

Figure 2. Effects of *in vivo* melatonin treatment on specific white adipocyte marker ASC-1 expression in inguinal adipose tissue from Zucker rats.

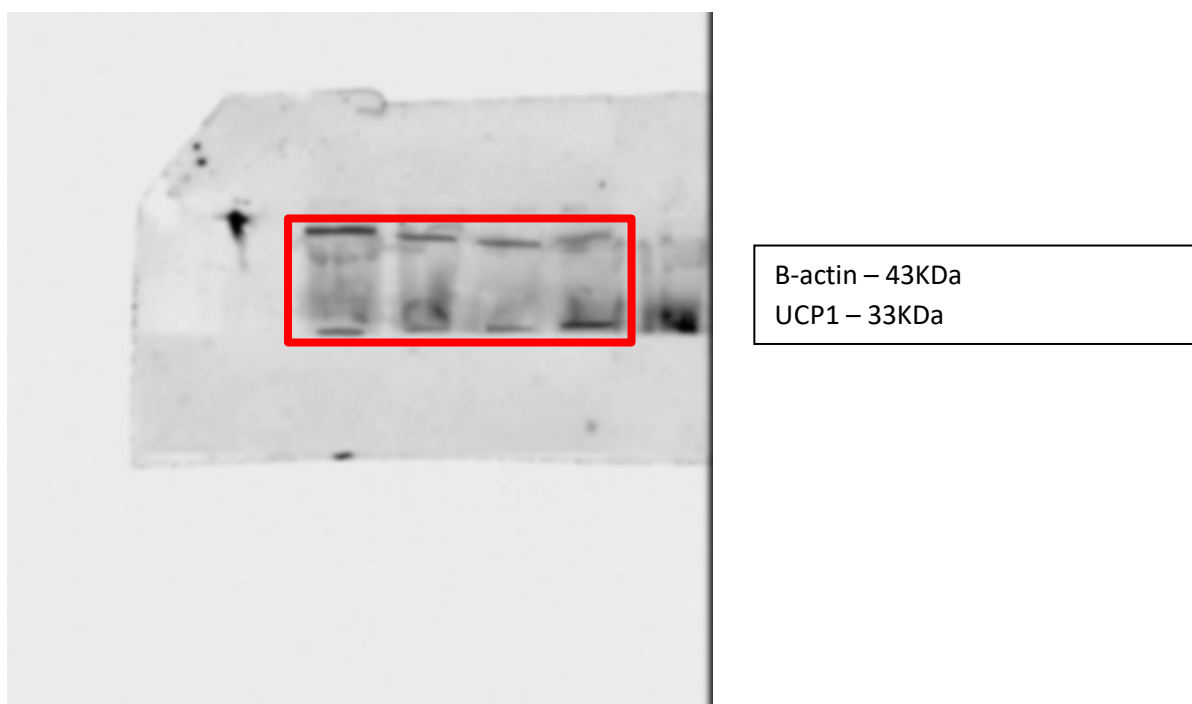


Figure 3. Effects of *in vivo* melatonin supplementation on thermogenic protein UCP1 expression in MSC of inguinal adipose tissue from Zucker rats. ZL, Zucker lean rats; ZDF, Zucker diabetic fatty rats; C, unsupplemented control; M, melatonin-supplemented. All values are expressed as mean \pm SEM of three independent experiments in duplicate. ** $P < 0.01$; * $P < 0.05$; ## $P < 0.01$.

