

**Supplementary Table S5.** Enrichment and depletion levels within genes on chrX

### Germ Layers

Name	Enrichment ratio	Observed	Expected
ectoderm	1.007903937	190	188.5100287
mesoderm	0.991237984	193	194.7060172
endoderm	0.98044949	147	149.9312321

### Organs

Name	Enrichment ratio	Observed	Expected
salivary gland	2.890366192	37	12.80114613
cheek	1.946974685	61	31.33065903
lips	1.722014845	92	53.42578797
chin	1.697024654	74	43.60573066
urinary bladder	1.695136896	65	38.34498567
testis	1.661298817	94	56.58223496
teeth	1.639326492	78	47.58051576
vas deferens	1.603860294	15	9.35243553
scalp	1.596732026	21	13.15186246
forehead	1.551775245	81	52.1982808
sinuses	1.542510447	11	7.131232092
anus	1.523775502	22	14.43782235
vertebrae	1.472860667	104	70.61088825
nose	1.46558129	104	70.96160458
rib	1.463926174	102	69.6756447
rib cage	1.463926174	102	69.6756447
sternum	1.454867808	83	57.04985673
pelvis	1.430150925	106	74.11805158
hair	1.42039288	90	63.36275072
spinal column	1.406674651	105	74.64412607
chest wall	1.38991984	94	67.62979943
maxilla	1.384585384	118	85.22406877
mandible	1.381742293	118	85.39942693

jaw	1.377029666	118	85.69169054
breast	1.375022906	43	31.2722063
elbow	1.372589565	97	70.66934097
hip	1.371920059	100	72.89054441
outer ear	1.367260191	80	58.51117479
knee	1.349894225	98	72.5982808
ankle	1.347723977	98	72.71518625
wrist	1.346190935	96	71.31232092
fallopian tube	1.334654429	11	8.241833811
duodenum	1.31140261	22	16.77593123
pituitary gland	1.301683717	42	32.26590258
vulva	1.300826782	33	25.36848138
penis	1.294647589	56	43.25501433
shoulder	1.294210356	96	74.1765043
rectum	1.293870489	36	27.8234957
fingers	1.290228815	131	101.5323782
urethra	1.276704712	35	27.41432665
digit	1.269384651	132	103.9873926
hand	1.243704267	135	108.5467049
cranial nerve	1.227885002	119	96.91461318
eyelid	1.225041224	86	70.2017192
diaphragm	1.218362716	24	19.69856734
cerebellum	1.212366836	90	74.23495702
toes	1.209140782	121	100.0710602
upper limb	1.20369555	141	117.139255
mouth	1.200394399	135	112.4630372
face	1.196884084	126	105.2733524
vagina	1.189315298	39	32.79197708
pharynx	1.188762514	46	38.69570201
hypothalamus	1.188044662	15	12.62578797
prostate	1.162668951	28	24.08252149
skull	1.15941708	135	116.4378223
foot	1.155698718	132	114.2166189

cerebrospinal fluid	1.14663828	25	21.80286533
lung	1.143244887	112	97.96676218
meninges	1.136314304	36	31.68137536
peripheral nervous system	1.125927519	144	127.89455559
lower limb	1.124987336	140	124.4458453
aorta	1.124229692	23	20.45845272
ear	1.105259824	140	126.6670487
ovary	1.102770376	37	33.55186246
small intestine	1.099376616	57	51.84756447
lymph nodes	1.087362911	15	13.79484241
peripheral nerve	1.085199005	102	93.99197708
brain	1.081564655	181	167.3501433
large intestine	1.076838857	62	57.57593123
eye	1.067840056	143	133.9151862
esophagus	1.057575758	51	48.2234957
lacrimial apparatus	1.052790347	8	7.598853868
skin	1.049966338	143	136.1948424
uterus	1.046597463	52	49.68481375
intestine	1.044981693	70	66.98681948
head	1.042690214	189	181.2618911
vocal cords	1.041346974	21	20.16618911
nail	1.03588775	33	31.85673352
ureter	1.022166728	38	37.17593123
abdominal wall	1.017082138	39	38.34498567
arm	0.998335674	66	66.11002865
radius	0.989104421	54	54.59484241
heart valve	0.984997029	57	57.86819484
humerus	0.975058417	55	56.40687679
stomach	0.962853483	56	58.16045845
femur	0.959155324	55	57.34212034
larynx	0.954222326	28	29.34326648
thyroid	0.953747353	16	16.77593123
ulna	0.941383961	52	55.23782235

thymus	0.939991381	5	5.319197708
scapula	0.938172043	51	54.36103152
neck	0.937261373	83	88.55587393
tibia	0.933834232	50	53.54269341
thigh	0.930820734	58	62.31060172
spinal cord	0.930771542	71	76.28080229
clavicle	0.929579773	52	55.93925501
shin	0.917981827	55	59.91404011
fibula	0.907377316	48	52.89971347
heart	0.906114893	92	101.5323782
forearm	0.901244971	57	63.24584527
epiglottis	0.900412797	9	9.995415473
trachea	0.895177839	18	20.10773639
tongue	0.89476167	25	27.94040115
pancreas	0.891033497	40	44.89169054
bone marrow	0.8842256	23	26.01146132
lymph vessels	0.87284914	5	5.728366762
olfactory bulb	0.850666233	9	10.57994269
blood	0.841369335	93	110.5340974
sweat gland	0.839076775	18	21.452149
appendix	0.814659197	2	2.455014327
blood vessels	0.806973733	85	105.3318052
kidney	0.805804206	65	80.66475645
adrenal gland	0.794626594	17	21.39369628
red blood cells	0.787861197	42	53.30888252
coagulation system	0.785664438	40	50.91232092
middle ear	0.783565335	24	30.62922636
inner ear	0.777629234	12	15.43151862
biliary tract	0.760348584	18	23.67335244
white blood cells	0.75832638	50	65.93467049
bronchus	0.758242355	16	21.10143266
liver	0.7538528	49	64.99942693
spleen	0.724141508	24	33.14269341

placenta	0.589925625	10	16.9512894
parathyroid	0.518419489	2	3.857879656
gallbladder	0.163711418	2	12.21661891

### Body Regions

Name	Enrichment ratio	Observed	Expected
pelvis	1.215957261	144	118.4252149
limbs	1.160115945	150	129.2974212
thorax	1.021765091	152	148.7621777
head and neck	1.017049498	190	186.8148997
non-specific	0.975772826	184	188.5684814
abdomen	0.841369335	108	128.3621777

### Body Systems

Name	Enrichment ratio	Observed	Expected
reproductive	1.38100891	116	83.9965616
urinary	1.141986962	104	91.06934097
skeleton	1.122881009	157	139.8189112
digestive	1.079621169	130	120.4126074
skeletal muscle	1.07220913	158	147.3593123
respiratory	1.064209793	119	111.8200573
nervous	1.047650109	185	176.5856734
integumentary	1.038357997	145	139.643553
endocrine	0.9978234	62	62.13524355
cardiovascular	0.866611683	112	129.2389685
lymphatic	0.839648743	40	47.63896848
immune	0.740688338	72	97.20687679

P-value	FDR
0.356771991	0.716422019
0.270554313	0.470160296
0.313440197	0.470160296

