

Supplementary information:

Figure S1

Schematic representation of the mouse URM model acquisition and experimental conditions.

Figure S2

Screening of HTR-8/SVneo cell lines with different knockdown effects of MANF and NPM1.

A and B. Comparison of mRNA and protein levels of three knockdown MANF lentiviral sequences.

C and D. Comparison of mRNA and protein levels of three NPM1 siRNAs.

Figure S3

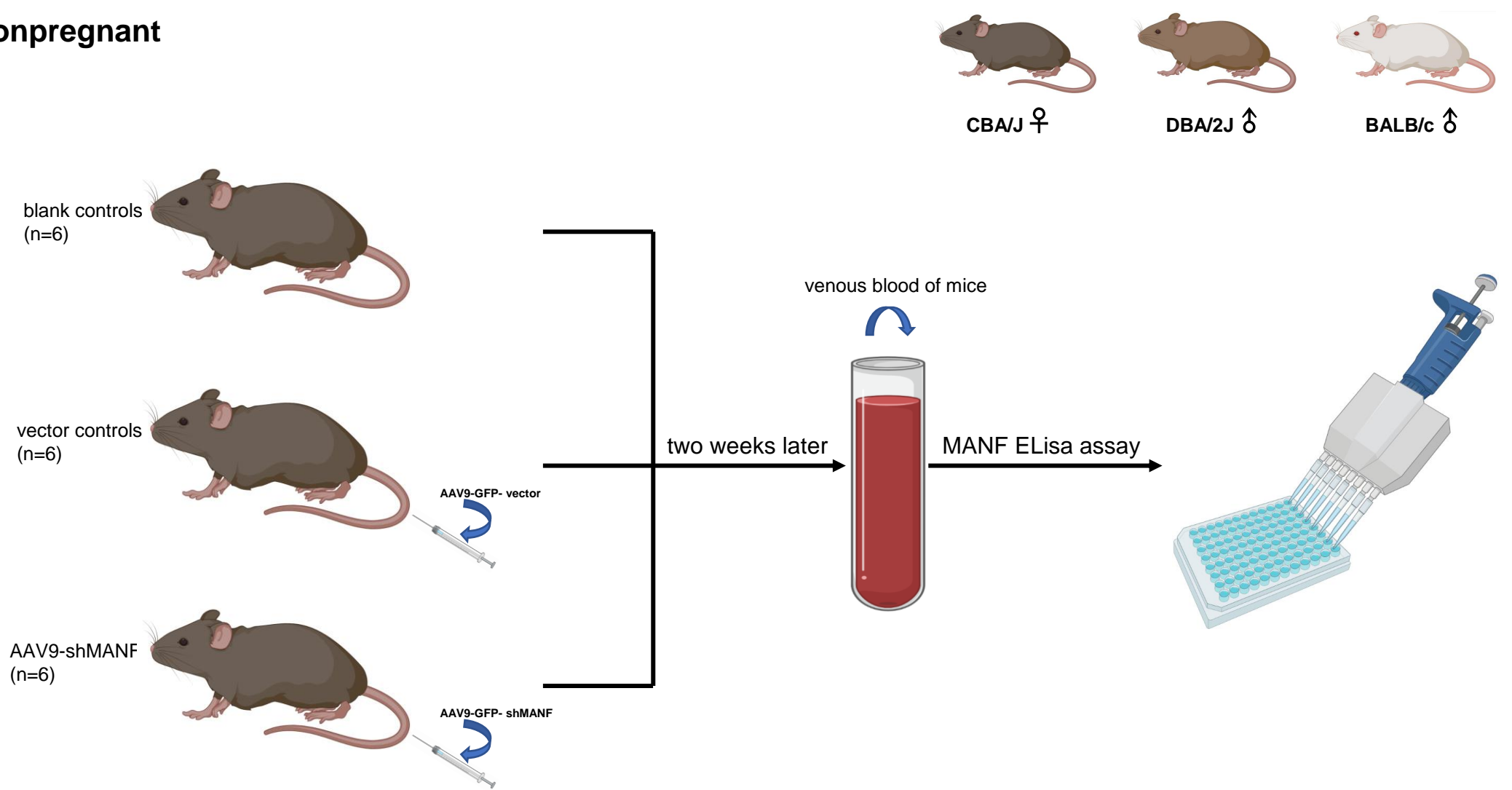
NPM1 peptides identified by mass spectrometry in immunoprecipitated URM villi lysates using an

anti-MANF antibody. A and B. Primary ion flow diagram of LC-MS/MS method. C, D, E and F.