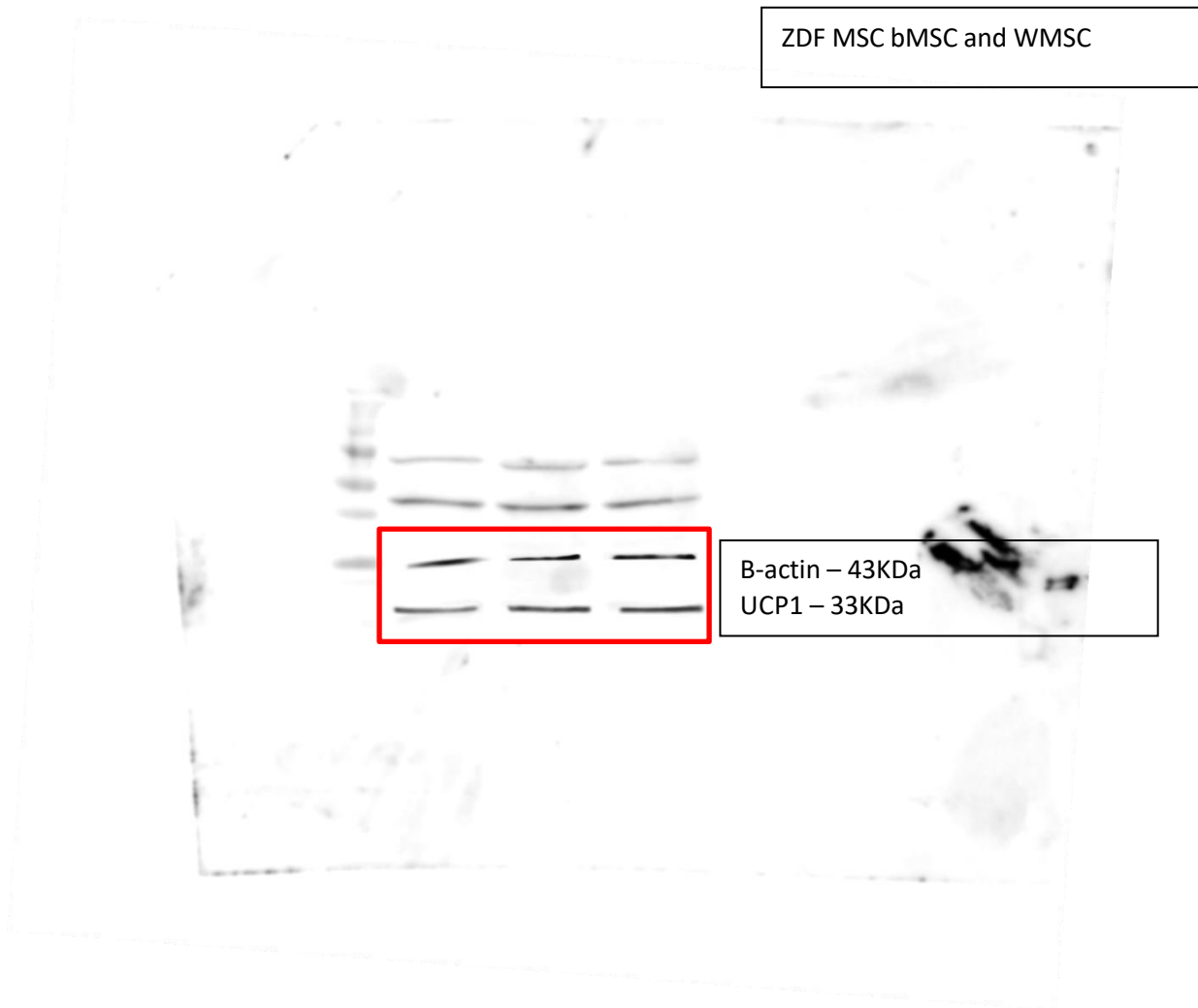


Figure 7. Effects of *in vitro* melatonin treatment on thermogenic protein UCP1 expression in differentiated adipocytes from MSC of inguinal adipose tissue from ZDF rats. MSC, mesenchymal stem cells; Adipocytes, differentiated adipocytes after 21 days; Adipocytes+MLT, differentiated adipocytes after 21 days incubated with melatonin. All values are expressed as mean \pm SEM of three independent experiments in duplicate. * $P < 0.05$.

