

Supplementary Table 7. Coloc results of Causal Genes Associate with Brain Tissues in Various Types of OA

snp	V.df1	z.df1	r.df1	lABF.df1	V.df2	z.df2	r.df2	lABF.df2	internal.su	SNP.PP.HOA	name	tissue	snp_study gene
SNP.2082	0.000236	4.174074	0.994139	6.090685	0.001031	25.67142	0.973591	318.9918	325.0825	0.999901	HandOA	Basalganglrs7515905	CR1
SNP.1675	0.000154	3.491231	0.996169	3.288663	0.000091	29.84479	0.976631	433.0703	436.359	1	HipOA	Basalganglrs7683252	ANO7
SNP.434	8.44E-05	3.38623	0.997896	2.639332	0.000635	-17.4977	0.983586	148.5176	151.1569	0.999939	HipOA	Basalganglrs9487064	AK9
SNP.2059	9.24E-05	5.387436	0.997694	11.44262	0.000771	-14.7177	0.980126	104.1932	115.6358	0.957403	HipOA	Basalganglrs7539021	COLGALT2
SNP.37	0.00053	0.777269	0.986915	-1.87001	0.001151	-11.9081	0.970632	67.05501	65.185	0.997182	FingerOA	Cerebellunrs5759142	TTLL1
SNP.1054	6.23E-05	2.773775	0.998444	0.608109	0.000584	28.18577	0.984878	389.1165	389.7246	1	KneeOA	Basalganglrs213238	ZSCAN31
SNP.1086	5.41E-05	4.731015	0.998649	7.872618	0.000472	35.69949	0.987745	627.2167	635.0894	0.999455	KneeOA	Basalganglrs4985407	EXOSC6
SNP.1808	5.68E-05	3.608477	0.998582	3.222222	0.000771	-14.7177	0.980126	104.1932	107.4154	0.980328	KneeOA	Basalganglrs7539021	COLGALT2
SNP.147	5.56E-05	4.14266	0.998611	5.279305	0.000552	-26.0758	0.985699	332.9872	338.2665	0.975048	KneeOA	Basalganglrs5639990	SLX1B
SNP.2484	0.000702	5.282116	0.982741	11.6799	0.001611	-19.6003	0.959352	182.6758	194.3557	0.987944	FingerOA	Cerebellunrs6698963	IECRG4
SNP.2484	0.000702	5.282116	0.982741	11.6799	0.001611	-19.6003	0.959352	182.6758	194.3557	0.987944	FingerOA	Cortex	rs6698963:IECRG4
SNP.992	0.000912	4.461416	0.977719	7.828367	0.002116	-9.31363	0.947277	39.61376	47.44213	0.999988	FingerOA	Cortex	rs1493280:FAM153B
SNP.1675	0.000154	3.491231	0.996169	3.288663	0.000091	29.84479	0.976631	433.0703	436.359	1	HipOA	Cerebellunrs1117702	ANO7
SNP.1716	0.000156	4.798197	0.996106	8.69236	0.000716	6.209283	0.981527	16.92576	25.61812	0.808006	HandOA	Cortex	rs510443 PATE2
SNP.2093	8.33E-05	4.021332	0.997922	4.98056	0.000737	-12.7159	0.980985	77.32849	82.30905	0.886282	HipOA	Cortex	rs1076916:CHST1
SNP.783	0.000141	3.656482	0.99649	3.835352	0.000796	29.72694	0.979501	430.8444	434.6797	0.999992	HipOA	Cerebellunrs1129953	KANSL1
SNP.397	0.000101	6.541046	0.997484	18.34625	0.000793	23.47224	0.979576	267.9013	286.2476	0.999968	HipOA	Cerebellunrs9472367	SUPT3H
SNP.799	8.94E-05	1.396048	0.99777	-2.08056	0.000456	42.6003	0.988141	894.4147	892.3342	0.984158	HipOA	Cerebellunrs6205395	LRRC37A2
SNP.1987	0.000182	5.854412	0.99548	14.36001	0.001611	-19.6003	0.959352	182.6758	197.0358	0.97303	HipOA	Cerebellunrs6698963	IECRG4
SNP.2059	9.24E-05	5.387436	0.997694	11.44262	0.000771	-14.7177	0.980126	104.1932	115.6358	0.957403	HipOA	Cerebellunrs7539021	COLGALT2
SNP.726	0.000105	4.779765	0.99738	8.420944	0.000829	-18.3564	0.978658	162.9594	171.3804	0.835812	HipOA	Cerebellunrs7116921	ZDHHC24
SNP.1880	0.00031	5.742879	0.992312	13.92952	0.002404	16.55338	0.940538	127.4493	141.3788	0.828603	HipOA	Cerebellunrs6173460	RAD9A