P-value	FDR
2.07941E-09	1.29963E-07
4.83264E-08	1.5102E-06
1.61745E-09	1.29963E-07
3.58773E-07	8.96932E-06
2.84372E-06	2.36977E-05
6.90363E-09	2.87651E-07
6.29626E-07	1.12433E-05
0.041361897	0.101377199
0.018807398	0.052242771
3.55153E-06	2.77463E-05
0.088522351	0.197594533
0.026149713	0.068098212
5.50984E-07	1.12433E-05
7.23331E-07	1.1302E-05
1.1249E-06	1.40613E-05
1.1249E-06	1.40613E-05
3.54792E-05	0.000211186
1.89168E-06	1.73646E-05
3.41688E-05	0.000211186
5.40845E-06	3.9768E-05
4.95199E-05	0.00026913
1.39706E-06	1.58757E-05
1.5825E-06	1.64844E-05

1.94483E-06	1.73646E-05
0.013294066	0.038645539
5.73896E-05	0.000298904
3.91701E-05	0.000222558
0.000505804	0.002107516
0.000105038	0.000504992
0.000112645	0.000521506
0.000150388	0.000671374
0.173754948	0.344751881
0.097501776	0.210133138
0.03325922	0.084844948
0.056329642	0.13285293
0.015551137	0.044179366
0.000735134	0.002871618
0.050750957	0.121997493
1.26181E-05	8.76257E-05
0.062688008	0.14511113
3.02625E-05	0.000199096
7.10201E-05	0.0003551
0.000828927	0.003139874
0.009735057	0.030422055
0.155481469	0.313470703
0.010516323	0.03206196
0.001429749	0.005256429
0.0002529	0.001090084
0.00057149	0.002304395
0.001525066	0.005446664
0.118270893	0.250573925
0.09589364	0.210133138
0.243956185	0.44194961
0.195812221	0.377987738
0.003564479	0.012376663
0.005135858	0.016894271

0.231192514	0.431329316
0.022839777	0.062064612
0.19887429	0.377987738
0.008281057	0.02654185
0.011004855	0.032752545
0.271767886	0.478464589
0.024382238	0.064846379
0.252504797	0.450901422
0.199577526	0.377987738
0.358885343	0.598142239
0.126385132	0.263302359
0.004552968	0.015381649
0.240898971	0.44194961
0.085906495	0.195242035
0.317847453	0.551035669
0.424538155	0.680349607
0.152018185	0.311512674
0.346965974	0.586091172
0.321804831	0.551035669
0.038581108	0.096452769
0.412118111	0.669022908
0.404707895	0.665637986
0.433207369	0.685454697
0.446067268	0.696980107
0.496420175	0.999999999
0.465887981	0.999999999
0.448865041	0.999999999
0.414448116	0.999999999
0.368738166	0.999999999
0.357278005	0.999999999
0.399437064	0.999999999
0.431983427	0.999999999
0.30294194	0.999999999



0.467471053	0.999999999
0.295039073	0.999999999
0.210236761	0.999999999
0.28389679	0.999999999
0.252004382	0.999999999
0.216779182	0.999999999
0.264829192	0.999999999
0.220007595	0.999999999
0.211911311	0.999999999
0.08494206	0.92060222
0.165767074	0.999999999
0.38629402	0.999999999
0.31377776	0.999999999
0.274363514	0.999999999
0.199113886	0.999999999
0.263081623	0.999999999
0.39840601	0.999999999
0.317143852	0.999999999
0.005735904	0.155870447
0.212673384	0.999999999
0.418433504	0.999999999
0.001690338	0.105646115
0.009918317	0.206631595
0.151412697	0.999999999
0.029867191	0.4215065
0.032522193	0.4215065
0.088377813	0.92060222
0.177698896	0.999999999
0.09878067	0.949814136
0.006234818	0.155870447
0.112163929	0.999999999
0.005865777	0.155870447
0.03372052	0.4215065

0.029298134	0.4215065
0.170871859	0.999999999
0.000142112	0.017764033

P-value	FDR
9.05755E-05	0.000543453
0.000930505	0.002791516
0.30493994	0.45740991
0.215817543	0.431635085
0.110931528	0.332794583
0.00136147	0.008168822

P-value	FDR
2.32963E-06	2.79556E-05
0.032367608	0.105579333
0.00365512	0.021930717
0.082062175	0.164124351
0.043991389	0.105579333
0.152072748	0.260696139
0.037838251	0.105579333
0.206968164	0.310452246
0.495143978	0.99999823
0.005423329	0.032539972
0.095380808	0.381523231
0.000125563	0.00150676

**Supplementary Table S5.** Enrichment and depletion levels within genes on chr9**Germ Layers**

Name	Enrichment ratio	Observed	Expected
endoderm	1.045852608	103	98.48424069
mesoderm	1.016457789	130	127.8951289
ectoderm	1.001411547	124	123.8252149

**Organs**

Name	Enrichment ratio	Observed	Expected
appendix	3.100568586	5	1.61260745
parathyroid	1.57847128	4	2.534097421
gallbladder	1.495393844	12	8.024641834
fallopian tube	1.477717794	8	5.413753582
biliary tract	1.414777962	22	15.55014327
abdominal wall	1.389584092	35	25.18739255
rib	1.354677953	62	45.76733524
rib cage	1.354677953	62	45.76733524
placenta	1.347143592	15	11.13467049
spinal column	1.346088664	66	49.03094556
vertebrae	1.315174953	61	46.38166189
vas deferens	1.302238806	8	6.143266476
bronchus	1.298631496	18	13.86074499
pelvis	1.294022788	63	48.68538682
thyroid	1.270476884	14	11.01948424
breast	1.265727438	26	20.54154728
prostate	1.26430952	20	15.81891117
vulva	1.260231103	21	16.66361032
scapula	1.260231103	45	35.70773639
vagina	1.253491899	27	21.53982808
chest wall	1.238083567	55	44.4234957
forearm	1.227618837	51	41.54383954
coagulation system	1.225988313	41	33.44240688
arm	1.220489067	53	43.4252149
shin	1.219657809	48	39.35530086
peripheral nerve	1.214775006	75	61.73982808

hypothalamus	1.205776672	10	8.293409742
radius	1.199063569	43	35.86131805
clavicle	1.197460971	44	36.74441261
thigh	1.197180141	49	40.92951289
tibia	1.194192792	42	35.17020057
large intestine	1.189862868	45	37.81948424
salivary gland	1.189259184	10	8.408595989
cerebrospinal fluid	1.18702733	17	14.32148997
ulna	1.185106215	43	36.28366762
intestine	1.181787398	52	44.00114613
lung	1.181028034	76	64.35071633
pharynx	1.180276863	30	25.41776504
neck	1.169006453	68	58.16905444
femur	1.16816529	44	37.66590258
humerus	1.160544428	43	37.05157593
pancreas	1.153023943	34	29.48767908
fibula	1.151150326	40	34.747851
liver	1.147656502	49	42.69570201
spinal cord	1.137587922	57	50.10601719
trachea	1.135673377	15	13.20802292
pituitary gland	1.13238157	24	21.19426934
sternum	1.1207793	42	37.4739255
small intestine	1.115785223	38	34.05673352
meninges	1.105221127	23	20.81031519
spleen	1.102424386	24	21.77020057
mouth	1.09647966	81	73.87277937
kidney	1.094635518	58	52.98567335
rectum	1.094318324	20	18.27621777
tongue	1.089739587	20	18.3530086
maxilla	1.089664845	61	55.98051576
ovary	1.088980186	24	22.03896848
mandible	1.08742734	61	56.09570201
skull	1.085199005	83	76.48366762
jaw	1.083718515	61	56.28767908
digit	1.08336899	74	68.30544413
heart	1.079576212	72	66.69283668

