Figure 1

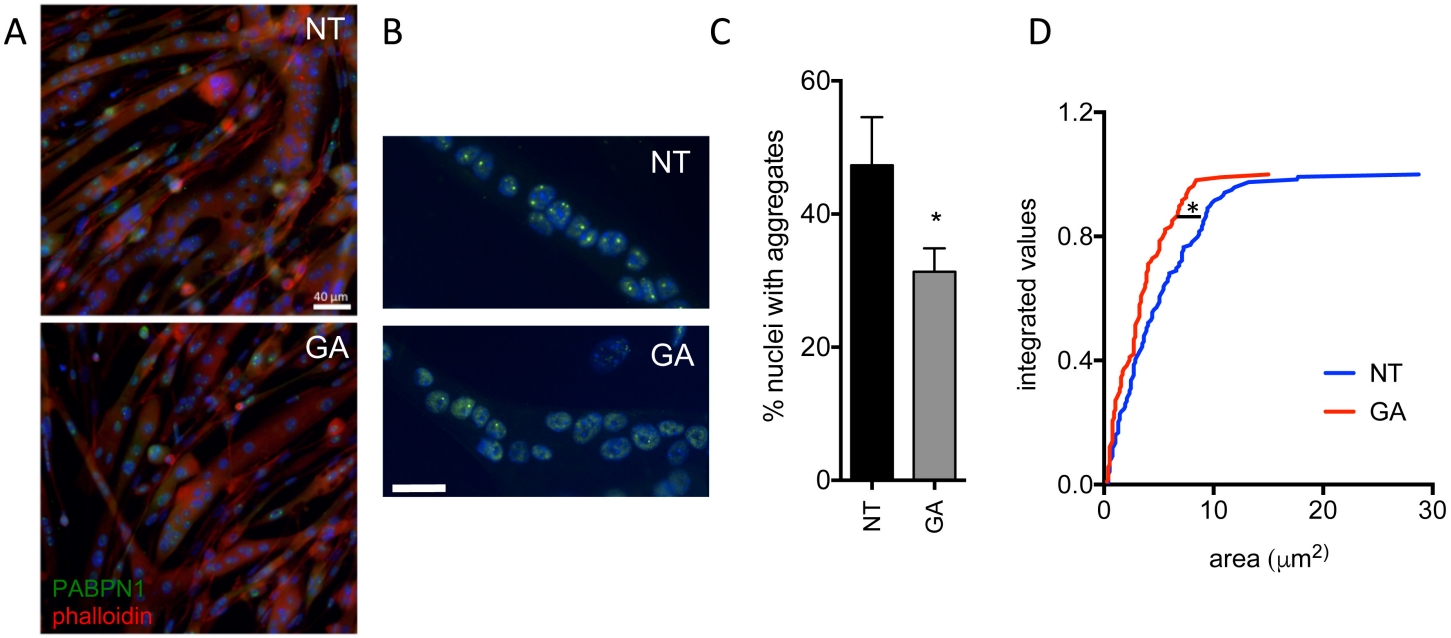

A
NT
40 µm
GA
PABPN1
phalloidin
B
NT
GA
C
% nuclei with aggregates
60
40
20
0
*
NT
GA
D
integrated values
1.2
0.8
0.4
0.0
*
NT
GA
0
10
20
30
area (µm2)

