

Figure S1. GW8510 improves muscle atrophy and weakness in DEX-induced mice. Mouse body weight and muscle/body weight ratio of skeletal muscle. n=5-6/group. #P<0.05, ###P<0.0001 vs. sham; \*P<0.05 vs. DEX. GC, gastrocnemius; SOL, soleus; TA, tibialis anterior; EDL, extensor digitorum longus; Quad, quadriceps; DEX, dexamethasone.

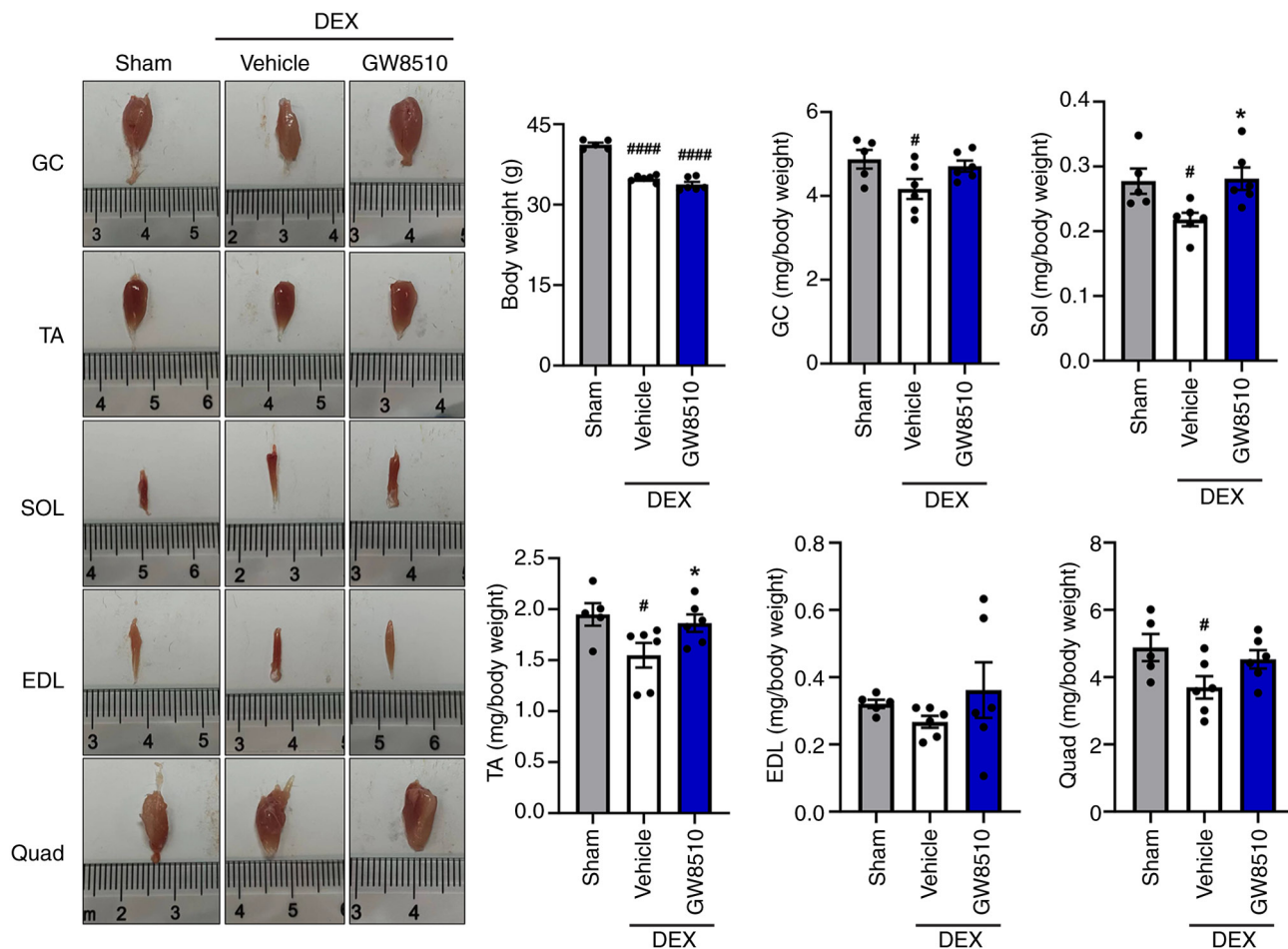


Figure S2. GW8510 improves muscle atrophy in GC and TA in DEX-induced mice. (A) Hematoxylin-eosin staining of GC and TA. Scale bar, 10  $\mu\text{m}$ . (B) Mean CSA distribution of GC and TA muscle.  $n=6/\text{group}$ . (C) Maximal grip strength in limbs and latency to fall off. (D) Activity of SOD and creatine kinase in serum.  $n=5-6/\text{group}$ . <sup>#</sup> $P<0.05$ , <sup>####</sup> $P<0.0001$  vs. sham; <sup>\*</sup> $P<0.05$ , <sup>\*\*</sup> $P<0.01$ , <sup>\*\*\*\*</sup> $P<0.0001$  vs. DEX. dexamethasone. GC, gastrocnemius; TA, tibialis anterior; CSA, cross-sectional area; SOD, superoxide dismutase.

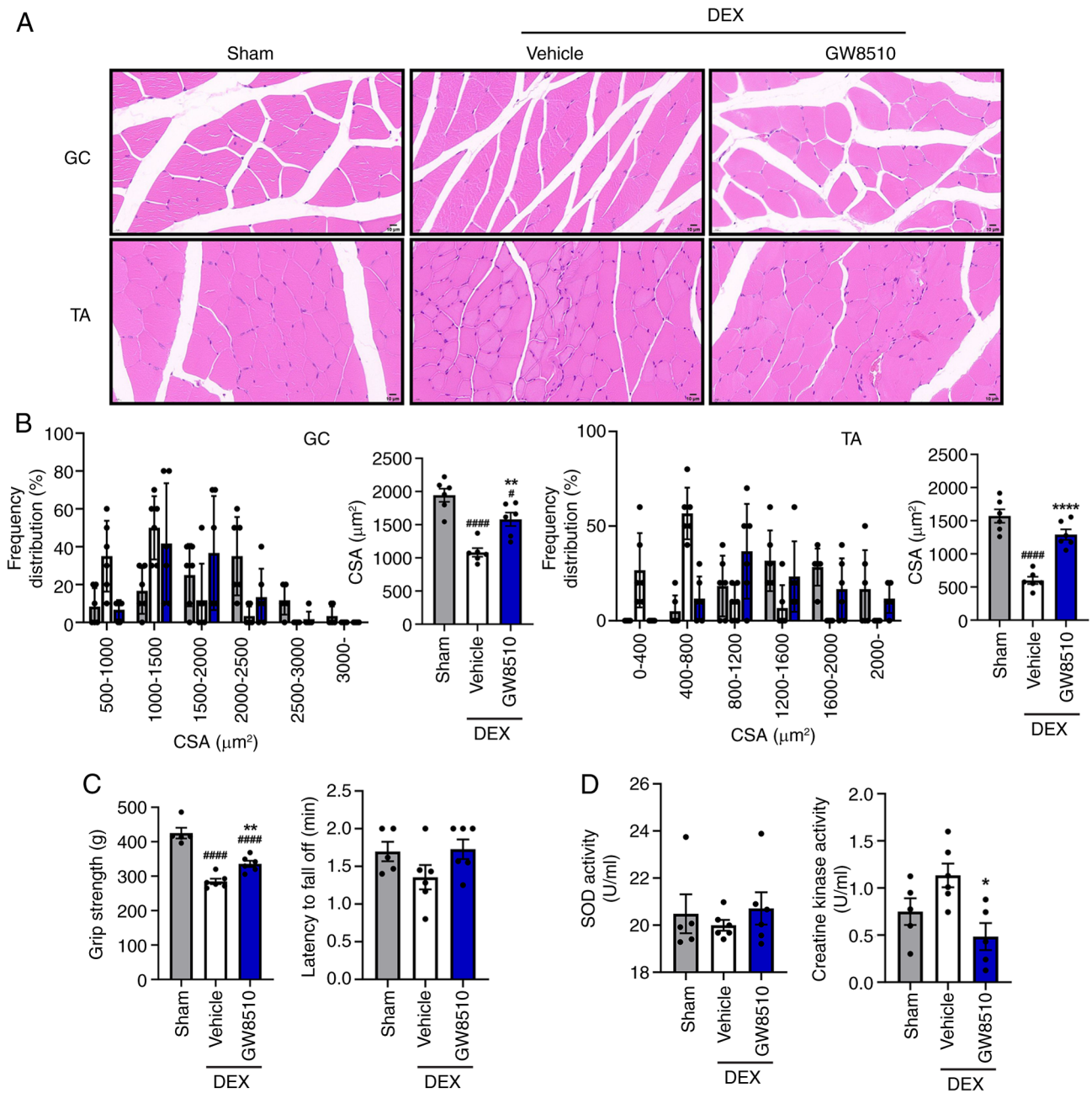


Figure S3. GW8510 improves muscle injury in glycerol-induced mice. Mouse body weight and muscle/body weight ratio of skeletal muscle. n=4-5/group. #P<0.05 vs. sham; \*\*P<0.01 vs. glycerol. GC, gastrocnemius; SOL, soleus; TA, tibialis anterior; EDL, extensor digitorum longus; Quad, quadriceps.