Secondary mass spectra of several high scoring specific peptides of NPM1 identified by LC-MS/MS.

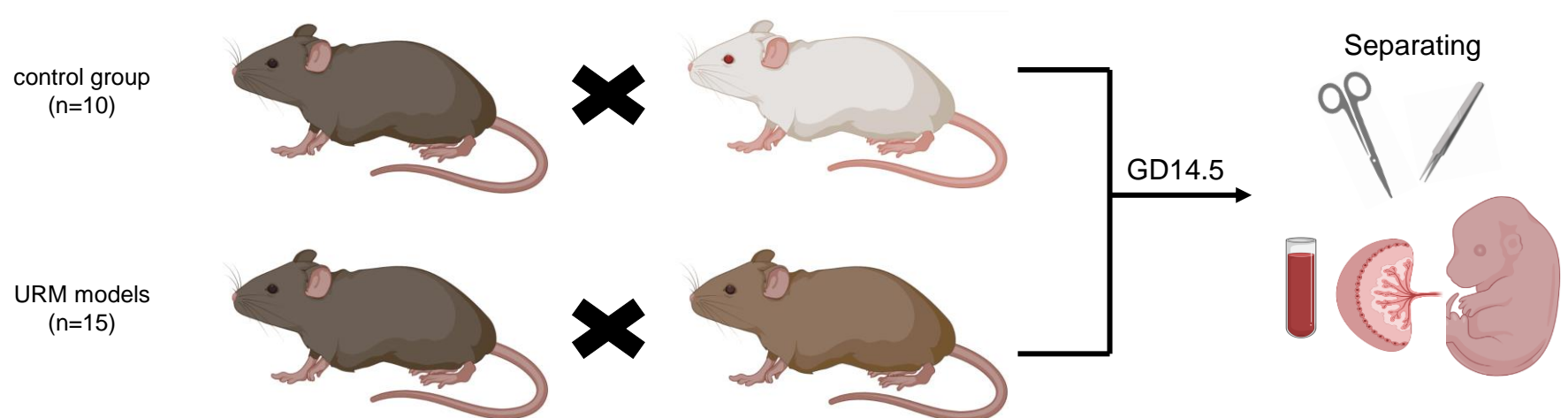
Figure S1

Nonpregnant