testis	1.076230418	40	37.16676218
skin	1.073089488	96	89.46131805
face	1.070135165	74	69.15014327
knee	1.069471483	51	47.68710602
wrist	1.067408857	50	46.84240688
upper limb	1.065704412	82	76.94441261
ureter	1.064723552	26	24.41948424
eye	1.057251933	93	87.96389685
red blood cells	1.056641136	37	35.01661891
penis	1.055869302	30	28.41260745
lips	1.054329011	37	35.09340974
nail	1.051348761	22	20.92550143
toes	1.049701841	69	65.73295129
ankle	1.04681576	50	47.76389685
shoulder	1.046716771	51	48.72378223
cerebellum	1.045892584	51	48.76217765
hip	1.044297358	50	47.87908309
uterus	1.041791045	34	32.63610315
aorta	1.041791045	14	13.43839542
head	1.041455092	124	119.0641834
hand	1.037863992	74	71.30028653
larynx	1.037640483	20	19.27449857
elbow	1.034035776	48	46.42005731
foot	1.026329458	77	75.02464183
blood vessels	1.026181523	71	69.18853868
heart valve	1.026006332	39	38.01146132
peripheral nervous system	1.023697782	86	84.00916905
stomach	1.020850521	39	38.2034384
forehead	1.020791897	35	34.28710602
fingers	1.019599756	68	66.69283668
eyelid	1.0192377	47	46.11289398
brain	1.018866547	112	109.9260745
lower limb	1.015367035	83	81.74383954
esophagus	1.010221619	32	31.67621777
blood	1.005430279	73	72.60573066
lymph nodes	0.993232988	9	9.061318052

urinary bladder	0.992560066	25	25.18739255
hair	0.985088396	41	41.62063037
ear	0.973524165	81	83.20286533
nose	0.965415919	45	46.61203438
anus	0.94899994	9	9.483667622
bone marrow	0.936441389	16	17.08595989
diaphragm	0.927410426	12	12.93925501
epiglottis	0.913851794	6	6.565616046
cranial nerve	0.895387358	57	63.65959885
middle ear	0.894667882	18	20.11919771
outer ear	0.858618993	33	38.43381089
white blood cells	0.8543056	37	43.31002865
teeth	0.831897026	26	31.25386819
vocal cords	0.830413152	11	13.24641834
duodenum	0.81673514	9	11.01948424
sweat gland	0.780633617	11	14.09111748
chin	0.768076508	22	28.64297994
olfactory bulb	0.719468954	5	6.949570201
adrenal gland	0.711605905	10	14.05272206
scalp	0.694527363	6	8.638968481
inner ear	0.690581185	7	10.13638968
cheek	0.680274003	14	20.57994269
urethra	0.66639086	12	18.00744986
sinuses	0.640445314	3	4.684240688
lacrimal apparatus	0.601033295	3	4.991404011
thymus	0.572412662	2	3.493982808
lymph vessels	0.531526043	2	3.762750716

## Body Regions

Name	Enrichment ratio	Observed	Expected
pelvis	1.182684799	92	77.78911175
abdomen	1.102989153	93	84.31633238
thorax	1.084772601	106	97.71633238
non-specific	1.049541505	130	123.8636103
limbs	1.024365064	87	84.93065903
head and neck	1.010498197	124	122.7117479

## Body Systems

Name	Enrichment ratio	Observed	Expected
respiratory	1.157243058	85	73.4504298
skeleton	1.077940149	99	91.84183381
urinary	1.069875271	64	59.82005731
endocrine	1.053551621	43	40.81432665
cardiovascular	1.048387641	89	84.89226361
integumentary	1.046587906	96	91.72664756
digestive	1.024090711	81	79.09455587
skeletal muscle	1.022781767	99	96.79484241
lymphatic	1.022616976	32	31.29226361
nervous	1.017306714	118	115.9925501
reproductive	0.99684251	55	55.17421203
immune	0.971001876	62	63.85157593

P-value	FDR
0.190222334	0.317942317
0.211961545	0.317942317
0.489098795	0.489098795

P-value	FDR
0.032070506	0.392446224
0.218590461	0.487925136
0.092237197	0.43668842
0.152198795	0.464020717
0.050060352	0.415357536
0.01882639	0.336185533
0.001904872	0.079369652
0.001904872	0.079369652
0.125250328	0.43668842
0.001400244	0.079369652
0.004597181	0.142294532
0.23257102	0.501230646
0.129259772	0.43668842
0.005691781	0.142294532
0.182383438	0.468500584
0.101688316	0.43668842
0.138687783	0.444512126
0.135036232	0.444198133
0.03774725	0.392446224
0.105417672	0.43668842
0.027916958	0.387735529
0.040964409	0.392446224
0.069205736	0.43668842
0.04064692	0.392446224
0.053165765	0.415357536
0.010989783	0.228953807



0.272041252	0.548647921
0.084711803	0.43668842
0.082797525	0.43668842
0.067410004	0.43668842
0.092827205	0.43668842
0.086638518	0.43668842
0.285394907	0.548647921
0.228814387	0.501230646
0.098411603	0.43668842
0.072516889	0.43668842
0.022125435	0.345709929
0.158971953	0.468500584
0.043953977	0.392446224
0.113825492	0.43668842
0.127134063	0.43668842
0.174697264	0.468500584
0.151714203	0.464020717
0.122559542	0.43668842
0.110076153	0.43668842
0.298464469	0.548647921
0.252046383	0.533996575
0.191898347	0.468500584
0.216472084	0.487925136
0.297167146	0.548647921
0.297207529	0.548647921
0.107621581	0.43668842
0.187572796	0.468500584
0.326922597	0.551401334
0.333868696	0.551401334
0.189366143	0.468500584
0.319254104	0.551401334
0.194896243	0.468500584
0.127513146	0.43668842
0.204323923	0.472972045
0.162450167	0.468500584
0.179455639	0.468500584

0.289740133	0.548647921
0.114961514	0.43668842
0.200825938	0.472972045
0.273391631	0.548647921
0.281849871	0.548647921
0.188726283	0.468500584
0.35599032	0.551401334
0.180486562	0.468500584
0.344240669	0.551401334
0.363216538	0.551401334
0.34982322	0.551401334
0.391309163	0.562225809
0.285769791	0.548647921
0.340825975	0.551401334
0.33894926	0.551401334
0.341483408	0.551401334
0.348497169	0.551401334
0.386552376	0.561849383
0.423984623	0.576066063
0.090063853	0.43668842
0.320212273	0.551401334
0.419819954	0.576066063
0.383937873	0.561849383
0.366130486	0.551401334
0.376932082	0.560910836
0.419962035	0.576066063
0.362957471	0.551401334
0.434379475	0.576338819
0.438017502	0.576338819
0.410136897	0.576066063
0.432274994	0.576338819
0.327480388	0.551401334
0.413661683	0.576066063
0.466932923	0.607985577
0.473073113	0.6096303
0.489027966	0.623760161

