Tissue Weights for Muscle Tsc1 Knockout Mice

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1 Purpose

To determine tissue weights at sacrifice for fat pads and muscle tissues

2 Experimental Details

At sacrifice, after a 16h fast data were entered and collected in the raw data sheet

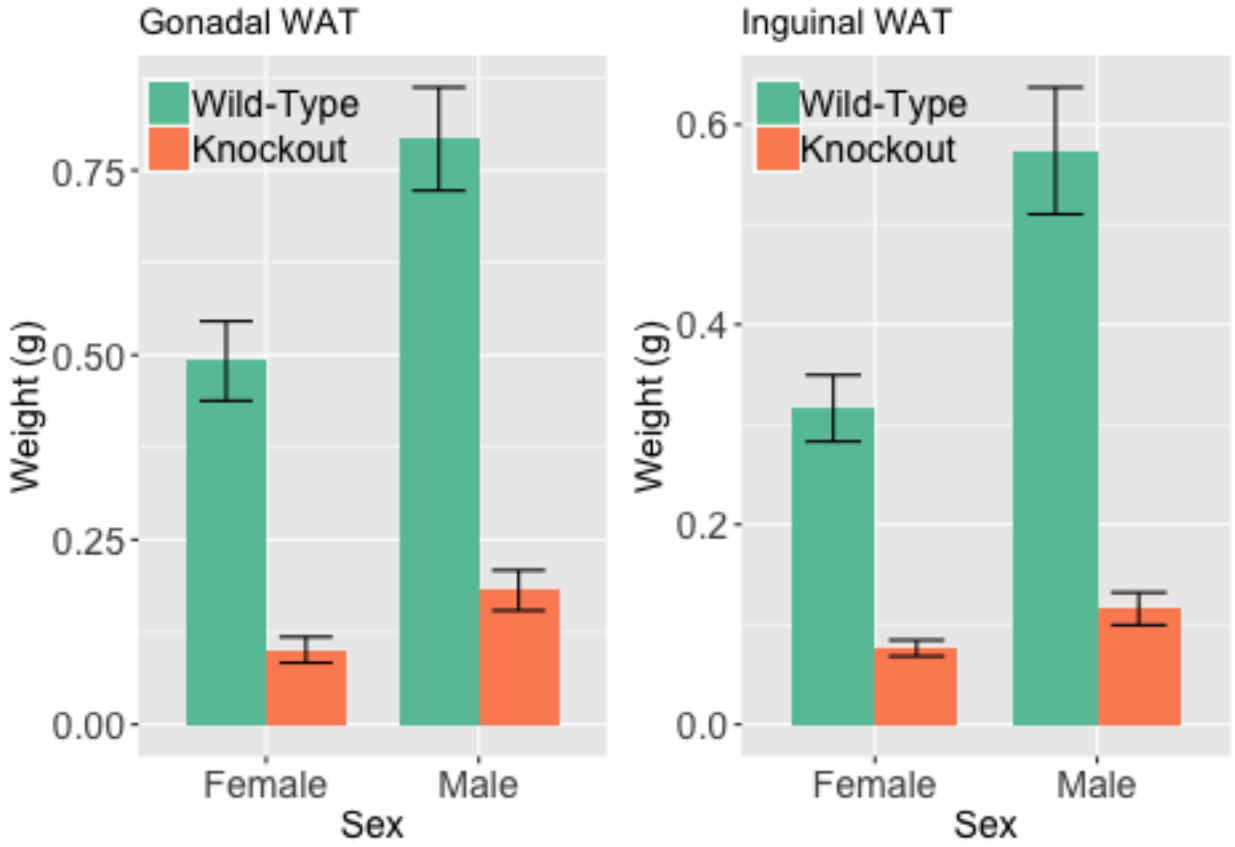
These data can be found in **/Users/davebrid/Documents/GitHub/TissueSpecificTscKnockouts/Mouse Data/Muscle Tsc1 Knockout/NCD** in a file named **Sacrifice Data.csv**. This script was most recently updated on **Thu Feb 28 13:58:44 2019**.

