# Bone & Joint Research

Supplementary Material
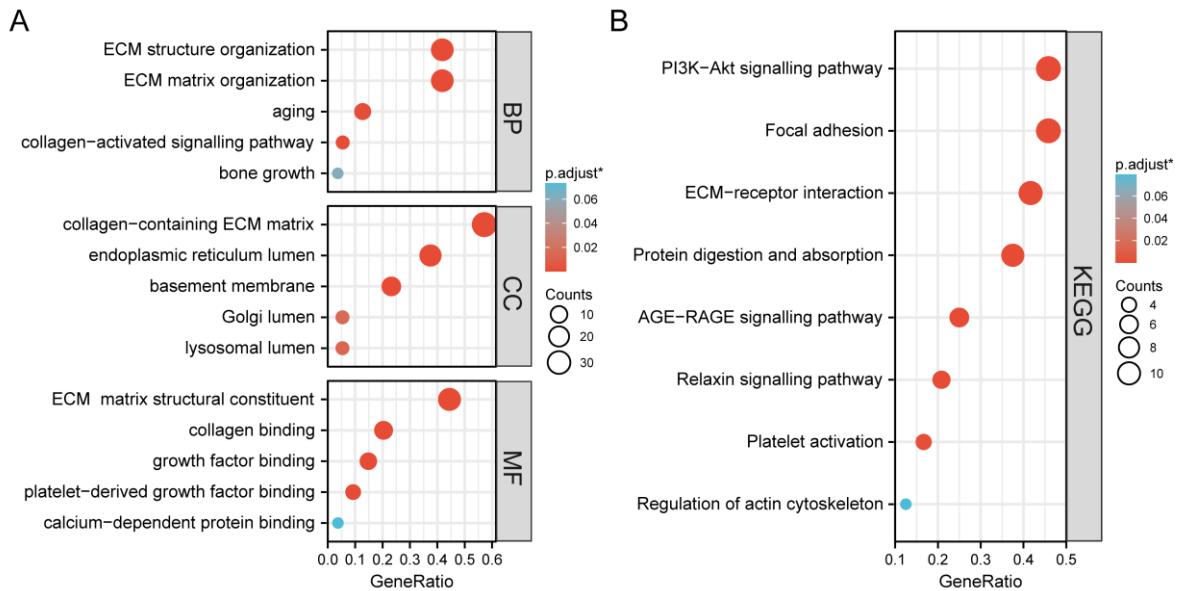
Fig a. Functional enrichment analysis of extracellular protein-differentially expressed genes (EP-DEGs). a) Gene Ontology (GO) enrichment analysis of EP-DEGs. b) Kyoto Encyclopedia of Genes and Genomes (KEGG) pathway enrichment analysis of EP-DEGs. BP, biological process; CC, cellular component; ECM, extracellular matrix; MF, molecular function. *Independent-samples *t*-test.
