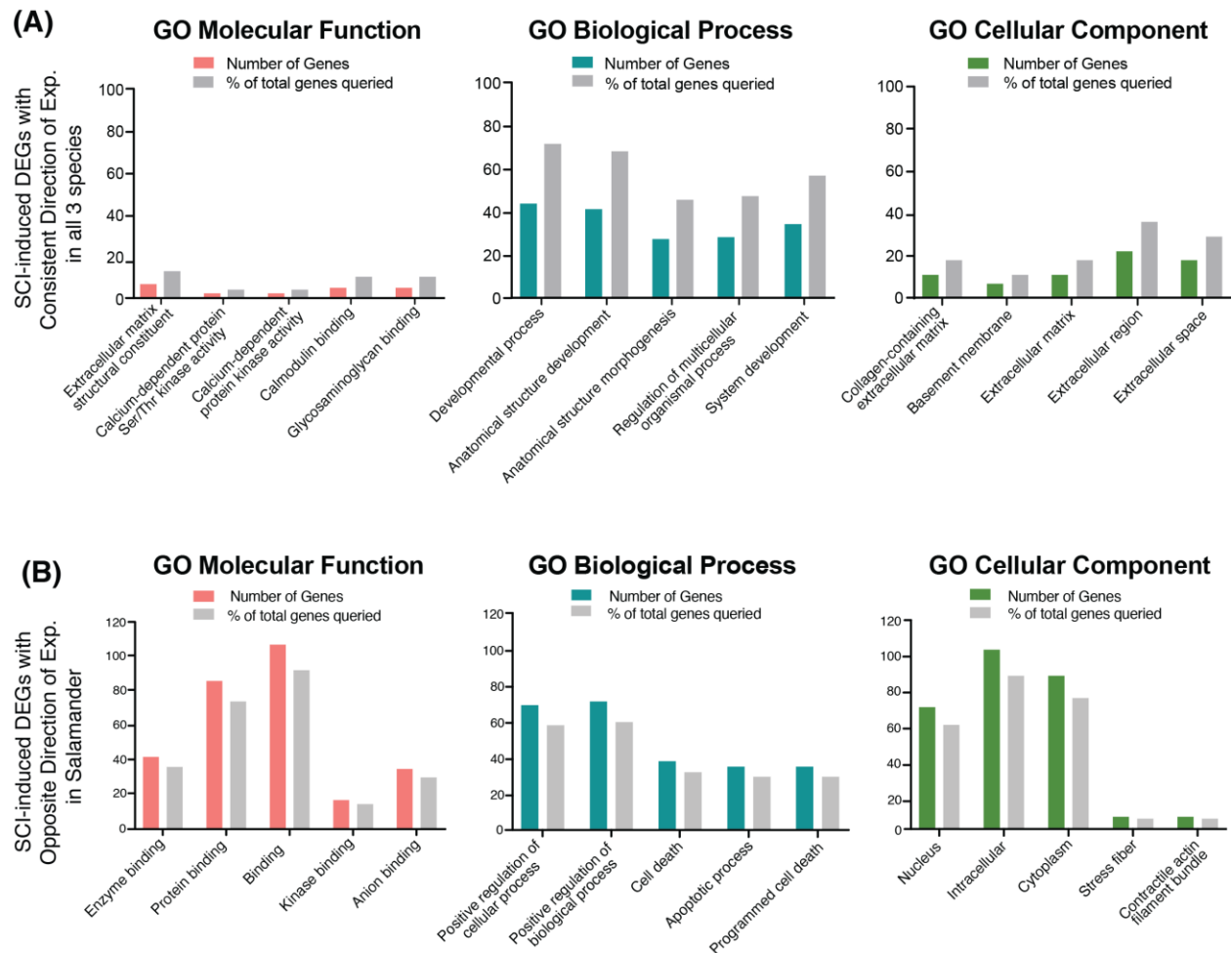
