018

0.046523547	0.242310142
0.028069323	0.194925852
0.025678973	0.194925852
0.025678973	0.194925852
0.075612662	0.286411598
0.205289545	0.398585163
0.074107654	0.286411598
0.06292283	0.286411598
0.001151685	0.037484364
0.035651456	0.212211047
0.318945519	0.524581445
0.150082809	0.35555123
0.083314542	0.289286603
0.064988072	0.286411598
0.020145046	0.179866481
0.094805588	0.296267461
0.109106667	0.325622912
0.006049642	0.126034203
0.060477694	0.286411598
0.110670037	0.325622912
0.115100618	0.325622912
0.122790699	0.326571008
0.090600015	0.295721741
0.131967174	0.343664517
0.172302942	0.365048605
0.144499797	0.355433755
0.03508514	0.212211047
0.23998802	0.447738843
0.207264285	0.398585163
0.144998691	0.355433755
0.162102928	0.361836893
0.167703718	0.364054792
0.118893729	0.325622912
0.150753722	0.35555123
0.074089547	0.286411598
0.073472608	0.286411598

0.357529829	0.565711755
0.160640836	0.361836893
0.193716751	0.396960555
0.086970901	0.293820611
0.203790461	0.398585163
0.340219755	0.552304797
0.313467416	0.522445694
0.306997124	0.518576222
0.153660701	0.355696067
0.299592105	0.51300018
0.18881505	0.393364688
0.280879009	0.495179519
0.276334337	0.495179519
0.257114179	0.472636359
0.119829231	0.325622912
0.363060713	0.567282364
0.197920262	0.398585163
0.349260097	0.559711694
0.388876254	0.595787845
0.403424817	0.607567495
0.390836826	0.595787845
0.428461753	0.630090813
0.422252716	0.628352256
0.456260189	0.64809686
0.443413824	0.644220819
0.44837769	0.644220819
0.490905679	0.999881409
0.484592848	0.999881409
0.380554669	0.999881409
0.387060928	0.999881409
0.388111633	0.999881409
0.494194877	0.694093929
0.480053947	0.999881409
0.422519761	0.999881409
0.134289042	0.932562794
0.373294548	0.999881409

0.258222945	0.999881409
0.390164373	0.999881409
0.093706887	0.780890723
0.225152439	0.999881409
0.166522466	0.999881409
0.160662312	0.999881409
0.029362442	0.524329326
0.258770479	0.999881409
0.117926755	0.867108492
0.109825568	0.858012248
0.17085925	0.999881409
0.270710083	0.999881409
0.221949738	0.999881409
0.08825344	0.780890723
0.021543374	0.448820286
0.074188537	0.744188786
0.077395634	0.744188786
0.001577994	0.098624612
0.06578278	0.744188786
0.038607906	0.603248533
0.004893164	0.152911372
0.015631818	0.390795458
0.221209214	0.999881409
0.066375798	0.744188786
0.002439999	0.101666607
0.048057964	0.667471718
0.000314277	0.039284687

P-value	FDR
0.001809383	0.010856299
0.038976146	0.116928439
0.198118411	0.396236821
0.061878672	0.371272034
0.234329044	0.481829877
0.240914938	0.481829877

P-value	FDR
0.328930388	0.986791163
0.24333802	0.986791163
0.318476921	0.986791163
0.241003136	0.986791163
0.44856726	0.67285089
0.333605615	0.57189534
0.189953252	0.431606673
0.215803337	0.431606673
0.057246067	0.224119088
0.074706363	0.224119088
0.040151054	0.224119088
0.00248057	0.029766838