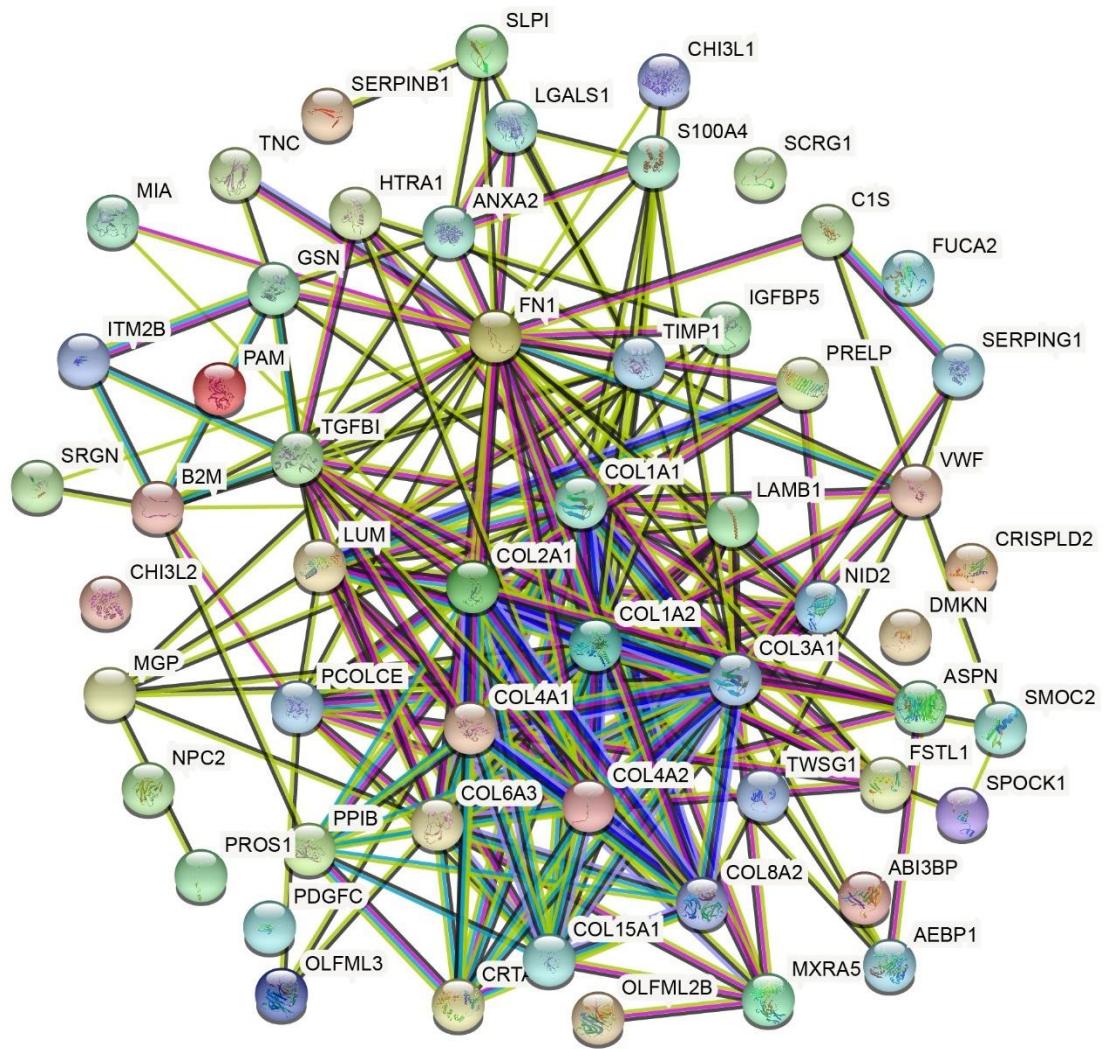
Fig b. Protein-protein interaction (PPI) network of extracellular protein-differentially expressed genes (EP-DEGs). The PPI network of EP-DEGs was constructed with 56 nodes and 225 edges using the STRING database.

Fig c. Transcription factor (TF)–microRNA (miRNA) coregulatory network with hub extracellular protein-differentially expressed genes (EP-DEGs).