Mating and treatment

models



treatment

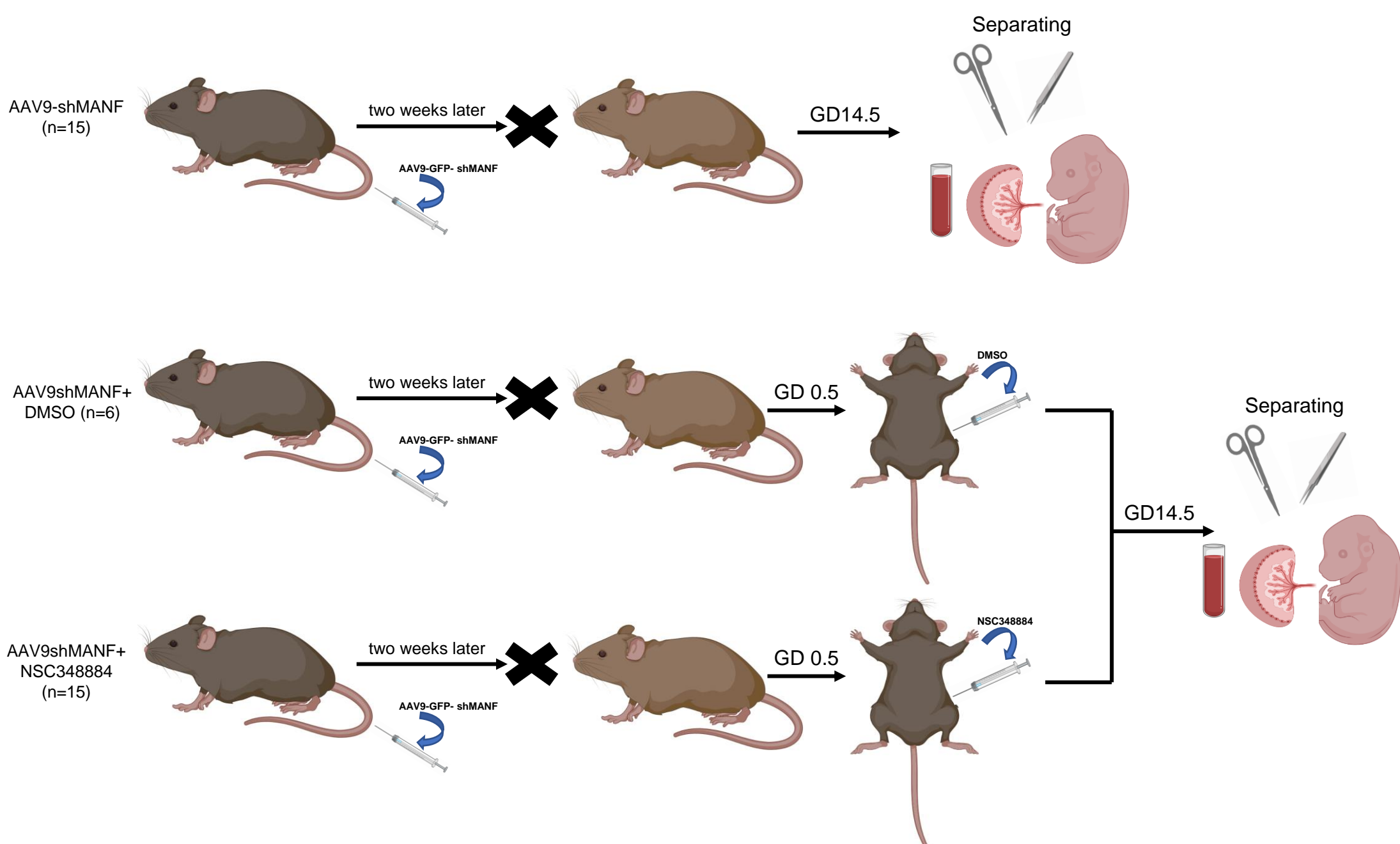
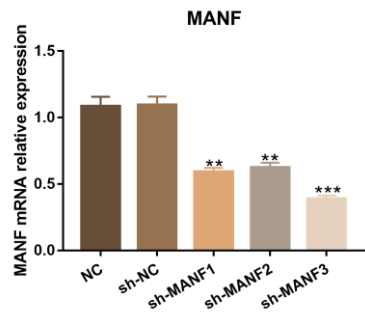
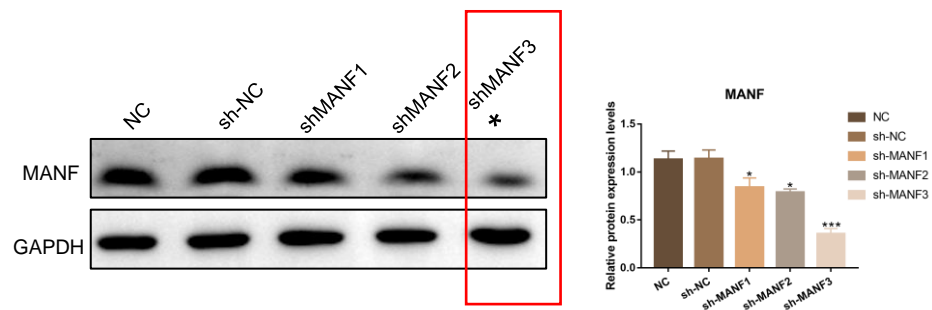


