

Supplementary Materials: Diphlorethohydroxycarmalol Derived from *Ishige okamurae* Improves Behavioral and Physiological Responses of Muscle Atrophy Induced by Dexamethasone in an In-Vivo Model

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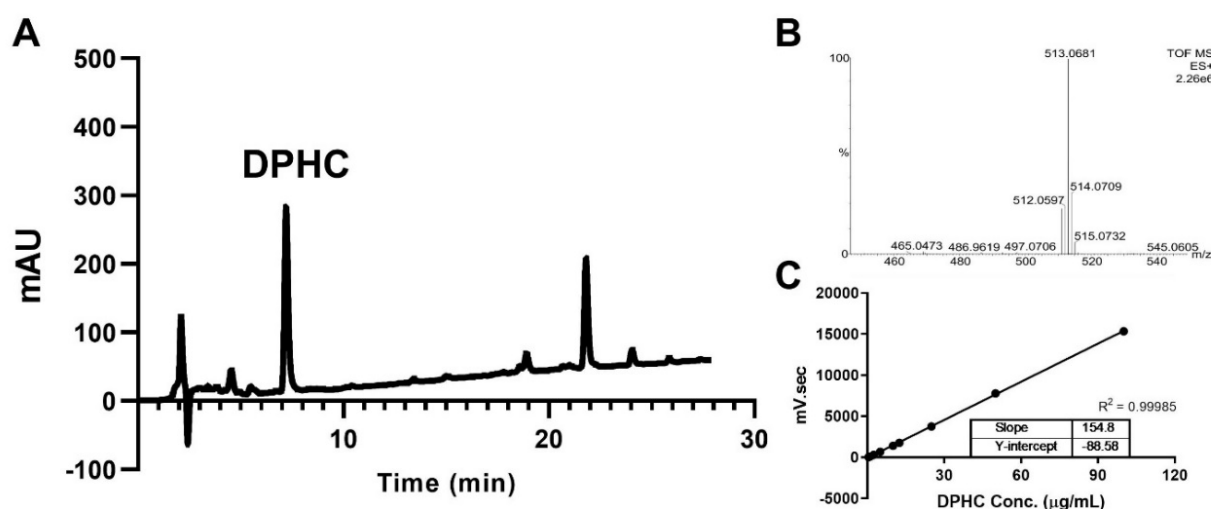


Figure S1. HPLC (A) and MS/MS (B) chromatogram data of DPHC in IO and standard curve data for quantification of DPHC (C).

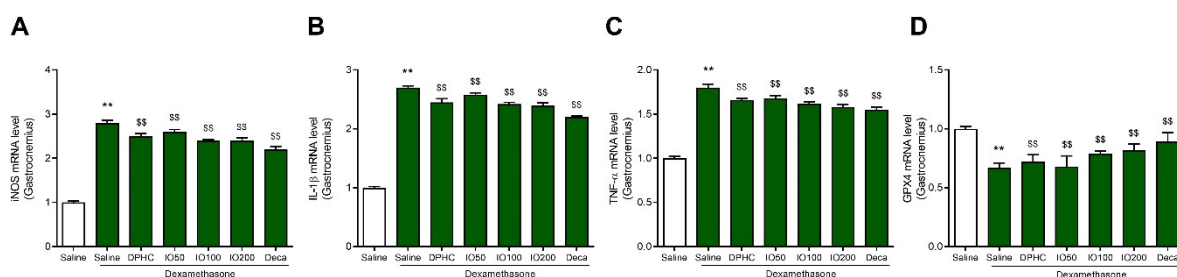


Figure S2. Levels of mRNA related to oxidative stress in gastrocnemius muscle of DEX-treated mice displaying muscle atrophy. The panels display results for iNOS (A), IL-1 β (B), TNF- α (C), and GPX4 (D). Each group was examined in $n = 3$ mice. All values are expressed as the mean \pm standard error. Significant differences are indicated as ** $p < 0.01$ compared with control or \$ $p < 0.01$ compared with DEX-saline (Mann–Whitney U test).

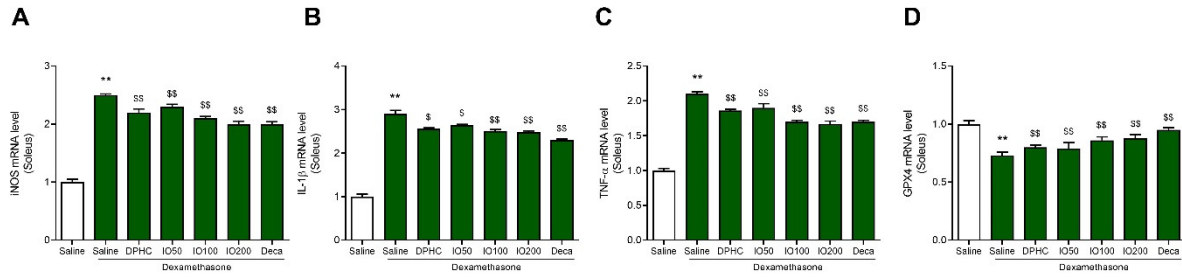


Figure S3. Levels of mRNA related to oxidative stress in soleus muscle of muscle DEX-treated mice displaying atrophy. The panels display results for iNOS (**A**), iL-1 β (**B**), TNF- α (**C**), and GPX4 (**D**). Each group was examined in $n = 3$ mice. All values are expressed as the mean \pm standard error. Significant differences are indicated as ** $p < 0.01$ compared with control or \$ $p < 0.05$, \$\$ $p < 0.01$ compared with DEX-saline (Mann-Whitney U test).

Table S1. List of primer for qRT-PCR.

Gene		Primers
<i>Foxo3a</i>	Forward	5'-ACC TTC GTC TCT GAA CTC CTT G-3'
	Reverse	5'-AGT GTG ACA CGG AAG AGA AGG T-3'
<i>Atrogin-1</i>	Forward	5'-GAC ATT CAG AAC AGC AAA ACC A-3'
	Reverse	5'-GCT CCT TCG TAC TTC CTT TGT G-3'
<i>MuRF1</i>	Forward	5'-ATC TAG CCT GAT TCC TGA TGG A-3'
	Reverse	5'-ACC ACA GGC TTG GTA AAC ATC T-3'
<i>PI3k</i>	Forward	5'-AGC TGA GTA CCG AGA GAT CGA C-3'
	Reverse	5'-TCA GCC ACA TCA AGT ATT GGT C-3'
<i>Akt</i>	Forward	5'-CCT TTA TTG GCT ACA AGG AAC G-3'
	Reverse	5'-GTG CCA CTG AGA AGT TGT TGA G-3'
<i>TRPV4</i>	Forward	5'-CCCATCCTCAAAGTCTTCAATC -3'
	Reverse	5'- GGTCACAAGAAGGAGAGCAGT-3'
<i>A1R</i>	Forward	5'-GAAGATTGGAACGACCACTTC -3'
	Reverse	5'-AGTCATCAGCTTCTCCTCTGG -3'
<i>Myostatin</i>	Forward	5'- TTTACCTGTTCATGCTGATTGC-3'
	Reverse	5'- CATTACACAGCCCCTCTTTTTC-3'
<i>SIRT1</i>	Forward	5'-TGTGTGGAAGAAAAACCACAAG -3'
	Reverse	5'- ACCAACAGCCTTAAAATCTGGA -3'
<i>TGF-β</i>	Forward	5'-TGA CGT CAC TGG AGT TGT AC-3'
	Reverse	5' GGT TCA TGT CAT GGA TGG TG-3'