S1 Table. Estimates of cross-tissue and tissue-specific local  $h^2$ . Expression levels derived by Orthogonal Tissue Decomposition and  $h^2$  estimated using the --reml-no-constrain method.

tissue	n	mean h <sup>2</sup>	mean se	prop $CI > 0$	num CI > 0	num expressed
Cross-tissue	450	0.0624	0.0328	0.198	2940	16951
Adipose - Subcutaneous	298	0.0169	0.0351	0.0122	207	16951
Adrenal Gland	126	0.0369	0.0761	0.0179	304	16951
Artery - Aorta	198	0.0216	0.0533	0.0146	247	16951
Artery - Coronary	119	0.0483	0.0844	0.0205	347	16951
Artery - Tibial	285	0.022	0.0378	0.018	305	16951
Brain - Anterior cingulate cortex (BA24)	72	0.0369	0.139	0.0217	368	16951
Brain - Caudate (basal ganglia)	100	0.0424	0.0965	0.0176	299	16951
Brain - Cerebellar Hemisphere	89	0.0458	0.113	0.0294	498	16951
Brain - Cerebellum	103	0.0406	0.0956	0.0248	421	16951
Brain - Cortex	96	0.0532	0.101	0.0259	439	16951
Brain - Frontal Cortex (BA9)	92	0.0373	0.105	0.0179	304	16951
Brain - Hippocampus	81	0.0327	0.115	0.0149	252	16951
Brain - Hypothalamus	81	0.0205	0.119	0.0145	245	16951
Brain - Nucleus accumbens (basal ganglia)	93	0.0404	0.104	0.0232	393	16951
Brain - Putamen (basal ganglia)	82	0.0327	0.112	0.0142	241	16951
Breast - Mammary Tissue	183	0.0198	0.0533	0.00791	134	16951
Cells - EBV-transformed lymphocytes	115	0.0454	0.0808	0.0206	349	16951
Cells - Transformed fibroblasts	272	0.0193	0.0373	0.0159	269	16951
Colon - Sigmoid	124	0.0243	0.0814	0.0129	219	16951
Colon - Transverse	170	0.0215	0.0577	0.0106	179	16951
Esophagus - Gastroesophageal Junction	127	0.0286	0.0784	0.0131	222	16951
Esophagus - Mucosa	242	0.0263	0.0465	0.0238	404	16951
Esophagus - Muscularis	219	0.0235	0.0498	0.0176	299	16951
Heart - Atrial Appendage	159	0.0314	0.0639	0.0169	287	16951
Heart - Left Ventricle	190	0.0246	0.0556	0.0176	298	16951
Liver	98	0.0355	0.0977	0.0188	319	16951
Lung	279	0.0177	0.0384	0.0132	223	16951
Muscle - Skeletal	361	0.0195	0.0308	0.0255	432	16951
Nerve - Tibial	256	0.0259	0.0415	0.0224	379	16951
Ovary	85	0.043	0.105	0.0162	275	16951
Pancreas	150	0.0362	0.068	0.02	339	16951
Pituitary	87	0.0437	0.113	0.0206	349	16951
Skin - Not Sun Exposed (Suprapubic)	196	0.0413	0.0562	0.0254	430	16951
Skin - Sun Exposed (Lower leg)	303	0.0271	0.0381	0.0264	448	16951
Small Intestine - Terminal Ileum	77	0.0462	0.118	0.0205	347	16951
Spleen	89	0.0621	0.106	0.0286	484	16951
Stomach	171	0.02	0.0564	0.00808	137	16951
Testis	157	0.0416	0.0679	0.037	627	16951
Thyroid	279	0.0237	0.039	0.026	441	16951
Whole Blood	339	0.0251	0.0333	0.0288	488	16951