0.491776621	0.998832479
0.457513718	0.998832479
0.343183871	0.998832479
0.386332986	0.998832479
0.452046401	0.998832479
0.398733789	0.998832479
0.403939335	0.998832479
0.430974124	0.998832479
0.120797898	0.998832479
0.308827318	0.998832479
0.145678415	0.998832479
0.117428659	0.998832479
0.137324826	0.998832479
0.262613627	0.998832479
0.269192054	0.998832479
0.191705727	0.998832479
0.074731117	0.998832479
0.230320003	0.998832479
0.121329148	0.998832479
0.176750012	0.998832479
0.149975815	0.998832479
0.050100204	0.998832479
0.056281336	0.998832479
0.223058809	0.998832479
0.185635769	0.998832479
0.220453375	0.998832479
0.183906432	0.998832479

<b>P-value</b>	<b>FDR</b>
0.006019076	0.036114457
0.059279346	0.088919019
0.052227734	0.088919019
0.022268354	0.066805061
0.357302863	0.358320881
0.358320881	0.358320881

P-value	FDR
0.022081711	0.264980529
0.090805551	0.4934874
0.233242628	0.4934874
0.337566929	0.4934874
0.231786352	0.4934874
0.215006362	0.4934874
0.37011555	0.4934874
0.339205381	0.4934874
0.436068076	0.523281691
0.314964244	0.4934874
0.489538867	0.946685578
0.372959545	0.946685578

**Supplementary Table S5.** Enrichment and depletion levels within genes on chr14**Germ Layers**

Name	Enrichment ratio	Observed	Expected
endoderm	1.080495356	81	74.96561605
ectoderm	1.039732482	98	94.25501433
mesoderm	1.027189621	100	97.3530086

**Organs**

Name	Enrichment ratio	Observed	Expected
appendix	1.629318394	2	1.227507163
aorta	1.466386555	15	10.22922636
thyroid	1.430621029	12	8.387965616
red blood cells	1.425653595	38	26.65444126
salivary gland	1.406124093	9	6.400573066
olfactory bulb	1.323258585	7	5.289971347
inner ear	1.296048723	10	7.715759312
chin	1.284234874	28	21.80286533
thigh	1.283890667	40	31.15530086
hypothalamus	1.26724764	8	6.312893983
coagulation system	1.257063101	32	25.45616046
middle ear	1.240645113	19	15.31461318
pharynx	1.240447841	24	19.347851
femur	1.220743139	35	28.67106017
adrenal gland	1.215311261	13	10.69684814
scapula	1.214104997	33	27.18051576
peripheral nerve	1.212869476	57	46.99598854
heart valve	1.209645474	35	28.93409742
lower limb	1.205343575	75	62.22292264
forearm	1.201659962	38	31.62292264
epiglottis	1.200550396	6	4.997707736
urinary bladder	1.199635342	23	19.17249284
neck	1.196984404	53	44.27793696
pituitary gland	1.177713839	19	16.13295129
shin	1.168340507	35	29.95702006
outer ear	1.162171162	34	29.25558739

peripheral nervous system	1.157203284	74	63.94727794
arm	1.149598655	38	33.05501433
tongue	1.145294938	16	13.97020057
clavicle	1.144098183	32	27.96962751
upper limb	1.143937615	67	58.56962751
radius	1.13563841	31	27.2974212
humerus	1.134613431	32	28.2034384
fibula	1.134221644	30	26.44985673
pelvis	1.133327148	42	37.05902579
maxilla	1.126442346	48	42.61203438
spinal column	1.125339721	42	37.32206304
mandible	1.124129323	48	42.69971347
lung	1.1228298	55	48.98338109
sinuses	1.121825779	4	3.565616046
blood	1.121825779	62	55.26704871
tibia	1.120601079	30	26.7713467
jaw	1.120295321	48	42.84584527
sweat gland	1.118769033	12	10.7260745
diaphragm	1.11683249	11	9.849283668
skull	1.116475707	65	58.21891117
vertebrae	1.104645501	39	35.30544413
cerebellum	1.104600895	41	37.11747851
elbow	1.103731815	39	35.33467049
nose	1.099185968	39	35.48080229
trachea	1.094106247	11	10.05386819
wrist	1.093780135	39	35.65616046
sternum	1.086768724	31	28.52492837
ulna	1.086212263	30	27.61891117
mouth	1.084800864	61	56.23151862
head	1.08130837	98	90.63094556
shoulder	1.07850863	40	37.08825215
esophagus	1.078312537	26	24.11174785
brain	1.07558916	90	83.67507163
cranial nerve	1.073109582	52	48.45730659
ankle	1.072678267	39	36.35759312
hip	1.070097646	39	36.44527221

hand	1.068664407	58	54.27335244
foot	1.068145784	61	57.10830946
placenta	1.061866126	9	8.475644699
ear	1.057891546	67	63.33352436
lacrimial apparatus	1.052790347	4	3.799426934
teeth	1.050850316	25	23.79025788
spinal cord	1.048756667	40	38.14040115
lymph vessels	1.047418968	3	2.864183381
knee	1.046856746	38	36.2991404
blood vessels	1.044318948	55	52.66590258
heart	1.044001942	53	50.76618911
abdominal wall	1.043161167	20	19.17249284
chest wall	1.035046689	35	33.81489971
forehead	1.03451683	27	26.0991404
face	1.025900643	54	52.63667622
breast	1.023272861	16	15.63610315
cheek	1.021363769	16	15.66532951
skin	1.013254229	69	68.0974212
cerebrospinal fluid	1.009041686	11	10.90143266
rib	1.004655218	35	34.83782235
rib cage	1.004655218	35	34.83782235
fingers	1.004605642	51	50.76618911
digit	1.00012124	52	51.99369628
toes	0.999289903	50	50.03553009
prostate	0.996573387	12	12.04126074
kidney	0.991759022	40	40.33237822
liver	0.984624065	32	32.49971347
eyelid	0.968637247	34	35.1008596
spleen	0.965522011	16	16.5713467
stomach	0.962853483	28	29.08022923
intestine	0.955411833	32	33.49340974
testis	0.95436315	27	28.29111748
larynx	0.954222326	14	14.67163324
ovary	0.953747353	16	16.77593123
urethra	0.948409214	13	13.70716332
meninges	0.946928587	15	15.84068768

white blood cells	0.940324711	31	32.96733524
lips	0.935877633	25	26.71289398
eye	0.92595921	62	66.95759312
penis	0.924748278	20	21.62750716
bone marrow	0.922670192	12	13.00573066
large intestine	0.903155171	26	28.78796562
uterus	0.885582468	22	24.84240688
hair	0.883800014	28	31.68137536
nail	0.87893506	14	15.92836676
lymph nodes	0.869890329	6	6.897421203
vulva	0.867217855	11	12.68424069
bronchus	0.85302265	9	10.55071633
small intestine	0.848641599	22	25.92378223
anus	0.831150274	6	7.218911175
ureter	0.806973733	15	18.58796562
vocal cords	0.793407218	8	10.08309456
biliary tract	0.760348584	9	11.83667622
vagina	0.731886337	12	16.39598854
rectum	0.718816939	10	13.91174785
pancreas	0.668275123	15	22.44584527
gallbladder	0.65484567	4	6.108309456
duodenum	0.596092095	5	8.387965616
parathyroid	0.518419489	1	1.928939828
scalp	0.45620915	3	6.575931232
vas deferens	0.427696078	2	4.676217765
thymus	0.375996552	1	2.659598854
fallopian tube	0.242664442	1	4.120916905

