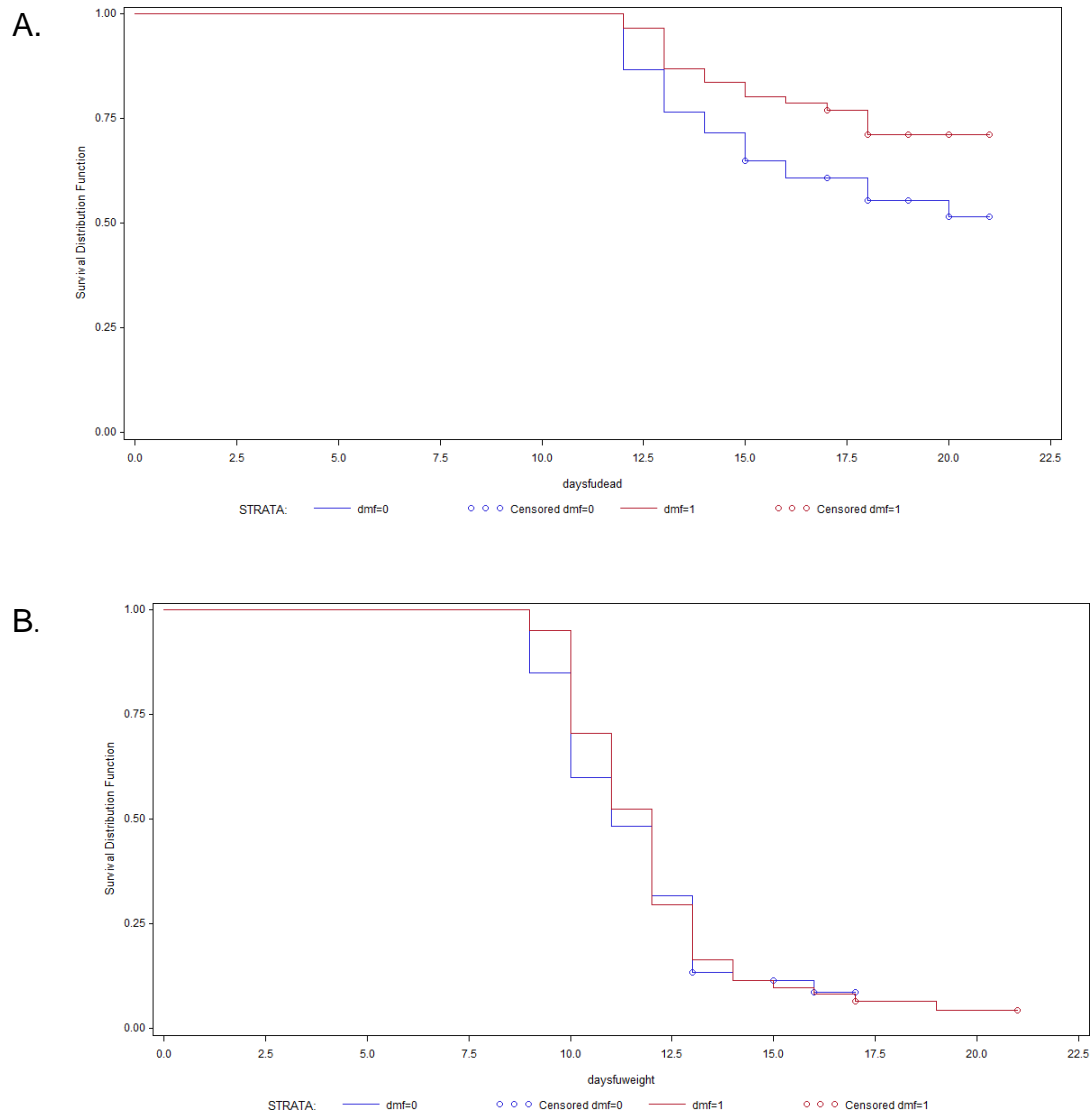


SUPPLEMENTAL DATA

Treatment with dimethyl fumarate reduces the formation and rupture of intracranial aneurysms: Role of Nrf2 activation

Figure 1. Kaplan-Meier and Cox proportional hazards regression plots for time-to-clinical-outcome data (A. death, B. weight loss, C. lateralizing signs and D. hunched posture) stratified by treatment arm (red=DMF; blue=vehicle control).