SNP.1228	9.19E-05	5.862082	0.997708	14.10356	0.000685	-16.5439	0.9823	132.4108	146.5143	0.762527	HipOA	Cerebellunrs3844291	PPM1M
SNP.858	8.09E-05	5.894025	0.997983	14.23175	0.000658	-8.56395	0.982998	34.0099	48.24165	0.758114	HipOA	Cerebellunrs1113032	GNL3
SNP.2059	9.24E-05	5.387436	0.997694	11.44262	0.000771	-14.7177	0.980126	104.1932	115.6358	0.957403	HipOA	Cortex	rs7539021 COLGALT2
SNP.1987	0.000182	5.854412	0.99548	14.36001	0.001611	-19.6003	0.959352	182.6758	197.0358	0.97303	HipOA	Cortex	rs6698963:IECRG4
SNP.752	8.16E-05	4.25144	0.997965	5.920442	0.000647	12.01957	0.983276	68.98152	74.90197	0.989747	HipOA	Cortex	rs1547030 FRK
SNP.1650	8.10E-05	4.623346	0.99798	7.563727	0.000664	7.111402	0.98284	22.81952	30.38325	0.999959	HipOA	Cortex	rs7869112 GARNL3
SNP.862	8.09E-05	5.894025	0.997983	14.23175	0.000658	-8.56395	0.982998	34.0099	48.24165	0.758114	HipOA	Cortex	rs7646741 GNL3
SNP.725	8.94E-05	1.396048	0.99777	-2.08056	0.000456	42.6003	0.988141	894.4147	892.3342	0.984158	HipOA	Cortex	rs1724390 LRRC37A2
SNP.1394	8.94E-05	1.396048	0.99777	-2.08056	0.000456	42.6003	0.988141	894.4147	892.3342	0.984158	HipOA	Cortex	rs6715585:LRRC37A2
SNP.2797	0.000393	2.579198	0.990282	0.976914	0.000511	-41.0786	0.986746	830.379	831.3559	1	FingerOA	Hippocamprsr1049225	HLA-DQB1

SNP.1013	8.94E-05	1.396048	0.99777	-2.08056	0.000456	42.6003	0.988141	894.4147	892.3342	0.984158	HipOA	Cortex	rs1634271	LRRC37A2
SNP.2266	8.29E-05	4.042386	0.997932	5.06286	0.000739	-9.68971	0.980932	44.07021	49.13307	0.775913	HipOA	Cortex	rs1167130	LTBP1
SNP.2120	8.29E-05	4.042386	0.997932	5.06286	0.000739	-9.68971	0.980932	44.07021	49.13307	0.775913	HipOA	Cortex	rs2085297	LTBP1
SNP.12	0.000104	3.949514	0.997417	4.799846	0.000791	24.28564	0.979623	286.9403	291.7402	0.954573	KneeOA	Basalganglrs	7911339	SLC35E2A
SNP.12	0.000104	3.949514	0.997417	4.799846	0.000725	-29.6018	0.981287	427.946	432.7458	0.93266	KneeOA	Basalganglrs	7911339	SLC35E2B
SNP.1005	5.26E-05	4.687398	0.998686	7.653929	0.000531	-31.7373	0.986229	494.5495	502.2034	0.91831	KneeOA	Basalganglrs	4985487	CLEC18A
SNP.25	6.18E-05	3.178969	0.998456	1.80835	0.000707	-15.7612	0.981743	119.9381	121.7464	0.877263	KneeOA	Basalganglrs	7947690	CD151
SNP.572	0.000426	4.29322	0.989465	6.842262	0.00072	32.99657	0.981413	532.2757	539.118	1	FingerOA	Hippocam	rs1049225	HLA-DQA1
SNP.291	6.94E-05	3.781957	0.998269	3.959781	0.000968	-15.3147	0.975165	112.5095	116.4693	1	KneeOA	Cerebellun	rs1110810	USP44
SNP.1204	0.000104	4.091929	0.99741	5.372132	0.001117	-17.6985	0.971462	150.3709	155.7431	0.998942	HipOA	Cortex	rs1088910	OMA1
SNP.2744	0.000245	3.472206	0.993901	3.441539	0.000511	-41.0786	0.986746	830.379	833.8206	1	HandOA	Hippocam	rs1049225	HLA-DQB1
SNP.22	0.000465	0.556309	0.988501	-2.0798	0.004957	15.27109	0.884667	102.075	99.99515	1	KneeOA	Cerebellun	rs382724	ZDHHC11
SNP.1089	5.41E-05	4.731015	0.998649	7.872618	0.000472	35.69949	0.987745	627.2167	635.0894	0.999455	KneeOA	Cerebellun	rs7192268	EXOSC6