## Body Regions

Name	Enrichment ratio	Observed	Expected
limbs	1.19105237	77	64.6487106
abdomen	1.075083039	69	64.18108883
pelvis	1.063962604	63	59.21260745
thorax	1.062097924	79	74.38108883
head and neck	1.059872635	99	93.40744986
non-specific	1.028803958	97	94.28424069



## Body Systems

Name	Enrichment ratio	Observed	Expected
respiratory	1.144696248	64	55.91002865
skeleton	1.1157289	78	69.90945559
skeletal muscle	1.099353665	81	73.67965616
cardiovascular	1.098739813	71	64.61948424
endocrine	1.094386955	34	31.06762178
nervous	1.06463903	94	88.29283668
immune	1.049308479	51	48.6034384
reproductive	1.047661932	44	41.9982808
digestive	1.046402056	63	60.20630372
integumentary	1.016874728	71	69.8217765
urinary	0.988257948	45	45.53467049
lymphatic	0.923613617	22	23.81948424

P-value	FDR
0.089683275	0.128511984
0.091368674	0.128511984
0.128511984	0.128511984

P-value	FDR
0.305641582	0.647545726
0.073318245	0.599650746
0.114719345	0.599650746
0.007403998	0.392355364
0.164370497	0.599650746
0.237032854	0.599650746
0.20796873	0.599650746
0.074664865	0.599650746
0.032610212	0.599650746
0.252888749	0.607905646
0.07340835	0.599650746
0.161229332	0.599650746
0.127378401	0.599650746
0.087005783	0.599650746
0.233513492	0.599650746
0.101764465	0.599650746
0.025014828	0.599650746
0.096559404	0.599650746
0.004599142	0.392355364
0.090783214	0.599650746
0.322692269	0.655158278
0.171435234	0.599650746
0.043110289	0.599650746
0.221674367	0.599650746
0.140578257	0.599650746
0.153348406	0.599650746

0.019791542	0.599650746
0.151176016	0.599650746
0.279075277	0.643121909
0.188405229	0.599650746
0.046743312	0.599650746
0.206102282	0.599650746
0.202669883	0.599650746
0.21332849	0.599650746
0.157458293	0.599650746
0.142472744	0.599650746
0.170779319	0.599650746
0.146446064	0.599650746
0.119087873	0.599650746
0.393591588	0.689029879
0.092485098	0.599650746
0.234914667	0.599650746
0.153228788	0.599650746
0.33551242	0.655297695
0.344022279	0.661581306
0.089315722	0.599650746
0.222460483	0.599650746
0.213857109	0.599650746
0.224267619	0.599650746
0.233420584	0.599650746
0.368464656	0.677324736
0.244657505	0.599650746
0.291556751	0.643121909
0.296621537	0.643121909
0.173766417	0.599650746
0.009416529	0.392355364
0.274729757	0.643121909
0.327084925	0.655158278
0.052197713	0.599650746
0.242955072	0.599650746
0.292195877	0.643121909
0.298408566	0.643121909

0.232137883	0.599650746
0.221428785	0.599650746
0.412144223	0.689029879
0.230506573	0.599650746
0.435014407	0.704784383
0.383299875	0.689029879
0.350421783	0.663677619
0.439785455	0.704784383
0.360615179	0.672789514
0.323349027	0.655158278
0.330199772	0.655158278
0.409313677	0.689029879
0.398311983	0.689029879
0.413417927	0.689029879
0.394278334	0.689029879
0.449159157	0.706643757
0.452252004	0.706643757
0.428802202	0.704784383
0.471656222	0.71708577
0.481881637	0.71708577
0.481881637	0.71708577
0.480890609	0.71708577
0.49894295	0.720923652
0.497402552	0.996271293
0.489459677	0.719793643
0.475575839	0.996271293
0.462130477	0.996271293
0.41227467	0.996271293
0.449728404	0.996271293
0.411076471	0.996271293
0.379323114	0.996271293
0.392220005	0.996271293
0.436496951	0.996271293
0.428054598	0.996271293
0.430891974	0.996271293
0.419637112	0.996271293

0.340800007	0.996271293
0.354078509	0.996271293
0.148559491	0.996271293
0.352601917	0.996271293
0.394434157	0.996271293
0.271262206	0.996271293
0.25778725	0.996271293
0.214785564	0.996271293
0.306018174	0.996271293
0.379997689	0.996271293
0.315477431	0.996271293
0.317608334	0.996271293
0.185007191	0.996271293
0.334293279	0.996271293
0.177978941	0.996271293
0.25146516	0.996271293
0.191669273	0.996271293
0.113764553	0.996271293
0.125952054	0.996271293
0.03217527	0.996271293
0.194225411	0.996271293
0.105579702	0.996271293
0.278918671	0.996271293
0.065031565	0.996271293
0.095693178	0.996271293
0.156183319	0.996271293
0.044942884	0.996271293

<b>P-value</b>	<b>FDR</b>
0.005317803	0.031906815
0.164503246	0.205032111
0.226492853	0.226492853
0.15547421	0.205032111
0.02488485	0.07465455
0.170860092	0.205032111

P-value	FDR
0.055191827	0.165575481
0.042466822	0.165575481
0.053218698	0.165575481
0.096692144	0.232061145
0.264208478	0.45736816
0.050422213	0.165575481
0.318232351	0.45736816
0.34302612	0.45736816
0.289838238	0.45736816
0.40557563	0.486690756
0.458533537	0.961718203
0.339875849	0.961718203

**Supplementary Table S5.** Enrichment and depletion levels within genes on chr16**Germ Layers**

Name	Enrichment ratio	Observed	Expected
ectoderm	1.023674838	140	136.7621777
mesoderm	1.005257734	142	141.2573066
endoderm	0.919340393	100	108.773639

**Organs**

Name	Enrichment ratio	Observed	Expected
appendix	3.368725869	6	1.781088825
anus	1.527519422	16	10.47449857
gallbladder	1.466765809	13	8.863037249
urethra	1.458105227	29	19.88882521
lacrimonal apparatus	1.451143451	8	5.512893983
trachea	1.43954274	21	14.58796562
spleen	1.414033081	34	24.04469914
biliary tract	1.397397397	24	17.1747851
scalp	1.362462462	13	9.541547278
sinuses	1.353012849	7	5.173638968
rectum	1.288042244	26	20.18567335
cerebrospinal fluid	1.26440113	20	15.81776504
meninges	1.26171836	29	22.98452722
urinary bladder	1.258136948	35	27.81891117
lymph nodes	1.199038021	12	10.00802292
breast	1.190073251	27	22.68767908
diaphragm	1.189550084	17	14.29111748
salivary gland	1.184437863	11	9.287106017
vas deferens	1.179054054	8	6.785100287
bronchus	1.175787976	18	15.30888252
nail	1.168237044	27	23.11174785
pancreas	1.166772241	38	32.56848138
abdominal wall	1.150296638	32	27.81891117
heart valve	1.143325143	48	41.98280802
placenta	1.138397018	14	12.29799427
larynx	1.127382362	24	21.28825215