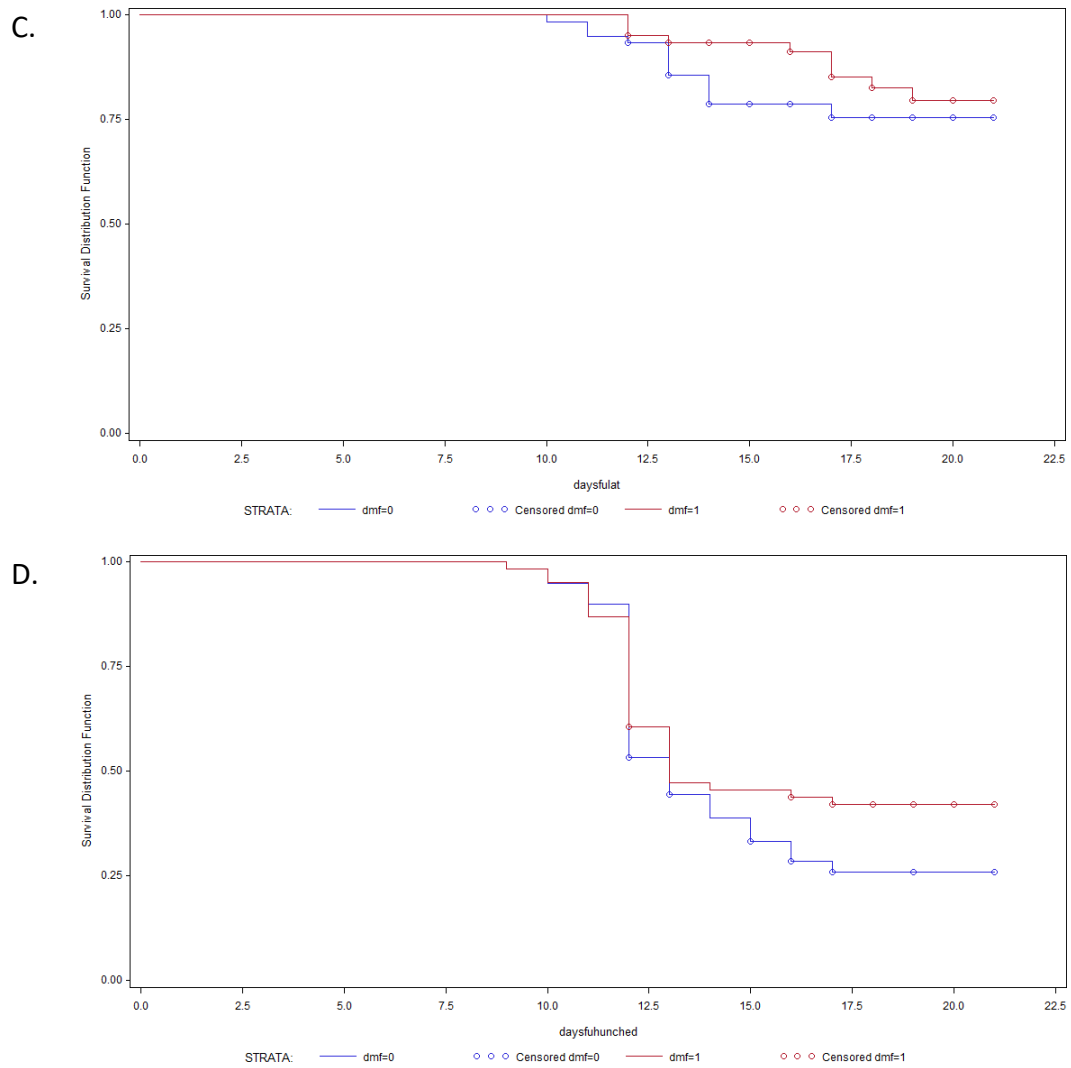


Figure 2. Nrf2-mediated oxidative stress response. The Keap1-Nrf2 pathway from IPA software. Canonical pathway analysis identified that the Keap1-NRF2 pathway was statistically significant with $p\text{-value} = 6.19\text{E-}03$. Pink symbols indicate genes up-regulated by DMF treatment. Orange and blue nodes indicate genes predicted to be activated or inhibited as induced by DMF treatment, respectively. The color intensity is proportional to the degree of fold change.