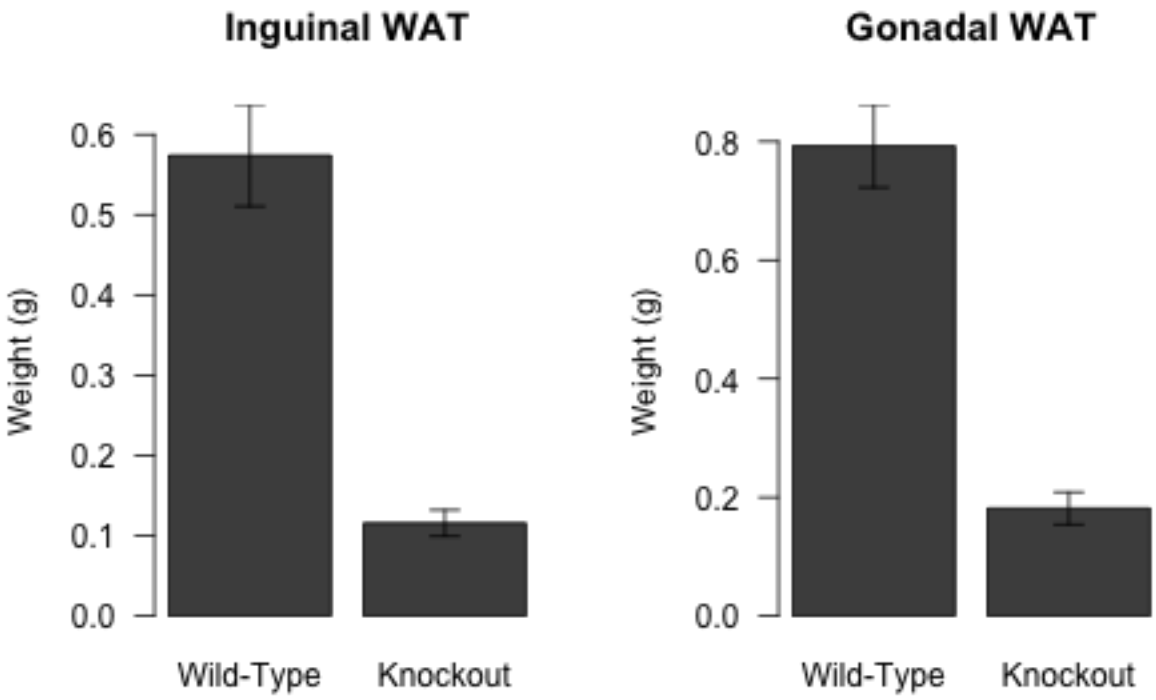
3 Analysis

Sex	GonadalWAT_mean.na	InguinalWAT_mean.na	Quadriceps_mean.na	TricepsSurae_mean.na	Heart_mea
Female	0.492	0.316	0.166	0.132	0
Female	0.101	0.076	0.142	0.121	0
Male	0.792	0.574	0.224	0.172	0
Male	0.181	0.116	0.192	0.156	0

Sex	GonadalWAT_length	InguinalWAT_length	Quadriceps_length	TricepsSurae_length	Heart_length
Female	53	53	53	53	53
Female	8	8	8	8	8
Male	25	25	25	25	25
Male	7	7	7	7	7

3.1 Fat Pad Weights





For the male mice, the fat pads were reduced in weight:

Table 3: Changes in Gonadal Fat Pad Weights

Sex	Wild-Type	Knockout	Difference	Pct.Difference
Female	0.492	0.101	0.391	79.5
Male	0.792	0.181	0.611	77.1

Table 4: Changes in Inguinal Fat Pad Weights

Sex	Wild-Type	Knockout	Difference	Pct.Difference
Female	0.316	0.076	0.240	75.9
Male	0.574	0.116	0.458	79.8

Table 5: Shapiro-Wilk Tests for each group

Sex	Knockout	InguinalWAT_shapiro.p	GonadalWAT_shapiro.p
Female	FALSE	0.000	0.000
Female	TRUE	0.703	0.975
Male	FALSE	0.400	0.172
Male	TRUE	0.856	0.319