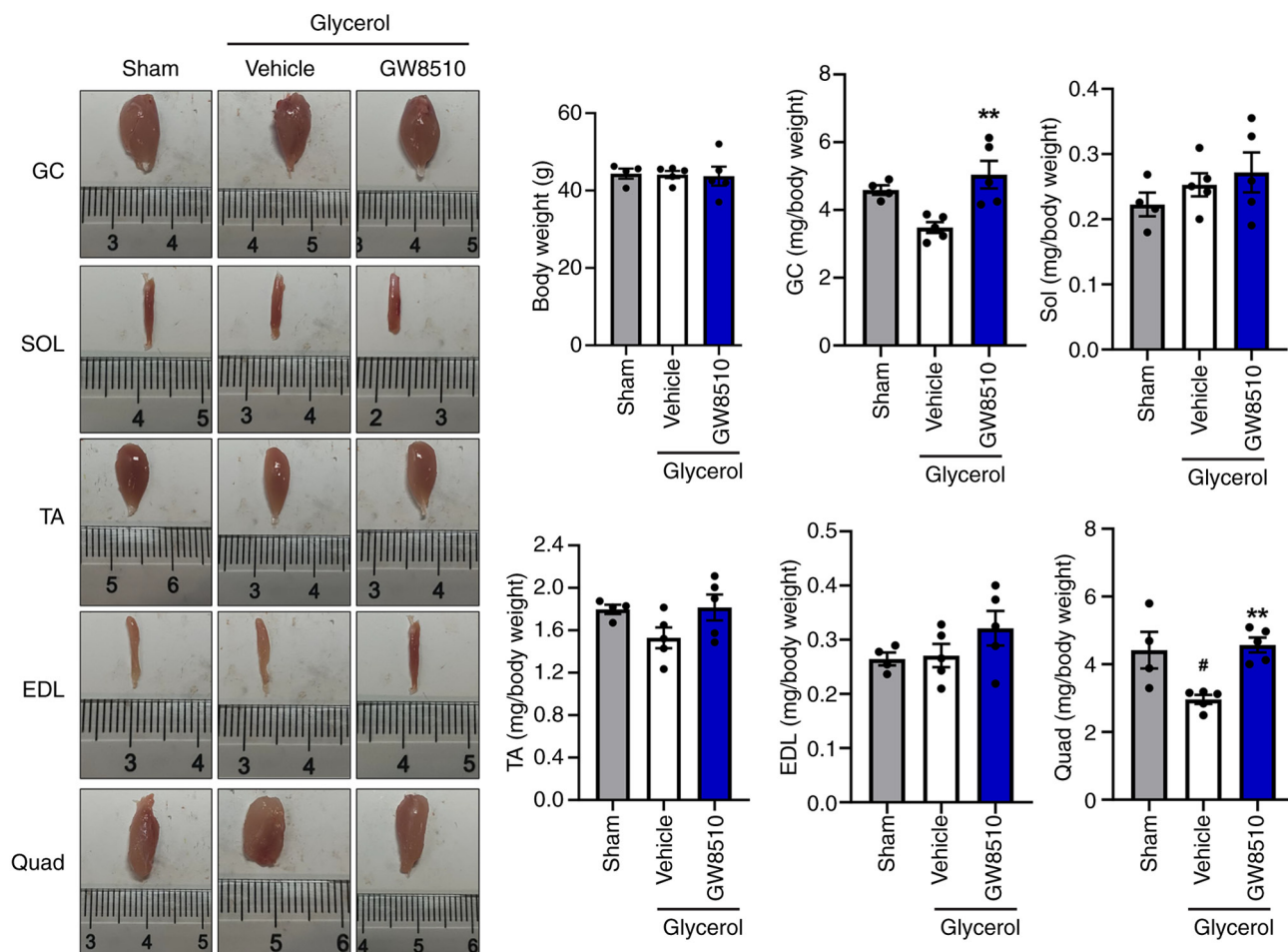


Figure S4. GW8510 improves muscle atrophy in GC and SOL in glycerol-induced mice. (A) Hematoxylin and eosin staining. Scale bar, 10  $\mu\text{m}$ . (B) Mean CSA distribution of GC and SOL muscle.  $n=6/\text{group}$ . (C) Maximal grip strength in four limbs and latency to fall off on day 4. (D) Activity of SOD and creatine kinase.  $n=4-5/\text{group}$ .  $^{\#}P<0.05$ ,  $^{\#\#}P<0.001$  vs. sham;  $^*P<0.05$ ,  $^{**}P<0.01$  vs. glycerol. GC, gastrocnemius; SOL, soleus; CSA, cross-sectional area; SOD, superoxide dismutase.