bone marrow	1.112815062	21	18.87106017
ureter	1.112315145	30	26.97077364
testis	1.096227943	45	41.04985673
cerebellum	1.095499042	59	53.85673352
adrenal gland	1.095296116	17	15.52091691
esophagus	1.086158886	38	34.98567335
intestine	1.069996698	52	48.5982808
pharynx	1.068629052	30	28.07335244
duodenum	1.068132593	13	12.17077364
penis	1.051588751	33	31.38108883
white blood cells	1.045260686	50	47.83495702
olfactory bulb	1.042257727	8	7.675644699
forehead	1.029856845	39	37.86934097
large intestine	1.029427905	43	41.77077364
small intestine	1.010237972	38	37.61489971
vagina	1.008816303	24	23.79025788
eye	1.008706218	98	97.15415473
kidney	1.008176655	59	58.52148997
head	1.003773848	132	131.5037249
hair	1.000673182	46	45.96905444
liver	0.996682384	47	47.15644699
brain	0.996615722	121	121.4108883
mouth	0.992758611	81	81.59083095
peripheral nervous system	0.991526261	92	92.78624642
shin	0.989255109	43	43.46704871
face	0.98199949	75	76.3747851
skin	0.981701659	97	98.80802292
cranial nerve	0.981359828	69	70.31060172
forearm	0.98072888	45	45.88424069
arm	0.979938825	47	47.96217765
spinal cord	0.975768872	54	55.34097421
stomach	0.971682738	41	42.19484241
fibula	0.964088398	37	38.3782235
lymph vessels	0.962493105	4	4.155873926
clavicle	0.960984495	39	40.58338109
spinal column	0.960231963	52	54.15358166



radius	0.959401586	38	39.60802292
skull	0.958869261	81	84.47449857
peripheral nerve	0.953215342	65	68.19025788
tibia	0.952510917	37	38.84469914
thigh	0.951206835	43	45.20573066
ulna	0.948233948	38	40.07449857
middle ear	0.945043326	21	22.22120344
ovary	0.944886524	23	24.34154728
aorta	0.943243243	14	14.84240688
upper limb	0.941360522	80	84.98338109
foot	0.941312346	78	82.86303725
digit	0.941122404	71	75.44183381
femur	0.937474171	39	41.60114613
fingers	0.936726882	69	73.66074499
heart	0.936726882	69	73.66074499
blood	0.935262338	75	80.19140401
lower limb	0.930394932	84	90.28424069
lung	0.928610591	66	71.0739255
hand	0.926989186	73	78.7495702
vulva	0.923682899	17	18.40458453
toes	0.922857729	67	72.60057307
chest wall	0.917155271	45	49.06475645
nose	0.91294136	47	51.48194842
rib	0.910008163	46	50.54899713
rib cage	0.910008163	46	50.54899713
humerus	0.904145078	37	40.9226361
ear	0.903197845	83	91.89570201
sweat gland	0.899550777	14	15.56332378
vertebrae	0.897955074	46	51.22750716
sternum	0.893954918	37	41.38911175
ankle	0.890925089	47	52.75415473
blood vessels	0.889852116	68	76.41719198
maxilla	0.889546954	55	61.82922636
tongue	0.887990501	18	20.27048711
mandible	0.887720369	55	61.95644699
scapula	0.887460041	35	39.43839542

neck	0.887208991	57	64.24641834
jaw	0.884692674	55	62.16848138
eyelid	0.883554245	45	50.93065903
lips	0.877195576	34	38.75988539
pelvis	0.874062154	47	53.77191977
teeth	0.869081612	30	34.51919771
coagulation system	0.866354299	32	36.93638968
uterus	0.860015898	31	36.04584527
shoulder	0.854790961	46	53.81432665
chin	0.853470763	27	31.63553009
red blood cells	0.853262802	33	38.67507163
outer ear	0.848070848	36	42.44928367
cheek	0.835896531	19	22.73008596
hip	0.832050976	44	52.88137536
epiglottis	0.827406354	6	7.251575931
knee	0.81641424	43	52.66934097
wrist	0.811807709	42	51.73638968
pituitary gland	0.811667646	19	23.40859599
elbow	0.799689267	41	51.26991404
vocal cords	0.751860556	11	14.63037249
prostate	0.744063238	13	17.47163324
fallopian tube	0.668966839	4	5.979369628
inner ear	0.625255938	7	11.19541547
thymus	0.518265518	2	3.859025788
thyroid	0.492984273	6	12.17077364
hypothalamus	0.436686687	4	9.159885387
parathyroid	0.357289107	1	2.798853868

## Body Regions

Name	Enrichment ratio	Observed	Expected
head and neck	1.003450259	136	135.5323782
abdomen	0.998652341	93	93.12550143
pelvis	0.977695366	84	85.91633238
non-specific	0.964879945	132	136.8045845
limbs	0.927465666	87	93.80401146
thorax	0.917299421	99	107.9255014

## Body Systems

Name	Enrichment ratio	Observed	Expected
lymphatic	1.388824407	48	34.56160458
immune	1.049308479	74	70.5226361
urinary	1.044348264	69	66.06991404
skeletal muscle	1.019570741	109	106.9077364
nervous	1.014743641	130	128.1111748
integumentary	0.996939803	101	101.3100287
skeleton	0.985831149	100	101.4372493
digestive	0.9844529	86	87.35816619
reproductive	0.918956535	56	60.93868195
endocrine	0.909524294	41	45.07851003
cardiovascular	0.906554451	85	93.76160458
respiratory	0.887526314	72	81.1243553

<b>P-value</b>	<b>FDR</b>
0.166442185	0.499326556
0.401694117	0.602541175
0.050335676	0.151007029

<b>P-value</b>	<b>FDR</b>
0.013153286	0.782512568
0.051083062	0.963747627
0.09213345	0.963747627
0.018780302	0.782512568
0.162186344	0.963747627
0.047776155	0.963747627
0.016959885	0.782512568
0.047767349	0.963747627
0.136623966	0.963747627
0.222464667	0.963747627
0.088300968	0.963747627
0.139491369	0.963747627
0.091369763	0.963747627
0.069713125	0.963747627
0.258337575	0.963747627
0.164958242	0.963747627
0.226873601	0.963747627
0.280170221	0.963747627
0.313918451	0.963747627
0.234253513	0.963747627
0.190319997	0.963747627
0.141967334	0.963747627
0.189762297	0.963747627
0.13671841	0.963747627
0.302167934	0.963747627
0.260319515	0.963747627

0.295795742	0.963747627
0.256974821	0.963747627
0.232265867	0.963747627
0.188637981	0.963747627
0.339034556	0.963747627
0.276771675	0.963747627
0.273296915	0.963747627
0.337779241	0.963747627
0.391284498	0.963747627
0.366673634	0.963747627
0.348285466	0.963747627
0.435114511	0.963747627
0.410205748	0.963747627
0.406360261	0.963747627
0.465033729	0.963747627
0.47178631	0.963747627
0.44425175	0.963747627
0.465305005	0.963747627
0.458624706	0.963747627
0.493273146	0.963747627
0.492743497	0.785877312
0.456113022	0.755571531
0.459387491	0.755571531
0.443332776	0.748872933
0.470386742	0.76361484
0.408684269	0.739831023
0.371050354	0.739831023
0.413573683	0.739831023
0.440513039	0.748872933
0.435407189	0.748872933
0.410779776	0.739831023
0.416943747	0.739831023
0.401370803	0.739831023
0.496674461	0.785877312
0.387854278	0.739831023
0.356486053	0.739831023