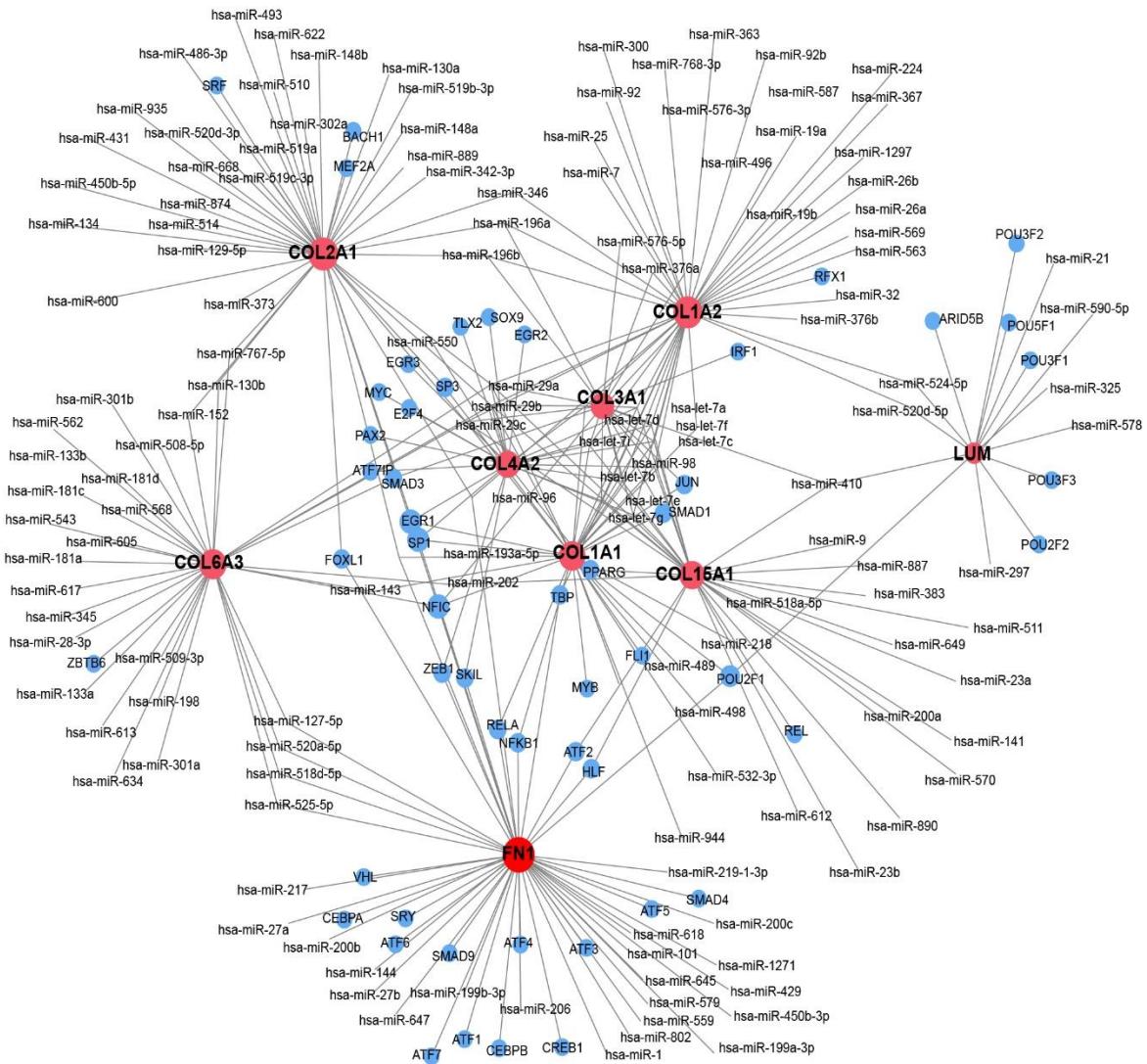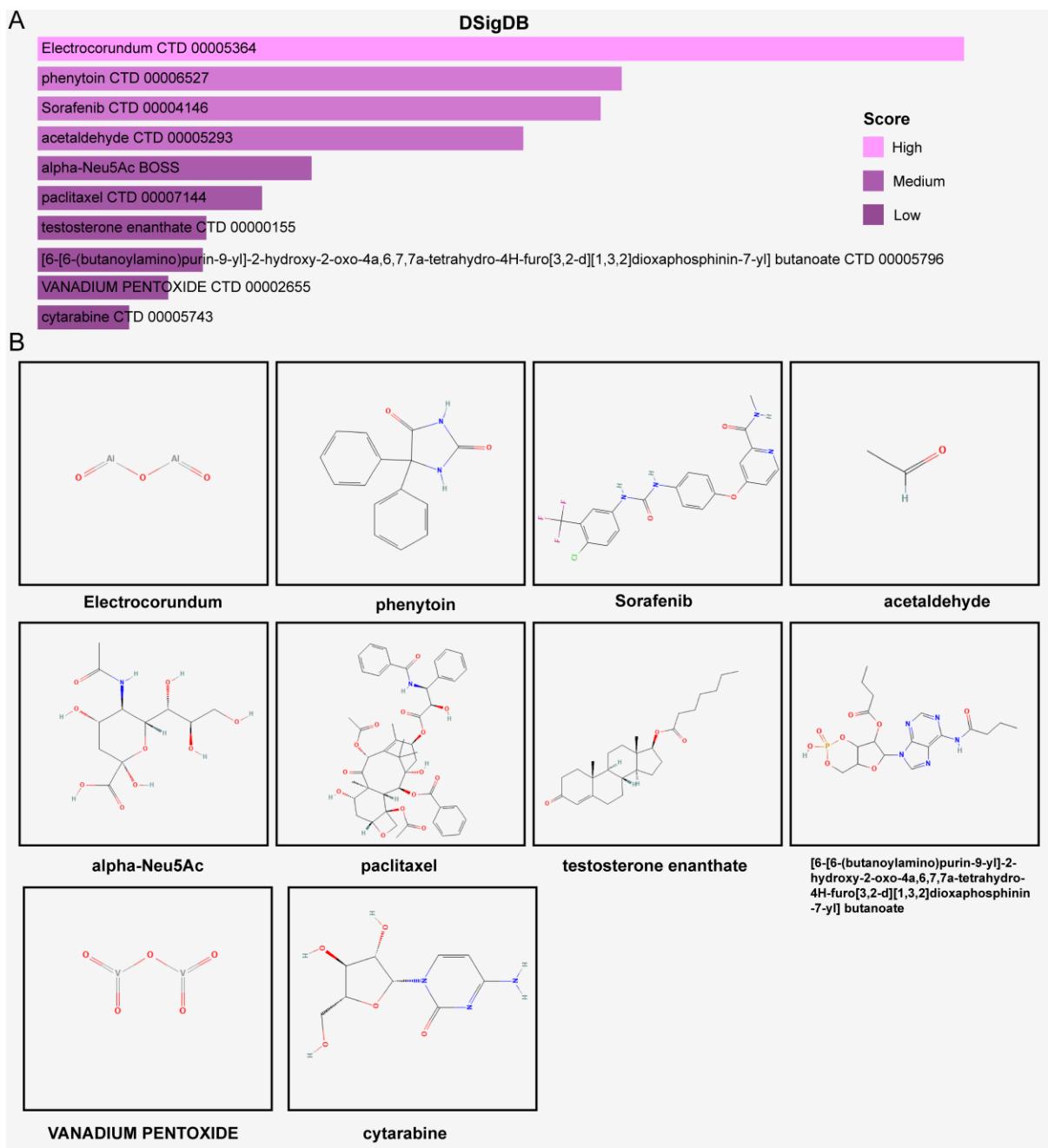
Fig d. Candidate drugs for hub extracellular protein-differentially expressed genes (EP-DEGs) from the Drug Signatures Database (DSigDB). a) Prediction of the top ten candidate drugs for intervertebral disc degeneration (IDD). b) The structures of the top ten candidate drugs.