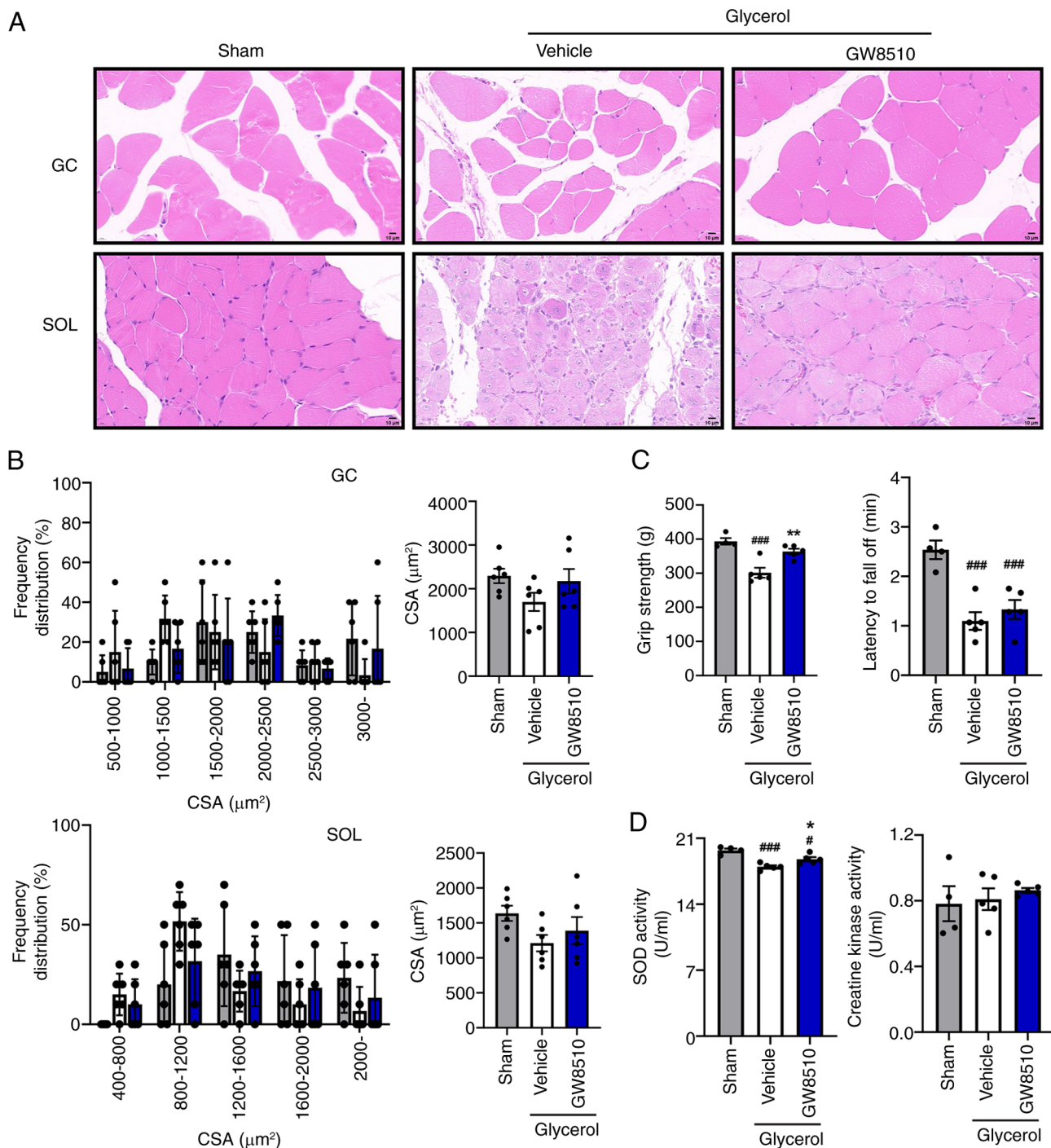


Figure S5. GW8510 increases p21 and decreases p16 expression. (A) Relative expression of p21 and p16 in C2C12 myotubes stimulated with DEX (10  $\mu$ M) or vehicle, followed by treatment with GW8510 (2  $\mu$ M) or vehicle for 24 h. (B) Western blot of p21 and p16 