Figure S2

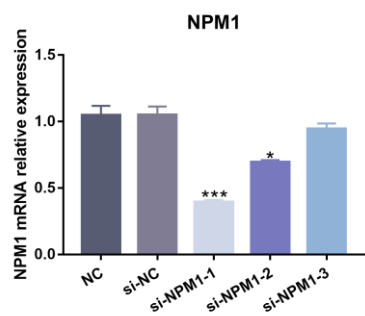
A



B



C



D

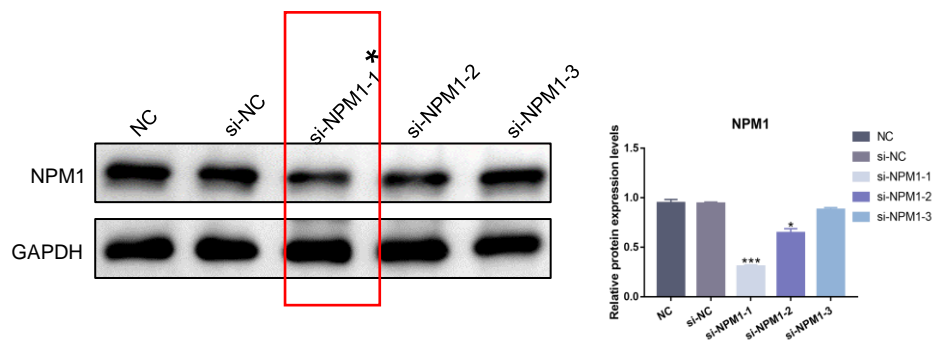
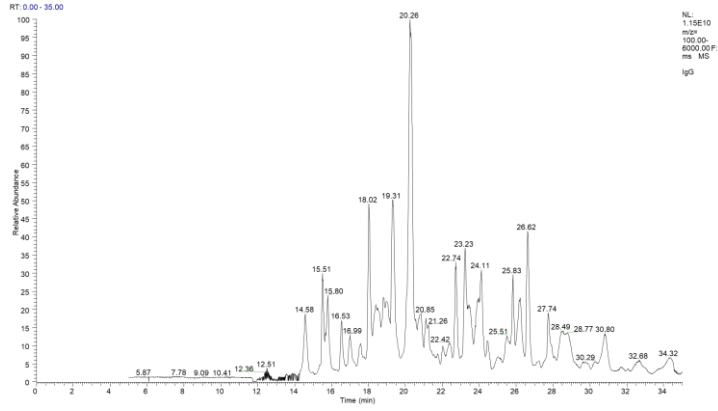
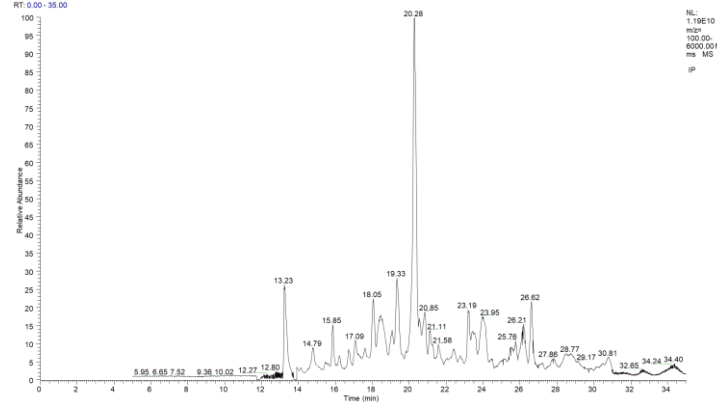