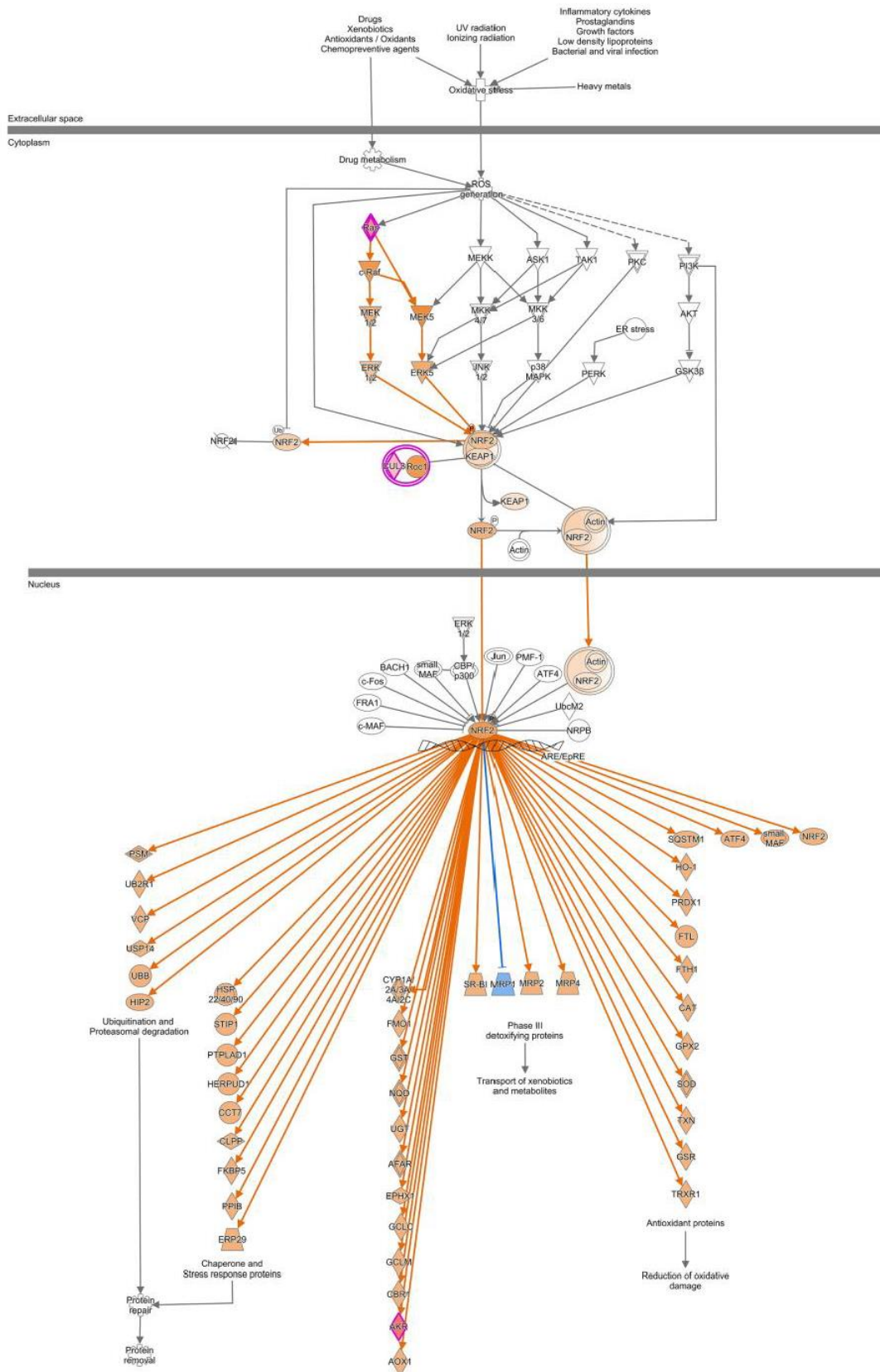


Figure 3. Expected marginal mean values of log- (base 10) mean intensity transformed values of profiled proteins (cluster 5) from Willis Arteries in elastase aneurysm model mice generated by Mass Spectrometry (LC-MS) assays obtained by the fitting of fixed-effects ('Aneurysm' and 'DMF') two-way ANOVA with a first-order interaction term. The hypothesis for