0.38535619	0.739831023
0.277688081	0.694220202
0.296638634	0.715080016
0.367547857	0.739831023
0.34775907	0.739831023
0.352313206	0.739831023
0.396596092	0.739831023
0.389370156	0.739831023
0.420224021	0.739831023
0.199185813	0.591518214
0.205864237	0.591518214
0.228500108	0.60309107
0.317667836	0.739831023
0.217678703	0.591518214
0.217678703	0.591518214
0.191457924	0.591518214
0.140624828	0.591518214
0.19775144	0.591518214
0.167374789	0.591518214
0.371009486	0.739831023
0.174215475	0.591518214
0.236411699	0.60309107
0.216472292	0.591518214
0.212010975	0.591518214
0.212010975	0.591518214
0.233479466	0.60309107
0.063355852	0.591518214
0.34565685	0.739831023
0.179273084	0.591518214
0.207924339	0.591518214
0.157331735	0.591518214
0.079305132	0.591518214
0.122891251	0.591518214
0.297473287	0.715080016
0.118575885	0.591518214
0.201722605	0.591518214

0.11014559	0.591518214
0.111626855	0.591518214
0.147907405	0.591518214
0.183301121	0.591518214
0.118715857	0.591518214
0.186700921	0.591518214
0.170413784	0.591518214
0.162917649	0.591518214
0.085911721	0.591518214
0.172776577	0.591518214
0.139433883	0.591518214
0.115372888	0.591518214
0.195653076	0.591518214
0.059007473	0.591518214
0.330940869	0.739831023
0.043953271	0.591518214
0.04212752	0.591518214
0.156377738	0.591518214
0.033793501	0.591518214
0.155200997	0.591518214
0.121595107	0.591518214
0.209226513	0.591518214
0.087785483	0.591518214
0.171955865	0.591518214
0.02322493	0.591518214
0.028288212	0.591518214
0.13875228	0.591518214

P-value	FDR
0.4568692	0.948949186
0.488619942	0.54094728
0.371235712	0.54094728
0.07111976	0.21335928
0.119110193	0.238220386
0.04855398	0.21335928

P-value	FDR
0.005783951	0.069407415
0.282296932	0.849130069
0.312375137	0.849130069
0.353804195	0.849130069
0.333022084	0.849130069
0.473754606	0.785650658
0.394254631	0.785650658
0.406933137	0.785650658
0.200901048	0.692334057
0.230778019	0.692334057
0.06504719	0.39028314
0.062718061	0.39028314



**Supplementary Table S5.** Enrichment and depletion levels within genes on chr17**Germ Layers**

Name	Enrichment ratio	Observed	Expected
endoderm	1.056728115	153	144.786533
ectoderm	1.010758273	184	182.0415473
mesoderm	0.994548976	187	188.0249284

**Organs**

Name	Enrichment ratio	Observed	Expected
sinuses	1.597320463	11	6.886532951
trachea	1.441978515	28	19.41776504
teeth	1.349355816	62	45.947851
epiglottis	1.346810342	13	9.65243553
scalp	1.338522279	17	12.70057307
nail	1.332743445	41	30.76361032
vas deferens	1.328680203	12	9.031518625
pharynx	1.311285598	49	37.36790831
forehead	1.309337714	66	50.40716332
sweat gland	1.303337529	27	20.71604585
cheek	1.289018107	39	30.25558739
bronchus	1.275925587	26	20.3773639
appendix	1.265409717	3	2.370773639
lips	1.259871819	65	51.59255014
fallopian tube	1.25643518	10	7.959025788
maxilla	1.251523191	103	82.29971347
mandible	1.248953328	103	82.46905444
jaw	1.244693596	103	82.7512894
larynx	1.235160879	35	28.33638968
chin	1.234877043	52	42.10945559
cerebrospinal fluid	1.234877043	26	21.05472779
vocal cords	1.232399029	24	19.47421203
hypothalamus	1.230259447	15	12.19255014
digit	1.224865392	123	100.4191977
middle ear	1.217111636	36	29.5782235
mouth	1.206216955	131	108.6040115

toes	1.200365292	116	96.63724928
fingers	1.19328792	117	98.04842407
tongue	1.185990697	32	26.98166189
outer ear	1.185768546	67	56.5034384
hand	1.182957065	124	104.822063
nose	1.182021927	81	68.52664756
face	1.180393295	120	101.6610315
hip	1.179154845	83	70.38939828
hair	1.176690955	72	61.18853868
skull	1.173934316	132	112.4424069
femur	1.173825528	65	55.37449857
ureter	1.169907097	42	35.90028653
uterus	1.167154374	56	47.97994269
upper limb	1.166904769	132	113.1197708
thigh	1.163322254	70	60.17249284
placenta	1.160686154	19	16.36962751
rib	1.159251184	78	67.28481375
rib cage	1.159251184	78	67.28481375
shoulder	1.158712444	83	71.63123209
elbow	1.157603927	79	68.24441261
fibula	1.154948537	59	51.08452722
rectum	1.153755919	31	26.86876791
ankle	1.153516575	81	70.22005731
lung	1.152157058	109	94.60515759
anus	1.147578043	16	13.94240688
forearm	1.146119707	70	61.0756447
neck	1.145968404	98	85.51719198
pelvis	1.145654854	82	71.5747851
arm	1.143455996	73	63.84154728
foot	1.142365784	126	110.2974212
knee	1.141110212	80	70.10716332
tibia	1.141079068	59	51.70544413
wrist	1.132645419	78	68.86532951
skin	1.125291388	148	131.52149
shin	1.12343692	65	57.85816619
humerus	1.119854817	61	54.4713467

radius	1.119088251	59	52.72148997
vertebrae	1.114566175	76	68.18796562
meninges	1.111319235	34	30.59426934
spinal column	1.109834678	80	72.08280802
ulna	1.106061827	59	53.34240688
scapula	1.104852355	58	52.49570201
clavicle	1.092192713	59	54.01977077
lower limb	1.090071123	131	120.1756447
sternum	1.089082134	60	55.09226361
red blood cells	1.087808353	56	51.47965616
ovary	1.080227807	35	32.40057307
parathyroid	1.073680972	4	3.725501433
adrenal gland	1.064880308	22	20.65959885
testis	1.061480052	58	54.64068768
chest wall	1.056513212	69	65.30916905
penis	1.053368089	44	41.77077364
urinary bladder	1.053222112	39	37.02922636
blood vessels	1.051933272	107	101.7174785
stomach	1.050480831	59	56.16475645
biliary tract	1.049821395	24	22.86103152
duodenum	1.049364156	17	16.20028653
thyroid	1.049364156	17	16.20028653
eyelid	1.047308292	71	67.79283668
large intestine	1.043160092	58	55.60028653
vagina	1.04210212	33	31.66676218
blood	1.039897779	111	106.7412607
prostate	1.031984624	24	23.25616046
kidney	1.026999191	80	77.89684814
ear	1.021904479	125	122.3206304
heart	1.019904205	100	98.04842407
head	1.016898102	178	175.0421203
inner ear	1.006575911	15	14.90200573
white blood cells	1.005148144	64	63.6722063
intestine	1.004819234	65	64.68825215
eye	0.997525076	129	129.3200573
pituitary gland	0.994905466	31	31.15873926