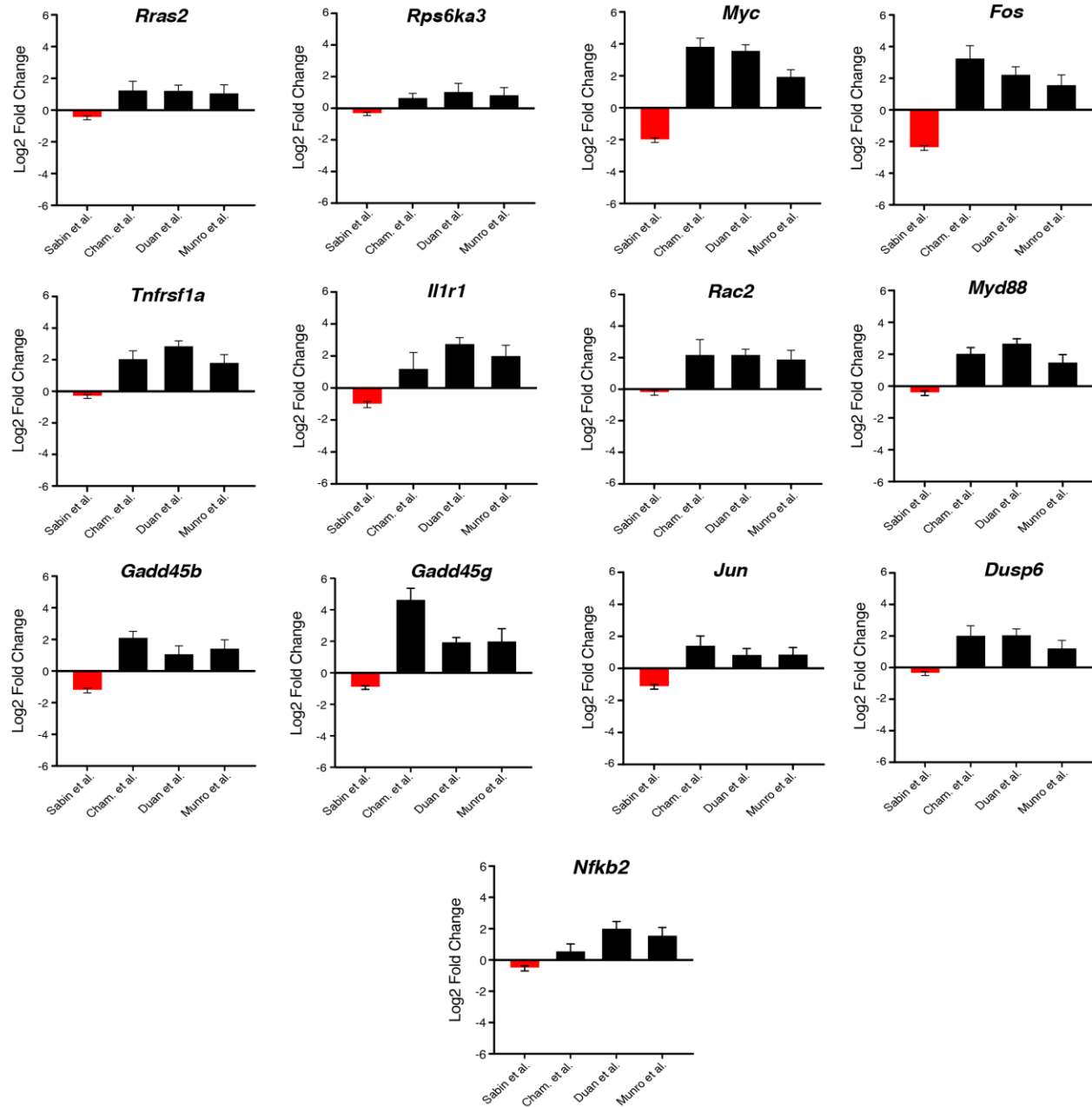