Figure 2

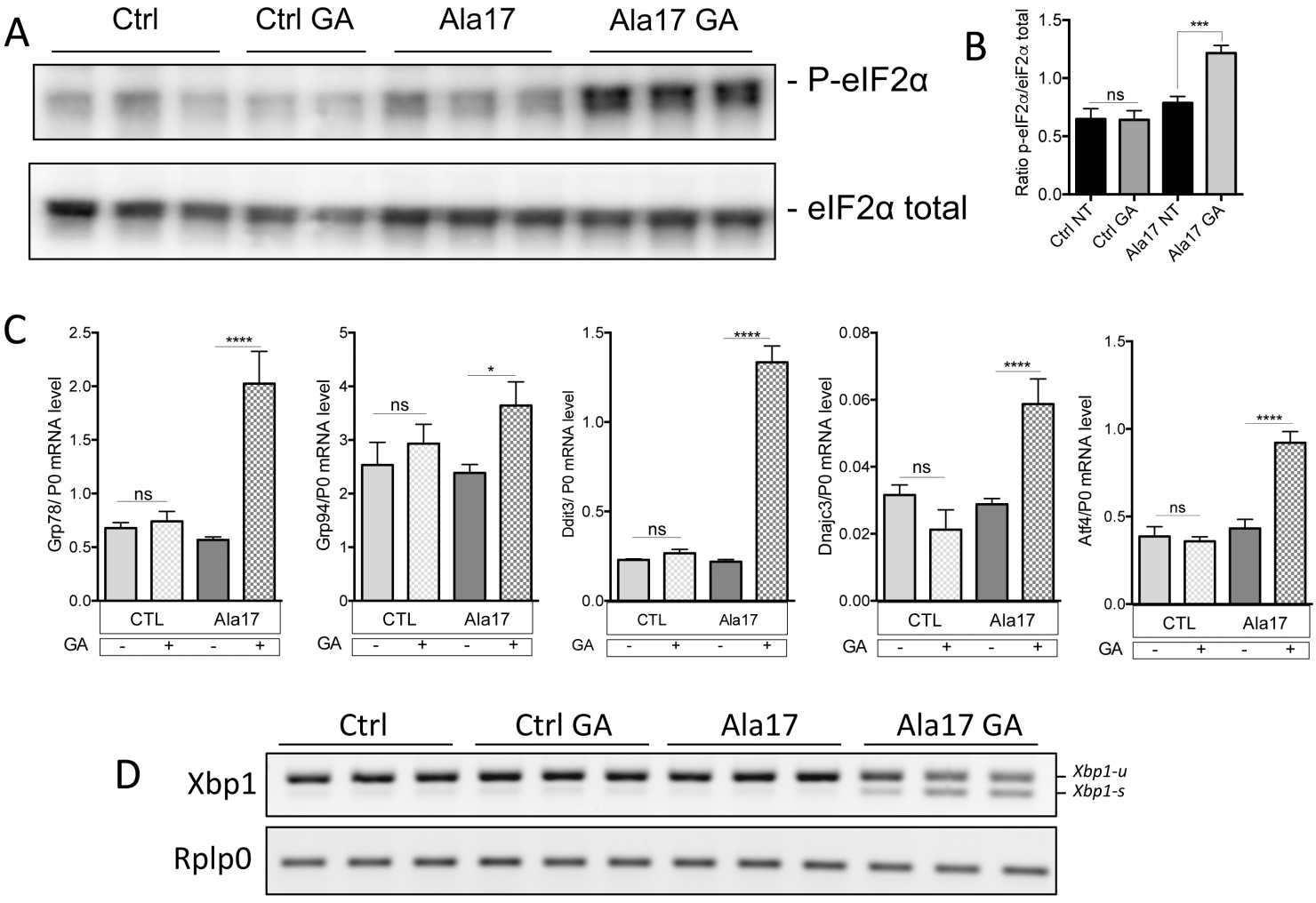

A
Ctrl
Ctrl GA
Ala17
Ala17 GA
- P-eIF2α
- eIF2α total
B
Ratio p-eIF2α/eIF2α total
ns
***
Ctrl NT
Ctrl GA
Ala17 NT
Ala17 GA
C
Grp78/ P0 mRNA level
Grp94/P0 mRNA level
Ddit3/ P0 mRNA level
Dnajc3/P0 mRNA level
Atf4/P0 mRNA level
ns
*
****
CTL
Ala17
GA
D
Ctrl
Ctrl GA
Ala17
Ala17 GA
Xbp1
Rplp0
Xbp1-u
Xbp1-s