heart valve	0.984207558	55	55.88252149
urethra	0.982109034	26	26.47363897
small intestine	0.978659601	49	50.06848138
cerebellum	0.976457892	70	71.68767908
liver	0.971816455	61	62.76905444
brain	0.965300322	156	161.6077364
diaphragm	0.946241094	18	19.0226361
pancreas	0.94576195	41	43.3512894
spinal cord	0.93669409	69	73.66332378
abdominal wall	0.918193636	34	37.02922636
aorta	0.911094996	18	19.75644699
cranial nerve	0.90822531	85	93.58911175
peripheral nervous system	0.898741636	111	123.5060172
vulva	0.898032703	22	24.49799427
coagulation system	0.894939593	44	49.16532951
olfactory bulb	0.880892952	9	10.21690544
peripheral nerve	0.870362654	79	90.76676218
breast	0.860951658	26	30.1991404
esophagus	0.837471158	39	46.56876791
bone marrow	0.836023499	21	25.11891117
lacrimial apparatus	0.817649356	6	7.338108883
spleen	0.749872425	24	32.00544413
gallbladder	0.593350011	7	11.7974212
thymus	0.584035254	3	5.136676218
salivary gland	0.404468859	5	12.36189112
lymph nodes	0.300266713	4	13.32148997
lymph vessels	0	0	5.531805158

## Body Regions

Name	Enrichment ratio	Observed	Expected
pelvis	1.136745156	130	114.3616046
limbs	1.09722235	137	124.860745
thorax	1.078954454	155	143.6575931
abdomen	1.024543933	127	123.9575931
non-specific	0.99946186	182	182.0979943
head and neck	0.997757349	180	180.4045845

## Body Systems

Name	Enrichment ratio	Observed	Expected
respiratory	1.176110025	127	107.9830946
integumentary	1.141993868	154	134.8518625
reproductive	1.109545055	90	81.11432665
skeleton	1.06649916	144	135.0212034
digestive	1.066384111	124	116.2808023
immune	1.065287796	100	93.8713467
urinary	1.023373712	90	87.94441261
cardiovascular	1.009580616	126	124.804298
skeletal muscle	0.983817154	140	142.3028653
nervous	0.967592336	165	170.526361
endocrine	0.966615889	58	60.00315186
lymphatic	0.847746878	39	46.00429799

<b>P-value</b>	<b>FDR</b>
0.08837671	0.26513013
0.308608425	0.462912638
0.346622175	0.914840592

<b>P-value</b>	<b>FDR</b>
0.074220399	0.244146048
0.025010453	0.156315329
0.003946054	0.04110473
0.145119321	0.321088029
0.114713258	0.289709053
0.024856036	0.156315329
0.165819361	0.345457002
0.01892226	0.131404581
0.005938522	0.053022517
0.077149087	0.247272715
0.044806631	0.202403211
0.098528139	0.267739508
0.34528476	0.522318103
0.015459551	0.120777745
0.234666837	0.425121082
0.001295795	0.037013887
0.001406786	0.037013887
0.001611076	0.037013887
0.090193836	0.257795683
0.043876991	0.202403211
0.129710975	0.300256886
0.142598653	0.321088029
0.205741907	0.401839662
0.000521077	0.032567285
0.101576832	0.270151149
0.00050907	0.032567285

0.002530383	0.037013887
0.003025985	0.037824812
0.14921603	0.321586272
0.048703108	0.202403211
0.002608983	0.037013887
0.030321616	0.17228191
0.003885063	0.04110473
0.029614218	0.17228191
0.047279286	0.202403211
0.001964296	0.037013887
0.062867484	0.219341518
0.129452362	0.300256886
0.090744081	0.257795683
0.002665	0.037013887
0.063170357	0.219341518
0.24599665	0.43495648
0.052466246	0.202403211
0.052466246	0.202403211
0.044809152	0.202403211
0.052341793	0.202403211
0.097792138	0.267739508
0.19361269	0.384152163
0.052962152	0.202403211
0.018638866	0.131404581
0.27957576	0.472256351
0.082963588	0.250043751
0.034693618	0.188552273
0.059561208	0.21897503
0.079890952	0.249659226
0.010711075	0.089258955
0.068652675	0.231934714
0.116896046	0.289709053
0.0840147	0.250043751
0.005077177	0.048819013
0.129402577	0.300256886
0.146416141	0.321088029

0.153320134	0.324830793
0.118201294	0.289709053
0.247055281	0.43495648
0.11782782	0.289709053
0.178760785	0.366313084
0.184042808	0.371054048
0.209207093	0.402321333
0.053434448	0.202403211
0.213895288	0.405104712
0.227491325	0.418182582
0.302654529	0.491322288
0.421963347	0.571261884
0.368791622	0.54234062
0.29146689	0.479386332
0.283675247	0.472792078
0.342637348	0.522318103
0.352984726	0.525274891
0.222148027	0.414455275
0.32217793	0.509775205
0.390877926	0.548985851
0.406707079	0.55866357
0.406707079	0.55866357
0.31079726	0.498072532
0.34681922	0.522318103
0.390236781	0.548985851
0.26834578	0.459496198
0.425018842	0.571261884
0.376084889	0.546635013
0.346197264	0.522318103
0.388512758	0.548985851
0.256097452	0.444613632
0.475583506	0.621735961
0.476325065	0.621735961
0.477493218	0.621735961
0.477532488	0.999564564
0.495357879	0.999564564



0.44712498	0.999564564
0.468740254	0.999564564
0.433486357	0.999564564
0.401005372	0.999564564
0.393672539	0.999564564
0.143487629	0.999564564
0.411226333	0.999564564
0.343687284	0.999564564
0.241359026	0.999564564
0.289676349	0.999564564
0.343825491	0.999564564
0.10400436	0.999564564
0.030127591	0.94148722
0.296472295	0.999564564
0.192325744	0.999564564
0.359249798	0.999564564
0.041681302	0.999564564
0.199074624	0.999564564
0.094718148	0.999564564
0.185069445	0.999564564
0.31916109	0.999564564
0.052785968	0.999564564
0.063772043	0.999564564
0.169005725	0.999564564
0.008014282	0.333928398
0.001178435	0.096798927
0.001548783	0.096798927

P-value	FDR
0.010494182	0.06296509
0.033222994	0.066445989
0.030930964	0.066445989
0.325783002	0.488674503
0.475691397	0.990301541
0.445401004	0.990301541

<b>P-value</b>	<b>FDR</b>
0.002707293	0.016243759
0.001149481	0.013793773
0.096224408	0.288673225
0.08010305	0.288673225
0.127861758	0.306868218
0.187170713	0.374341425
0.381371879	0.646036922
0.430691281	0.646036922
0.350142569	0.999028198
0.120143686	0.720862115
0.378327569	0.999028198
0.111820352	0.720862115