## Supplementary Material



**Figure S1.** Distribution of SCI-induced DEGs in each GO category. (A) Bar graphs depict the number and percentage of query genes that fell into each GO category for orthologs with a consistent direction of expression in all 3 species. GO “Biological Process” had the highest number of genes overall. (B) The number and percentage of query genes in each GO category for orthologs with an opposite direction of expression in salamanders. All 3 categories had a relatively similar number of genes.



**Figure S2.** Log2FC Bar graphs for the MAPK pathway orthologs. These were significantly differentially expressed after SCI ( $p\text{-adj.} \leq 0.05$ ) in all four studies. The 13 orthologs (*Rras2*, *Rps6ka3*, *Myc*, *Fos*, *Tnfrsf1a*, *Il1r1*, *Rac2*, *Myd88*, *Gadd45b*, *Gadd45g*, *Jun*, *Dusp6*, *Nfkb2*) were downregulated in salamanders (red) and upregulated in rodents (black). Error bars indicate the 95% confidence interval.



**Table S1.** Quality control checklist for studies included in the cross-species comparison.

Article	Peer Reviewed	Statement of Temperature Control	Randomization of Treatment/Control	Allocation concealment	Blinded assessment of outcome	Avoidance of anesthetics with marked intrinsic properties	Use of animals with hypertension or diabetes	Sample size calculation	Statement of compliance w/ regulatory requirements	Statement regarding possible conflict of interest
Chamankhah et al. (2012)	Y	N	*N/A	N/A	N/A	Halothane and a 1:1 mixture of O <sub>2</sub> /N <sub>2</sub> O	N	N	Y	Y
Sabin et al. (2015)	Y	Y (for immunohistochemistry)	N/A	N/A	N/A	0.01% p-amino benzocaine	N	N	Y	N
Duan et al. (2015)	Y	Y (for immunohistochemistry)	Y (for behavioural work)	N/A	Y (for behavioural work)	Intraperitoneal (IP) injections of 6% chloral hydrate	N	N	Y	Y
Munro et al. (2012)	Y	Y (for immunohistochemistry)	N/A	N/A	Y (for histology)	Intraperitoneal (IP) injection of ketamine and xylazine	N	N	Y	Y

\*Note: “N/A” indicates that the measure was not explicitly commented upon within the article.

**Table S2.** List of orthologs with common or inconsistent expression patterns across the 3 species.

Orthologs with Consistent Direction of Exp. in all 3 Species (61 total)		Orthologs with an Opposite Direction of Exp. in Salamander (119 total)	
Upregulated in all 3 species	Downregulated in all 3 species	Downregulated in salamander, upregulated in rat & mice	Upregulated in salamander, downregulated in rat & mice
Spry1	Esrrg	Cdt1	Grm3
Postn	Hapln1	Aprt	Lrrc4c
Xdh		Tubb6	Lmo3
Hbegf		Xbp1	Dao
Thbs2		Trib1	Npy5r
Cnn2		Myc	Cbln1
Mvp		Adamts1	Olfm3
Tgfb1		Alox5ap	Rapgef4
Orai1		Gadd45g	Ak5
Atp6v0e		Emp1	Bcan
Surf4		Clic1	Gng8
Emp3		Myd88	Slc27a2
Lamc1		Gadd45b	Gng13
Tnc		Rbm47	
Hspb8		Il17ra	
Col4a1		Lsp1	
Calu		Tgif1	
Eif4ebp1		Midn	
Vamp8		Il4ra	
Mrc1		Racgap1	



Loxl2  
Srgn  
Prss23  
Fn1  
Rai14  
Iqgap1  
Rbp1  
Gpx1  
Tbxas1  
Slc39a14  
Mapkapk3  
Ehd2  
Nek6  
Efemp2  
C1qb  
Tlr2  
Acta2  
Ctsz  
Man1a  
Icam1  
C1qc  
Dab2  
Vim  
Cng1  
Nln  
Slc7a7  
Steap4  
Agpat2  
Ptpn6  
Gba  
Slc39a8  
Ccl3  
Tagln  
Cybb  
Nedd1  
Cd53  
Mapkapk2  
Itga5  
Tyrobp

Lmna  
Crip1  
Klf6  
Tnfrsf1a  
Fos  
Actn1  
Stat3  
Alg8  
Cttnbp2nl  
Pycard  
Sdf2l1  
Ccna2  
Cks1b  
Mmp19  
Top2a  
F13a1  
Tacc3  
Stk17b  
Anxa1  
Mcm5  
Ctsc  
Dusp6  
Ptbp1  
Timp1  
Junb  
Pdlim4  
F3  
Bub1  
Casp1  
Hcls1  
Ftsj3  
Ccnd1  
Cenpn  
Rps6ka3  
Lcp1  
Myh9  
Cndp2  
Antxr2  
Jun  
Arhgdib  
Cmtm6  
Prc1  
Spc25  
Id1  
Vcan  
Tk1  
Rras2  
Rac2  
Ppib  
Pmepa1  
Lyn  
Melk  
B4galt1



Cbfb  
Lgals3  
Tead1  
Elk3  
Npl  
Sgpl1  
Psmb9  
Tmpos  
Arpc1b  
Cyba  
Lgals3bp  
Smc4  
Rhbd2  
Casp7  
Actn4  
Ube2c  
Dtx3l  
Cd300a  
Arl11  
Plxnb2  
Ect2  
Aurkb  
Cdca3  
Sdc4  
Fblim1  
Rgs19  
Nfkb2  
Hk2  
Parp9  
Rrbp1  
Pole2  
Plk4  
Il1r1

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