Supplementary Methods

Buffers: **PPCES buffer;** 30% PEG400, 20% polypropylene glycol, 15% Chremophor EL, 5% ethanol, 30% saline. **Homogenizing buffer;** 150 mM NaCl, 25 mM Tris (pH 7.4), 5 mM EDTA, 10 mM sodium pyrophosphate, 10 mM β-glycerophosphate, 1 mM Na3VO4, 1 mM PMSF and 10 g/ml aprotinin.

Normalization of zymogram samples: Equal wet weight of the minced human AAA tissue or equal number of rat VSMCs, mouse VSMCs or THP-1 cells were maintained in each well of the 6-well plates. The basal secretion of MMP-2 and MMP-9 was determined in the equal volume of the conditioned media during 24 hrs of the preculture before any treatment, which served as an internal control to validate that equivalent amount of the AAA tissue or cells used in each experiment (data not shown). For mouse VSMCs, we relied on the counting of the cells for normalization, as Jnk2+/− cells secreted virtually no MMP-2 or MMP-9.

RT-PCR primers: Following primer sets were used for RT-PCR and quantitative RT-PCR where R and M stand for rat and mouse, respectively.

R/M Lox: 
5’-TGCGGAAGAAAAACTGCCTGG-3’
5’-CGGCTTGGTAAGAAGTCAGACG-3’

R/M Gapdh: 
5’-TGAACGGGAAGCTCACTGGC-3’
5’-CTTCACCACCTTCTTGATGTCATC-3’

Primers for Lox cDNA synthesis with the C-terminal HA epitope tag:
5’-GGATCCACCATGCCTTTCGCTGGAGCG-3’

5’-TCGCAATTGTCAAGCCTAGTGCTGGGATGGTAATACGGTGAAATGGTGCAGCC-3’

**Antibodies and nuclear staining dye:** JNK, p38, phospho-ERK (Santa Cruz Biotechnology), phospho-c-Jun (Cell Signaling Technology), ERK (Upstate Biotechnology), human MMP-9 (Daiichi Fine Chemical), GAPDH (Chemicon), phospho-JNK, phospho-p38 (Promega), HA epitope tag (Roche Diagnostics), CD68, smooth muscle α-actin (DakoCytomation), MOMA2 (BMA Biomedicals AG), human lipocalin-2, mouse MMP-9 (R&D Systems), TO-PRO-3 (Molecular Probes).