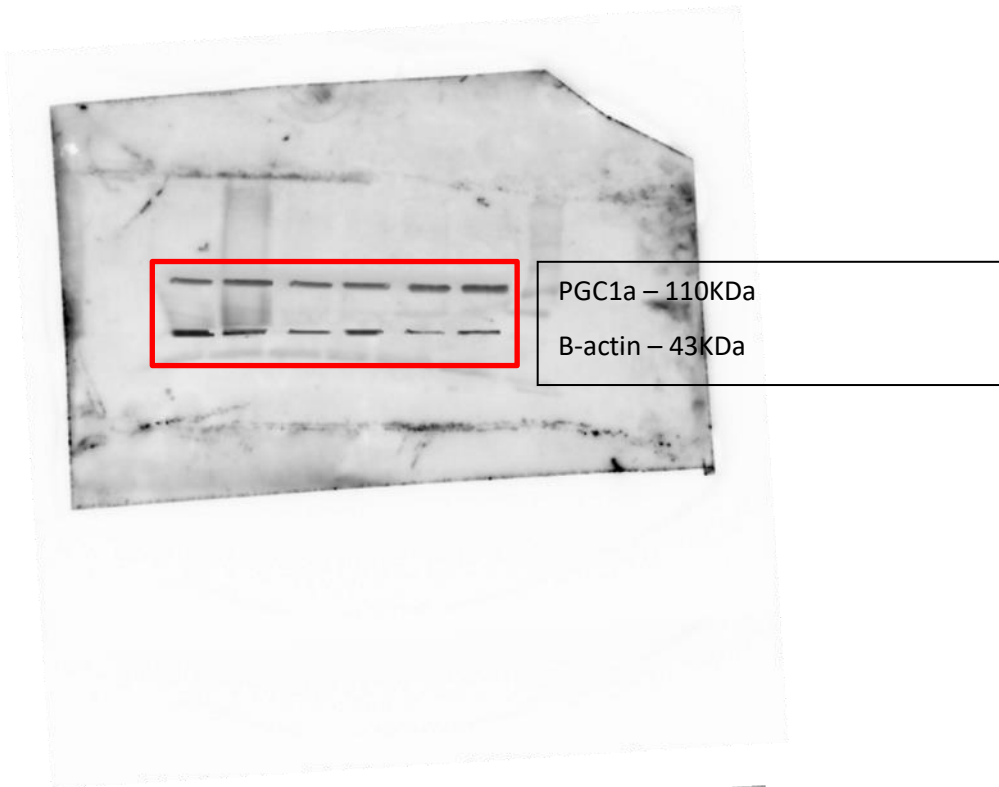
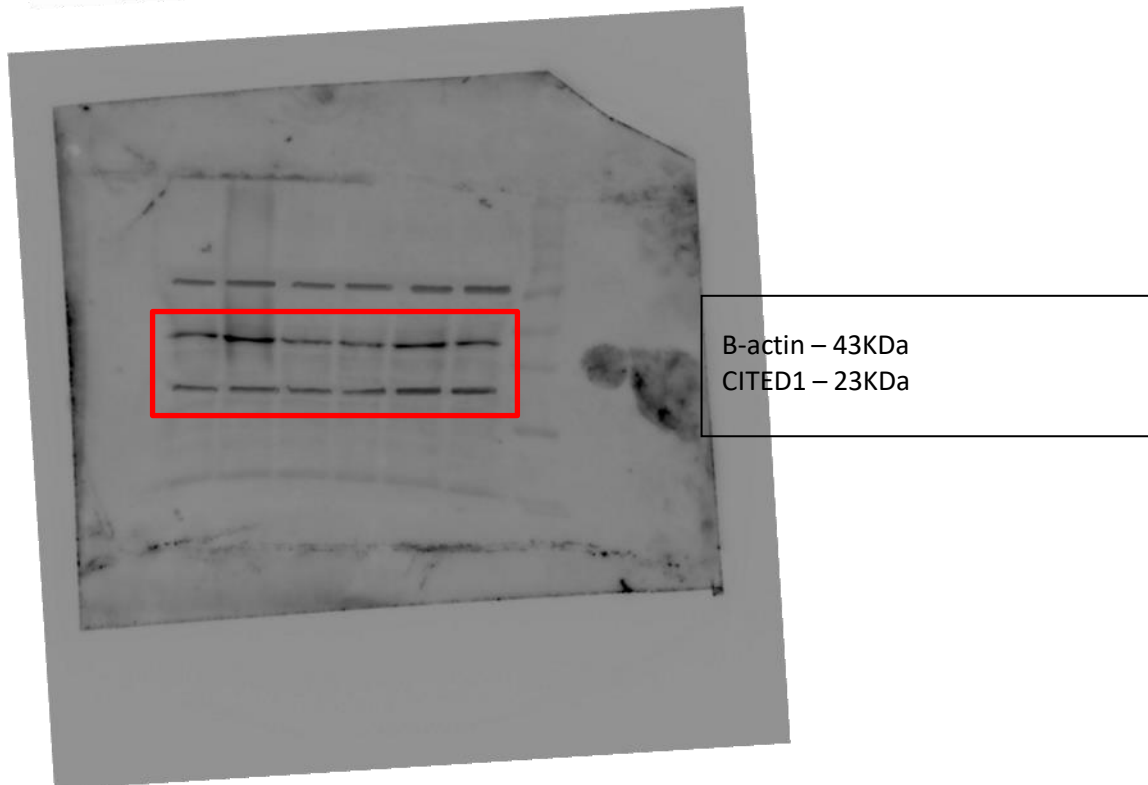