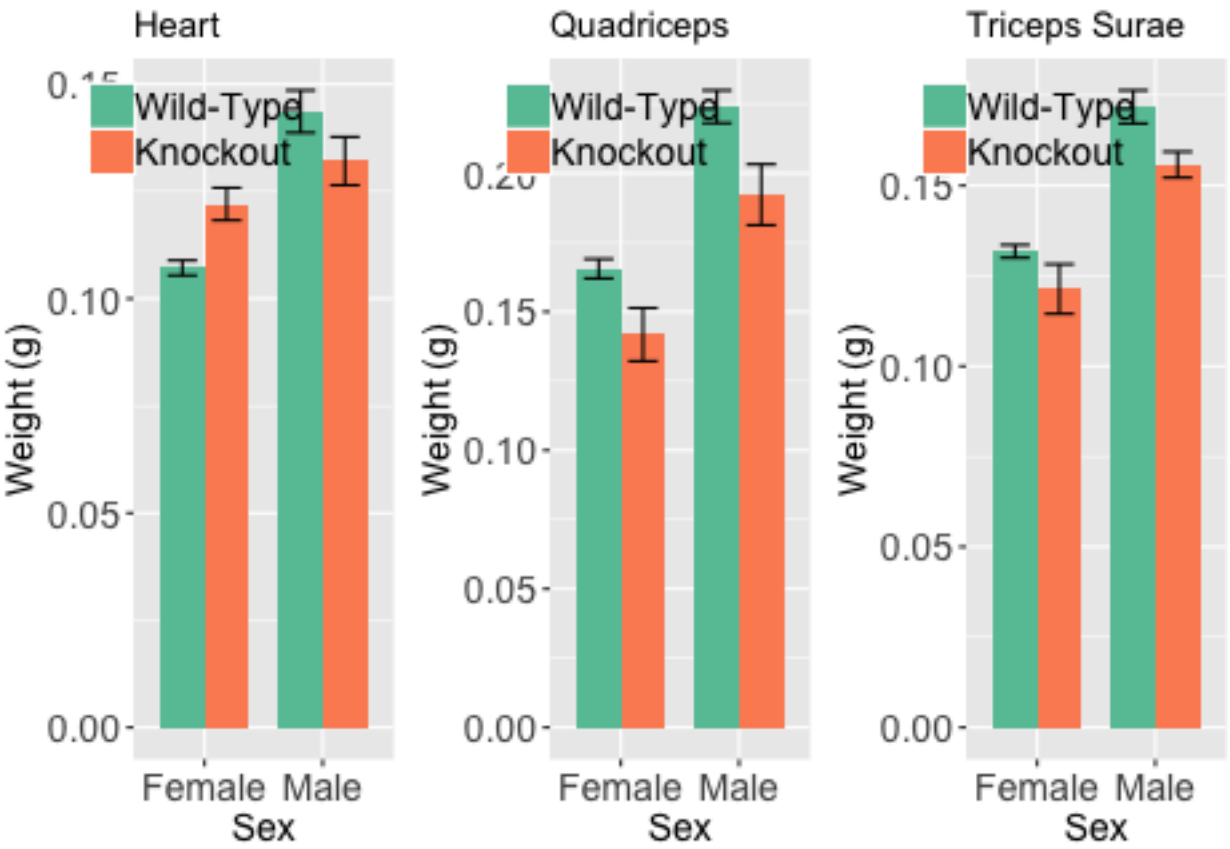


Figure 1: Weights of Muscle Depots at Sacrifice

Table 6: Pairwise tests for effects of knockout on Inguinal WAT weights.

Sex	Levene	Mann.Whitney	Welch	Student
Female	0.018	0.001	0	0.007
Male	0.008	0.000	0	0.002

Table 7: Pairwise tests for effects of knockout on Gonadal WAT weights.

Sex	Levene	Mann.Whitney	Welch	Student
Female	0.016	0	0	0.007
Male	0.009	0	0	0.000

For the male mice, normality can be assumed, but not equal variance, so a Welch's t-test is used, which had a p-value of 9.802×10^{-7} for inguinal WAT and 4.917×10^{-8} for gonadal WAT.

3.2 Muscle Weights

4 Session Information

```
sessionInfo()
```

```
## R version 3.5.0 (2018-04-23)
## Platform: x86_64-apple-darwin15.6.0 (64-bit)
## Running under: macOS  10.14.2
##
## Matrix products: default
## BLAS: /Library/Frameworks/R.framework/Versions/3.5/Resources/lib/libRblas.0.dylib
## LAPACK: /Library/Frameworks/R.framework/Versions/3.5/Resources/lib/libRlapack.dylib
##
## locale:
## [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
##  [1] car_3.0-2          carData_3.0-2      forcats_0.3.0
##  [4] gridExtra_2.3      ggplot2_3.1.0      RColorBrewer_1.1-2
##  [7] bindrcpp_0.2.2     readr_1.3.1        dplyr_0.7.8
## [10] tidyr_0.8.2        knitr_1.21
##
## loaded via a namespace (and not attached):
##  [1] zip_1.0.0          Rcpp_1.0.0         cellranger_1.1.0
##  [4] pillar_1.3.1       compiler_3.5.0     highr_0.7
##  [7] plyr_1.8.4         bindr_0.1.1        tools_3.5.0
## [10] digest_0.6.18      evaluate_0.12      tibble_2.0.0
## [13] gtable_0.2.0       pkgconfig_2.0.2    rlang_0.3.1
## [16] openxlsx_4.1.0     cli_1.0.1          curl_3.2
## [19] yaml_2.2.0         haven_2.0.0        xfun_0.4
## [22] rio_0.5.16         withr_2.1.2        stringr_1.3.1
## [25] hms_0.4.2          grid_3.5.0         tidyselect_0.2.5
## [28] data.table_1.11.8 glue_1.3.0         R6_2.3.0
## [31] fansi_0.4.0        readxl_1.2.0       foreign_0.8-71
## [34] rmarkdown_1.11     purrr_0.2.5        magrittr_1.5
## [37] scales_1.0.0       htmltools_0.3.6    abind_1.4-5
## [40] assertthat_0.2.0   colorspace_1.3-2   labeling_0.3
## [43] utf8_1.1.4         stringi_1.2.4      lazyeval_0.2.1
## [46] munsell_0.5.0      crayon_1.3.4
```