protein levels. n=3/group. #P<0.05 vs. control; \*P<0.05 vs. DEX. DEX, dexamethasone.

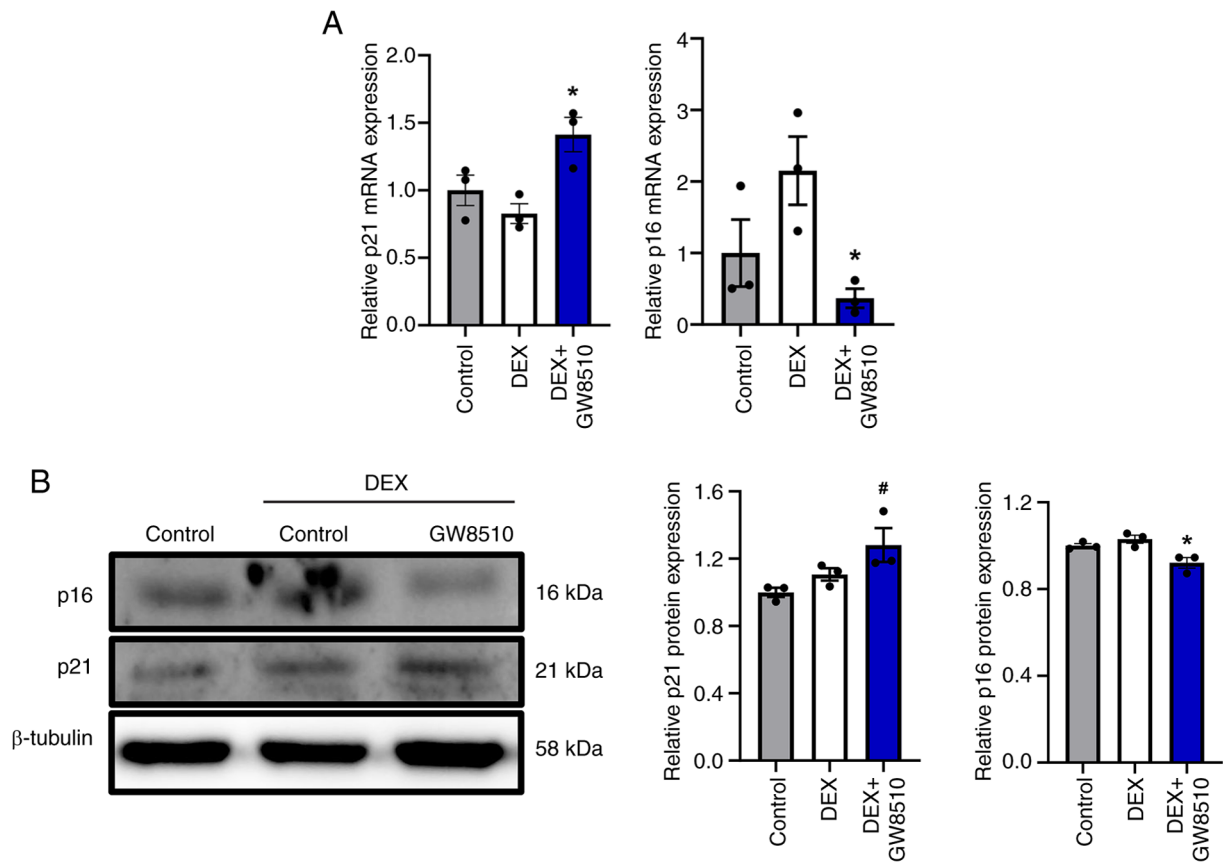


Figure S6. GW8510 does not affect the protein expression of oxidative phosphorylation complexes in C2C12 myotubes. #P<0.05 vs. control; \*P<0.05 vs. DEX. DEX, dexamethasone.