contrasts generated from the expected mean values of the experimental groups were tested by Tukey's honest significant pairwise tests. Expected marginal mean values are represented by solid dots and its 95% confidence intervals (CI 95%) are represented by whiskers (*= $p < 0.05$; **= $p < 0.01$, ***= $p < 0.001$).

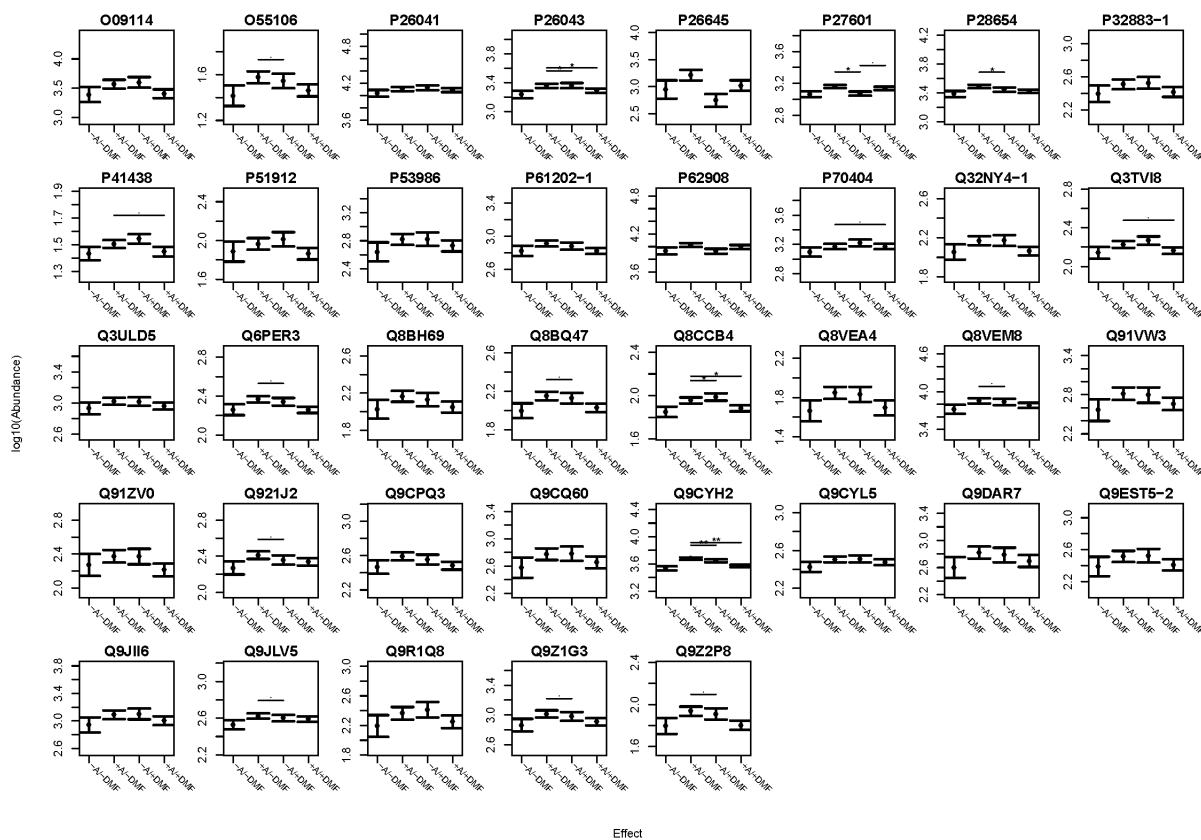


Table 1. Protein list from cluster 5.