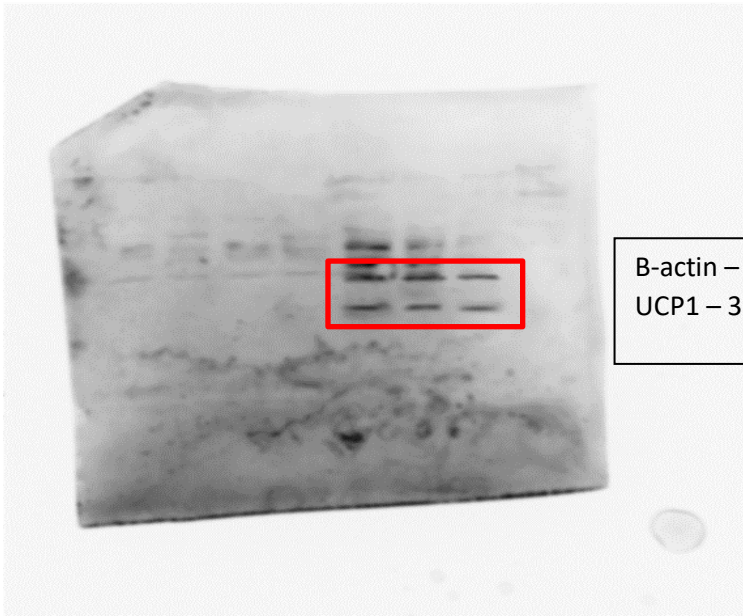
A**B**