Table i. The 56 extracellular protein-differentially expressed genes (EP-DEGs) identified in the differential expression analysis, including 54 upregulated and two down-regulated genes.

gene_name	logFC	p-value*	p.adjust
LUM	4.135663583	0.012527184	0.735406567
FN1	4.071812417	0.01462678	0.735406567
COL3A1	3.77039425	0.004349146	0.735406567
COL1A2	3.72987075	0.005697305	0.735406567
HTRA1	3.49881425	0.027831783	0.735406567
MGP	3.49837725	0.017665085	0.735406567
ASPN	3.363714667	0.009495195	0.735406567
COL1A1	3.034408	0.014177156	0.735406567
MXRA5	3.030836917	0.011707636	0.735406567
B2M	2.909025917	0.017576721	0.735406567
S100A4	2.89565175	0.022804902	0.735406567
SCRG1	2.811941583	0.019567393	0.735406567
FSTL1	2.74222475	0.026197669	0.735406567
TGFBI	2.739578417	0.030225998	0.735406567
AEBP1	2.699310583	0.0476322	0.735406567
PRELP	2.668458917	0.042300865	0.735406567
ABI3BP	2.6532065	0.03790529	0.735406567
COL6A3	2.549639667	0.030958246	0.735406567
MIA	2.499552417	0.023439848	0.735406567
PAM	2.43422725	0.038958567	0.735406567
TIMP1	2.42595775	0.033220448	0.735406567
ITM2B	2.366812667	0.012112784	0.735406567
CRTAP	2.32018625	0.016292442	0.735406567
C1S	2.310445167	0.009214341	0.735406567
LGALS1	2.2889605	0.015936541	0.735406567
SMOC2	2.283573583	0.001547851	0.735406567
TWSG1	2.231216167	0.01852482	0.735406567
ANXA2	2.127704917	0.043641927	0.735406567
SERPING1	2.110762583	0.04769673	0.735406567
CHI3L2	2.058697667	0.029255201	0.735406567
PPIB	1.9873155	0.030684105	0.735406567
TNC	1.984153083	0.030016268	0.735406567
PCOLCE	1.937892583	0.008878603	0.735406567
COL2A1	1.83311025	0.048854699	0.735406567
SRGN	1.801267417	0.047128172	0.735406567
CHI3L1	1.796493833	0.019230039	0.735406567
IGFBP5	1.709436	0.041003076	0.735406567
NPC2	1.696274917	0.036042047	0.735406567
PDGFC	1.6165725	0.035550466	0.735406567
OLFML2B	1.542638583	0.027323586	0.735406567
CRISPLD2	1.486175	0.035139121	0.735406567
SPOCK1	1.454738417	0.023401307	0.735406567
COL15A1	1.43358275	0.042717643	0.735406567
COL8A2	1.422184167	0.034924518	0.735406567
SLPI	1.3438605	0.018762492	0.735406567
COL4A1	1.341717583	0.041886959	0.735406567

SERPINB1	1.33804075	0.011669337	0.735406567
NID2	1.21915575	0.016984696	0.735406567
PROS1	1.165217	0.039068174	0.735406567
FUCA2	1.14234725	0.028701344	0.735406567
OLFML3	1.137637167	0.024293425	0.735406567
VWF	1.09952375	0.019390019	0.735406567
LAMB1	1.089402417	0.039718516	0.735406567
COL4A2	1.013713167	0.018071668	0.735406567
GSN	-1.015778917	0.004701536	0.735406567
DMKN	-3.143204917	0.01216198	0.735406567

*Independent-samples *t*-test.