UniProt ID	Protein name
O09114	Prostaglandin-H2 D-isomerase [OS=Mus musculus]
O55106	striatin [OS=Mus musculus]
P26041	Moesin [OS=Mus musculus]
P26043	radixin [OS=Mus musculus]
P26645	Myristoylated alanine-rich C-kinase substrate [OS=Mus musculus]
P27601	Guanine nucleotide-binding protein subunit alpha-13 [OS=Mus musculus]
P28654	decorin [OS=Mus musculus]
P32883-1	GTPase KRas [OS=Mus musculus]
P41438	Folate transporter 1 [OS=Mus musculus]
P51912	Neutral amino acid transporter B(0) [OS=Mus musculus]
P53986	Monocarboxylate transporter 1 [OS=Mus musculus]
P61202-1	COP9 signalosome complex subunit 2 [OS=Mus musculus]
P62908	40S ribosomal protein S3 [OS=Mus musculus]
P70404	Isocitrate dehydrogenase [NAD] subunit gamma 1, mitochondrial [OS=Mus musculus]
Q32NY4-1	Metal transporter CNNM3 [OS=Mus musculus]
Q3TVI8	Pre-B-cell leukemia transcription factor-interacting protein 1 [OS=Mus musculus]
Q3ULD5	Methylcrotonoyl-CoA carboxylase beta chain, mitochondrial [OS=Mus musculus]
Q6PER3	Microtubule-associated protein RP/EB family member 3 [OS=Mus musculus]

Q8BH69 Selenide, water dikinase 1 [OS=Mus musculus]

Q8BQ47 Protein canopy homolog 4 [OS=Mus musculus]

Q8CCB4 Vacuolar protein sorting-associated protein 53 homolog [OS=Mus musculus]

Mitochondrial intermembrane space import and assembly protein 40 [OS=Mus musculus]

Q8VEA4

Q8VEM8 Phosphate carrier protein, mitochondrial [OS=Mus musculus]

Q91VW3 SH3 domain-binding glutamic acid-rich-like protein 3 [OS=Mus musculus]

Q91ZV0 Melanoma inhibitory activity protein 2 [OS=Mus musculus]

Q921J2 GTP-binding protein rheb [OS=Mus musculus]

Q9CPQ3 Mitochondrial import receptor subunit TOM22 homolog [OS=Mus musculus]

Q9CQ60 6-phosphogluconolactonase [OS=Mus musculus]

Q9CYH2 Redox-regulatory protein FAM213A [OS=Mus musculus]

Q9CYL5 Golgi-associated plant pathogenesis-related protein 1 [OS=Mus musculus]

Q9DAR7 M7GpppX diphosphatase [OS=Mus musculus]

Isoform 2 of Acidic leucine-rich nuclear phosphoprotein 32 family member B

Q9EST5-2 [OS=Mus musculus]

Q9JII6 alcohol dehydrogenase [NADP(+)] [OS=Mus musculus]

Q9JLV5 Cullin-3 [OS=Mus musculus]

Q9R1Q8 Transgelin-3 [OS=Mus musculus]

Q9Z1G3 V-type proton ATPase subunit C 1 [OS=Mus musculus]

Q9Z2P8 vesicle-associated membrane protein 5 [OS=Mus musculus]

Figure 4. Representative brain sections demonstrating expression of α SMA (green), Nrf2 (red indicated by arrows) and nuclear stain DAPI (blue) in (A) sham operated animal, (B) saline vehicle-treated animal and (C) DMF treated animal. Confocal images taken using Nikon eclipse Ti2 microscope and 60X magnification (scale bar, 10 μ m).