Figure 8. Effects of *in vitro* melatonin treatment on brown-like cell marker A) PGC1- α and B) CITED1 expression in differentiated adipocytes from WMSC and bMSC inguinal adipose tissue from ZDF rats. MSC, mesenchymal stem cells; Adipocytes, differentiated adipocytes after 21 days, Adipocytes+MLT, differentiated adipocytes after 21 days incubated with melatonin. All values are expressed as mean \pm SEM of three independent experiments in duplicate. ** $P < 0.01$; * $P < 0.05$.

Human MSC

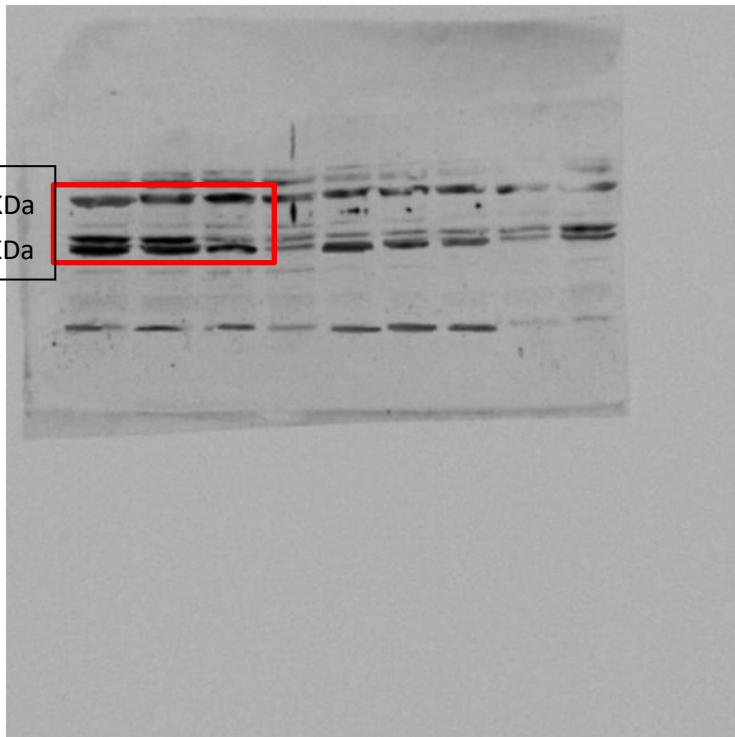
A



B-actin – 43KDa
UCP1 – 33KDa

B

PGC1a – 110KDa
B-actin – 43KDa



C

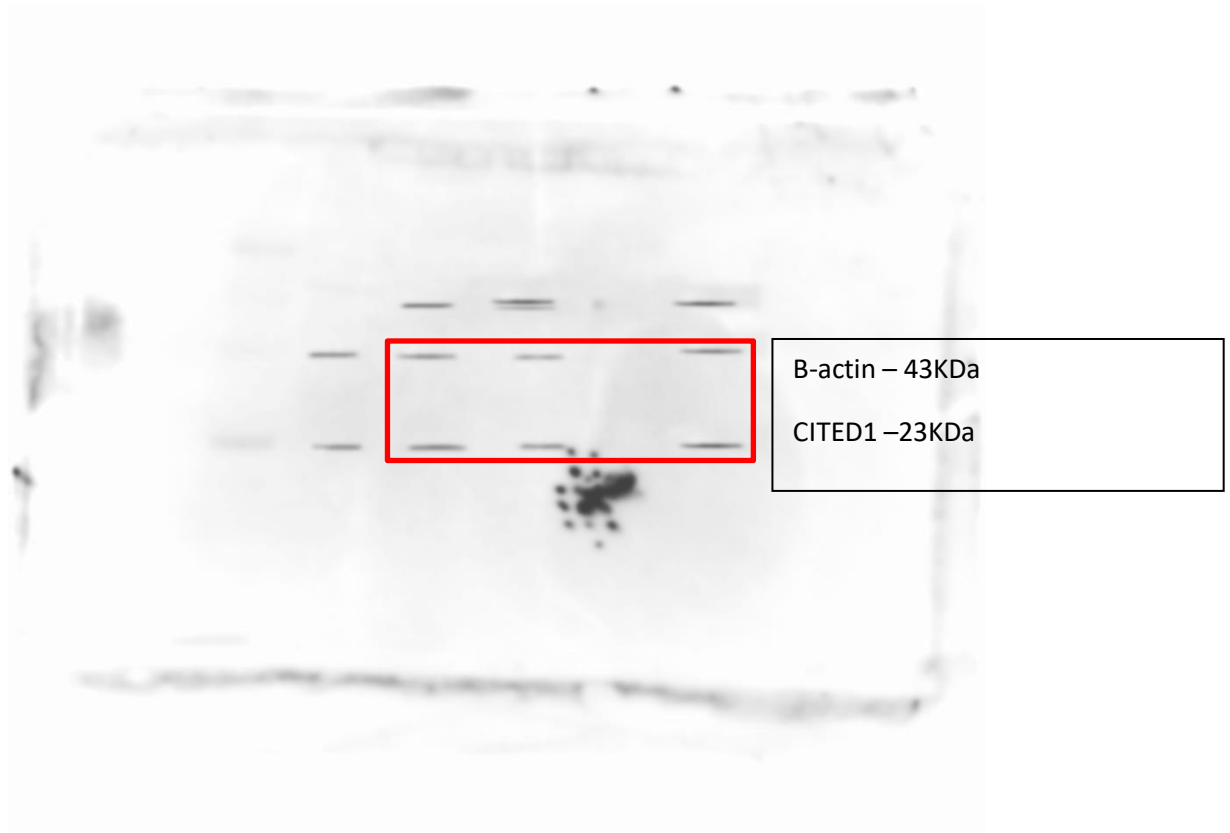


Figure 9. Effects of *in vitro* melatonin treatment on thermogenic protein A) UCP1, B) PGC1- α and C) brown-like cell marker CITED1 expression in differentiated adipocytes from hMSC isolated from lipoaspirates' adipose tissue. MSC, human mesenchymal stem cells; Adipocytes, differentiated adipocytes after 21 days; Adipocytes+MLT, differentiated adipocytes after 21 days incubated with melatonin. All values are expressed as mean \pm SEM of three independent experiments in duplicate. ** $P < 0.01$; * $P < 0.05$.