SNP.17	0.000108	3.5505	0.997307	3.327509	0.000861	-20.8495	0.977859	210.6331	213.9606	0.996406	KneeOA	Cerebellun	rs390772	ZDHHC11
SNP.13	5.81E-05	2.414658	0.99855	-0.35719	0.000709	-12.2597	0.98169	71.77399	71.4168	0.987369	KneeOA	Cerebellun	rs1124631	PIDD1
SNP.1773	0.00031	5.742879	0.992312	13.92952	0.002404	16.55338	0.940538	127.4493	141.3788	0.828603	HipOA	Cortex	rs7633532	RAD9A
SNP.1808	5.68E-05	3.608477	0.998582	3.222222	0.000771	-14.7177	0.980126	104.1932	107.4154	0.980328	KneeOA	Cerebellun	rs7539021	COLGALT2
SNP.1891	0.000184	3.671639	0.995422	4.016373	0.001505	-26.6891	0.961921	340.9582	344.9746	0.947398	KneeOA	Cerebellun	rs599707	C4A
SNP.285	5.15E-05	4.86116	0.998713	8.47248	0.000685	4.568418	0.982303	8.233374	16.70585	0.94307	KneeOA	Cerebellun	rs7483040	KDELRL2
SNP.13	5.79E-05	5.309876	0.998555	10.80724	0.000688	-17.9704	0.982239	156.5836	167.3909	0.939895	KneeOA	Cerebellun	rs4368552	RNF212
SNP.295	5.17E-05	10.04046	0.998709	47.01421	0.000721	0.782503	0.9814	-1.69185	45.32236	0.930693	KneeOA	Cerebellun	rs2425160	C2orf173
SNP.984	5.26E-05	4.687398	0.998686	7.653929	0.000531	-31.7373	0.986229	494.5495	502.2034	0.91831	KneeOA	Cerebellun	rs6205132	CLEC18A
SNP.942	7.50E-05	2.574793	0.998128	0.168139	0.000634	-34.4956	0.983611	583.1674	583.3356	0.815089	KneeOA	Cerebellun	rs2071469	HLA-DOB
SNP.65	8.76E-05	3.548182	0.997816	3.217754	0.000644	12.06597	0.983358	69.53443	72.75219	1	HipOA	Cortex	rs3744405	YBX2
SNP.2156	9.67E-05	3.631023	0.997589	3.562383	0.000779	-11.8041	0.979915	66.31468	69.87707	0.81524	HipOA	Cortex	rs2272635	ZNF696
SNP.1108	6.06E-05	3.801539	0.998487	3.968208	0.001048	-6.29003	0.97318	17.44237	21.41057	0.996925	KneeOA	Cortex	rs4473241	ASB16
SNP.15	0.000177	3.738665	0.995602	4.244823	0.002221	-8.80951	0.944804	35.21353	39.45835	0.997224	KneeOA	Cortex	rs6187628	B4GALNT4
SNP.967	5.26E-05	4.687398	0.998686	7.653929	0.000531	-31.7373	0.986229	494.5495	502.2034	0.91831	KneeOA	Cortex	rs2270843	CLEC18A
SNP.939	5.26E-05	4.687398	0.998686	7.653929	0.000531	-31.7373	0.986229	494.5495	502.2034	0.91831	KneeOA	Cortex	rs8049373	CLEC18A
SNP.1808	5.68E-05	3.608477	0.998582	3.222222	0.000771	-14.7177	0.980126	104.1932	107.4154	0.980328	KneeOA	Cortex	rs7539021	COLGALT2
SNP.40	7.09E-05	3.954391	0.99823	4.636293	0.000791	-22.8485	0.979611	253.7586	258.3949	0.986946	KneeOA	Cortex	rs1107683	CORO7
SNP.3	9.83E-05	0.423679	0.997549	-2.91615	0.001163	11.564	0.970321	63.11998	60.20384	0.999998	KneeOA	Cortex	rs7635	EPS8L2
SNP.338	5.17E-05	10.04046	0.998709	47.01421	0.00072	2.113457	0.981425	0.198897	47.2131	0.948621	KneeOA	Cortex	rs1170025	ERGIC3
SNP.1101	5.41E-05	4.731015	0.998649	7.872618	0.000472	35.69949	0.987745	627.2167	635.0894	0.999455	KneeOA	Cortex	rs2549082	EXOSC6

SNP.26	6.44E-05	3.799993	0.998392	3.99197	0.000726	-17.185	0.981275	142.9089	146.9008	0.999897	KneeOA	Cortex	rs1017219:FEZ2
SNP.987	6.24E-05	4.810305	0.998442	8.319225	0.000707	8.518425	0.981747	33.61782	41.93704	0.996334	KneeOA	Cortex	rs5636968:GDPD3
SNP.881	5.58E-05	3.693717	0.998606	3.524431	0.000736	14.29484	0.981017	98.24962	101.7741	0.970022	KneeOA	Cortex	rs1279232:MRGPRF
