

## Supplementary materials

Genes and primer sequences used for this study are as follows:

**Fragile X mental retardation gene 1, autosomal homolog (*Fxr1*):** *Fxr1* encodes for Fragile X mental retardation syndrome-related protein 1, which is an RNA binding protein that regulates mRNA translation and is necessary for striated muscle function<sup>39,40</sup>.

Forward: GATAATACAGAATCCGATCAG

Reverse: CTGAAGGACCATGCTCTTCAATCAC

**ATPase Ca<sup>2+</sup> -transporting plasma membrane (*Atp2b1*):** *Atp2b1* encodes for plasma membrane Ca<sup>2+</sup> transporting ATPase 1 protein. This protein plays a critical role in calcium homeostasis, which is necessary for muscle contraction<sup>41</sup>.

Forward: GTGGCCAGATCTTGTGGTTT

Reverse: CATCAATAAGGGGGATGTGC

**Myotubularin-related protein 3 (*Mtmr3*):** *Mtmr3* gene is related to myotubularin phosphatase implicated in myopathy<sup>42,43</sup>.

Forward: GTTGGCTACCTGACCACCTG

Reverse: CTCGACTGGGTTCAAAGAGC

**Protein Phosphatase 3, catalytic subunit, alpha isoform (*Ppp3ca*):** *Ppp3ca* encodes for the catalytic subunit alpha of calcineurin, which is a calcium dependent serine/threonine phosphatase. Calcineurin has functions in muscle growth, adaptation, and pathology specifically regulating cell differentiation and muscle fiber specification<sup>44-47</sup>.

Forward: CTGGCGGAAACAGACTCTG

Reverse: GTGGCATCCTCTCGTTAATTCCG

**Glutathione peroxidase 8 (*Gpx8*):** *Gpx8* is involved in the anti-oxidant response <sup>48,49</sup> that is blunted under diabetic conditions contributing to oxidative stress <sup>50,51</sup>.

Forward: GAAGGACCGTGTCTCTGGAA

Reverse: ATGGCTTCAAGGGTTCTTC