Figure S3

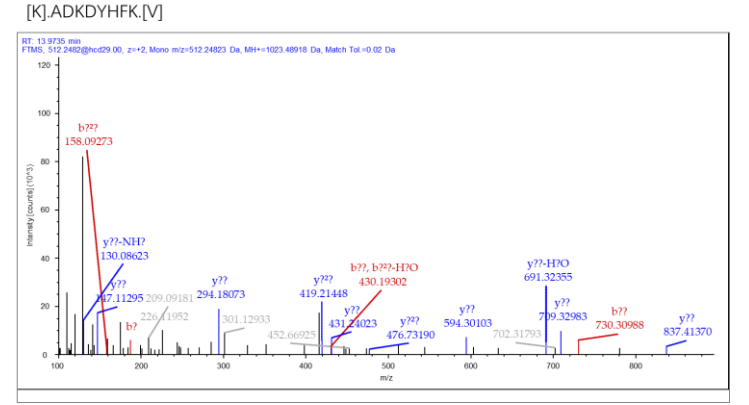
A



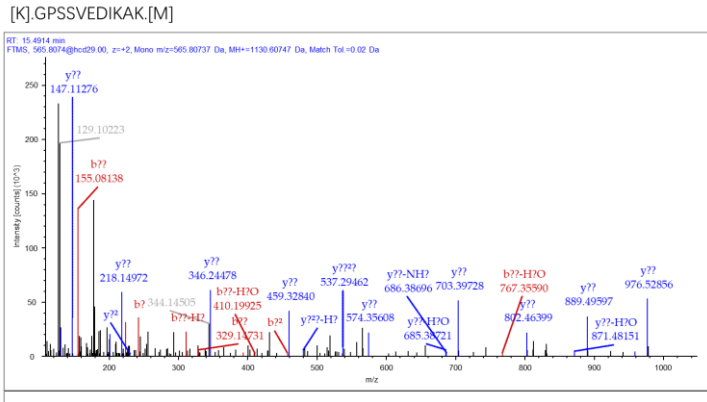
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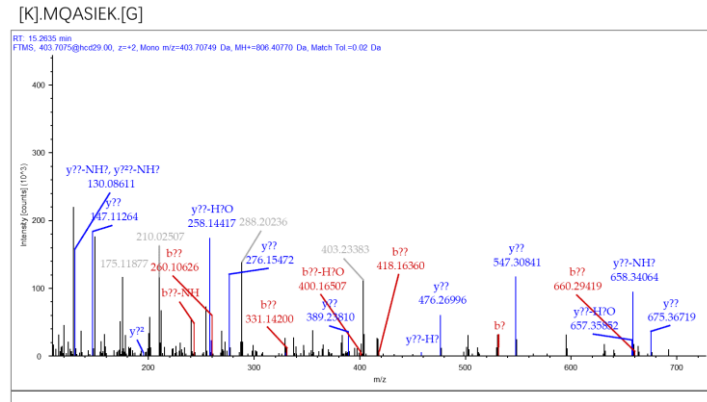
C



D



E



F

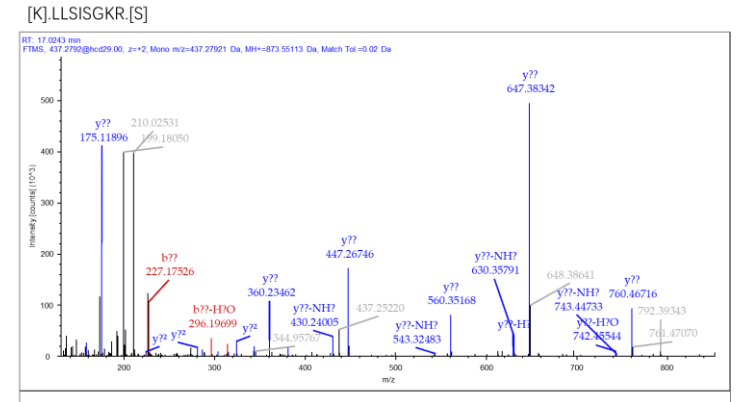


Table S1. Sequence of primers used to amplify target genes

Primer	Primer sequence (5'-3')
MANF	F: TTTACCAGGACCTCAAAGACAGA
	R: TTGCTTCCCGGCAGAACTTTA
MMP2	F: GATACCCTTGACGGTAAGGA
	R: CCTTCTCCCAAGGTCCATAGC
MMP9	F: TGTACCGCTATGGTTACACTCG
	R: GGCAGGGACAGTTGCTTCT
PCNA	F: GCGTGAACCTCACCAGTATGT
	R: TCTTCGGCCCTTAGTGTAATGAT
NPM1	F: GGAGGTGGTAGCAAGGTTCC
	R: TTCACTGGCGCTTTTTCTTCA
β -ACTIN	F: CAAGATCATTGCTCCTCCTG
	R: ATCCACATCTGCTGGAAGG