SNP.1097	5.16E-05	3.771145	0.998711	3.774793	0.000666	7.454226	0.982794	25.27346	29.04826	0.999996	KneeOA	Cortex	rs4419055:OGFOD1
SNP.339	5.17E-05	10.04046	0.998709	47.01421	0.00072	-1.82057	0.981418	-0.36632	46.64789	0.942242	KneeOA	Cortex	rs1740651:PROCR
SNP.557	0.000297	4.418605	0.992639	7.234391	0.00072	32.99657	0.981413	532.2757	539.5101	1	HandOA	Hippocampus	rs1049225:HLA-DQA1
SNP.1675	0.000154	3.491231	0.996169	3.288663	0.00091	29.84479	0.976631	433.0703	436.359	1	HipOA	Hippocampus	rs7683252:ANO7
SNP.790	0.000141	3.656482	0.99649	3.835352	0.000796	29.72694	0.979501	430.8444	434.6797	0.999992	HipOA	Hippocampus	rs7973087:KANSL1
SNP.340	5.17E-05	10.04046	0.998709	47.01421	0.000721	-0.94871	0.981402	-1.5507	45.46351	0.953544	KneeOA	Cortex	rs761827:SPAG4
SNP.599	0.000102	3.533949	0.997455	3.241651	0.00132	-9.52157	0.96646	42.11229	45.35394	0.997376	KneeOA	Cortex	rs1291219:SPPL2A
SNP.326	5.17E-05	10.04046	0.998709	47.01421	0.000712	-5.88117	0.981615	14.97804	61.99225	0.857948	KneeOA	Cortex	rs8122819:UQCC1
SNP.291	6.94E-05	3.781957	0.998269	3.959781	0.000968	-15.3147	0.975165	112.5095	116.4693	1	KneeOA	Cortex	rs1110810:USP44
SNP.1767	0.000292	4.333136	0.992742	6.857063	0.000716	6.209283	0.981527	16.92576	23.78282	0.792359	ThumbOA	Cortex	rs510443:PATE2
SNP.1224	0.000129	3.313215	0.996774	2.602796	0.000639	43.38881	0.98348	923.6925	926.2953	0.963834	HipOA	Hippocampus	rs1378358:ARL17B
SNP.2059	9.24E-05	5.387436	0.997694	11.44262	0.000771	-14.7177	0.980126	104.1932	115.6358	0.957403	HipOA	Hippocampus	rs7539021:COLGALT2
SNP.1086	5.41E-05	4.731015	0.998649	7.872618	0.000472	35.69949	0.987745	627.2167	635.0894	0.999455	KneeOA	Hippocampus	rs4985407:EXOSC6
SNP.815	9.05E-05	1.661266	0.997744	-1.67023	0.000471	39.9734	0.987756	786.953	785.2828	0.999998	HipOA	Spinalcord	rs6205551:LRRC37A
SNP.1808	5.68E-05	3.608477	0.998582	3.222222	0.000771	-14.7177	0.980126	104.1932	107.4154	0.980328	KneeOA	Hippocampus	rs7539021:COLGALT2
SNP.436	8.16E-05	3.498376	0.997964	3.008384	0.000539	-27.2743	0.986024	364.6089	367.6172	0.99507	HipOA	Spinalcord	rs2063036:UBE2Q2L
SNP.1034	0.00018	4.104152	0.995514	5.680839	0.001002	22.55095	0.974323	245.9126	251.5935	0.851682	SpineOA	Basalganglia	rs4855885:GMPPB
SNP.1224	0.000129	3.313215	0.996774	2.602796	0.000639	43.38881	0.98348	923.6925	926.2953	0.963834	HipOA	Spinalcord	rs1378358:ARL17B
SNP.141	5.56E-05	4.14266	0.998611	5.279305	0.000552	-26.0758	0.985699	332.9872	338.2665	0.975048	KneeOA	Hippocampus	rs1237307:SLX1B
SNP.943	6.23E-05	2.773775	0.998444	0.608109	0.000584	28.18577	0.984878	389.1165	389.7246	1	KneeOA	Spinalcord	rs149963:ZSCAN31
SNP.1086	5.41E-05	4.731015	0.998649	7.872618	0.000472	35.69949	0.987745	627.2167	635.0894	0.999455	KneeOA	Spinalcord	rs4985407:EXOSC6
SNP.1004	5.26E-05	4.687398	0.998686	7.653929	0.000531	-31.7373	0.986229	494.5495	502.2034	0.91831	KneeOA	Spinalcord	rs2549082:CLEC18A
SNP.1034	0.00018	4.104152	0.995514	5.680839	0.001002	22.55095	0.974323	245.9126	251.5935	0.851682	SpineOA	Spinalcord	rs6226267:GMPPB