Figure 3

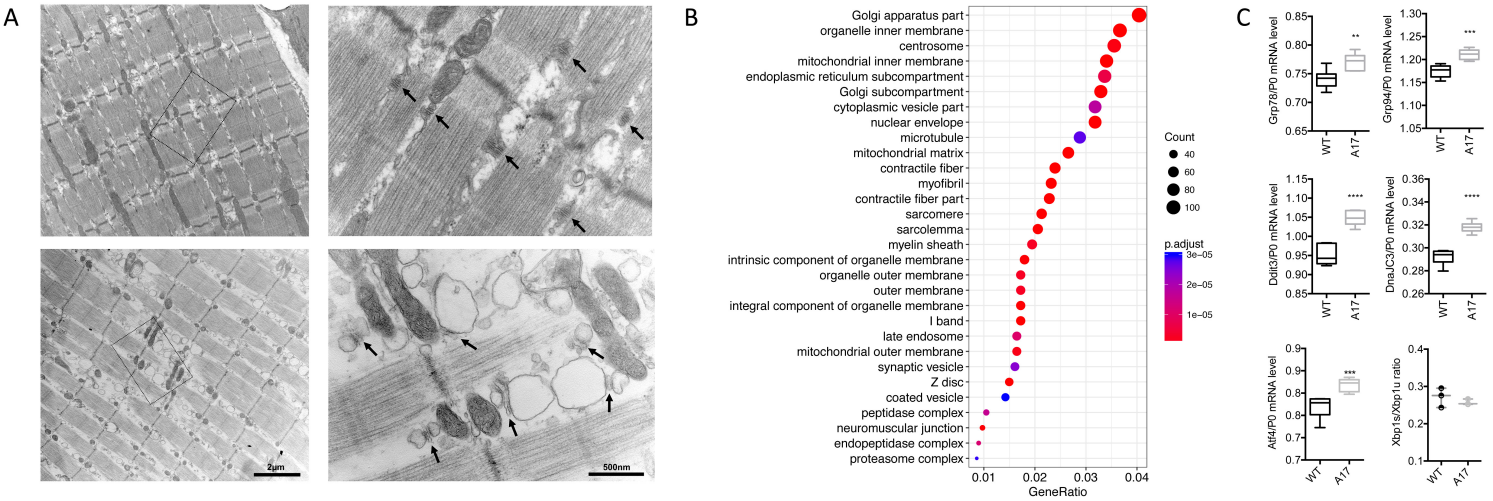

A
2μm
500nm
B
Golgi apparatus part
organelle inner membrane
centrosome
mitochondrial inner membrane
endoplasmic reticulum subcompartment
Golgi subcompartment
cytoplasmic vesicle part
nuclear envelope
microtubule
mitochondrial matrix
contractile fiber
myofibril
contractile fiber part
sarcomere
sarcolemma
myelin sheath
intrinsic component of organelle membrane
organelle outer membrane
outer membrane
integral component of organelle membrane
I band
late endosome
mitochondrial outer membrane
synaptic vesicle
Z disc
coated vesicle
peptidase complex
neuromuscular junction
endopeptidase complex
proteasome complex
0.01
0.02
0.03
0.04
GeneRatio
Count
40
60
80
100
p.adjust
3e−05
2e−05
1e−05
C
Grp78/P0 mRNA level
Grp94/P0 mRNA level
Ddit3/P0 mRNA level
DnaJC3/P0 mRNA level
Atf4/P0 mRNA level
Xbp1s/Xbp1u ratio
WT
A17

Figure 4

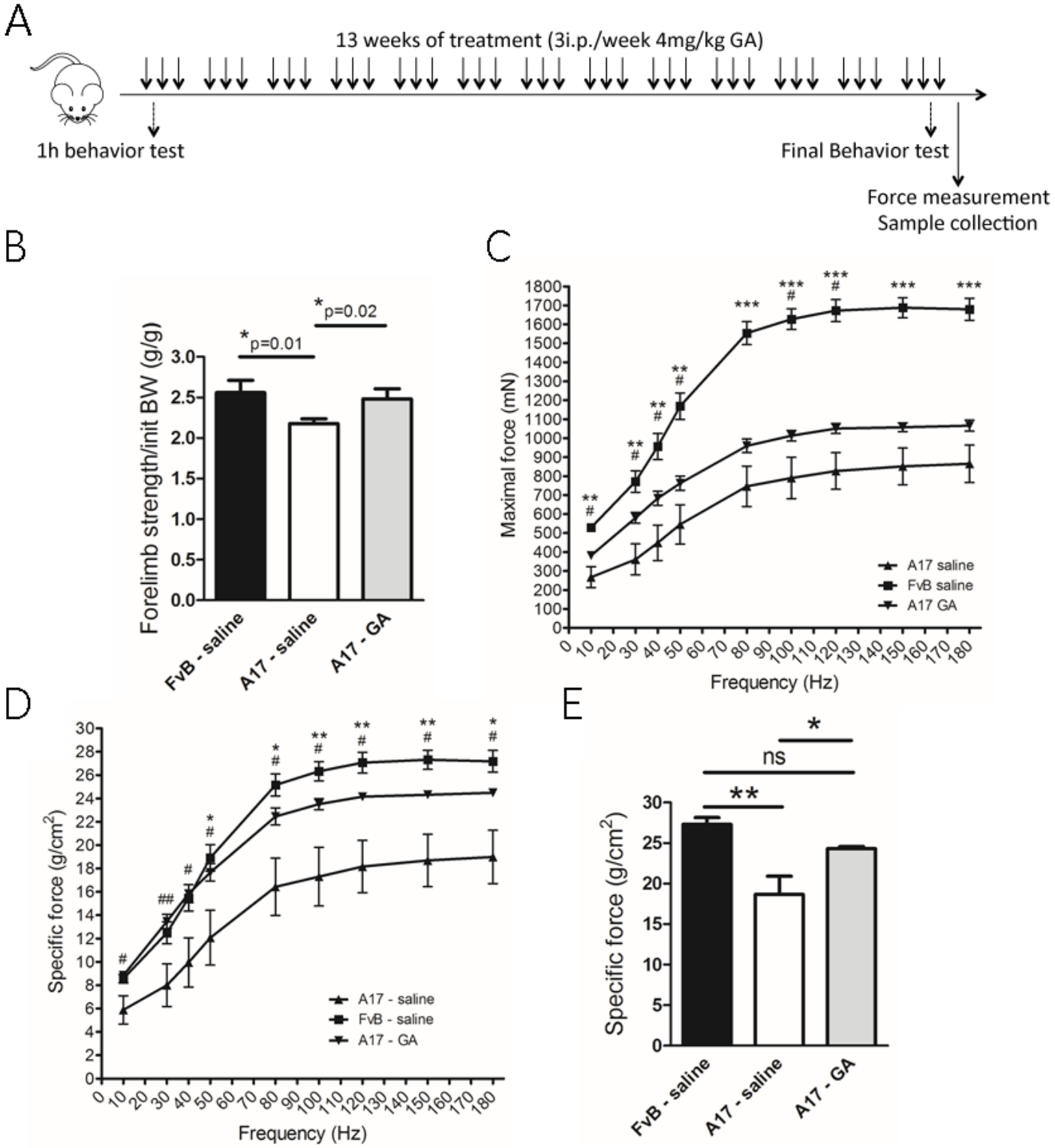

A
13 weeks of treatment (3i.p./week 4mg/kg GA)
1h behavior test
Final Behavior test
Force measurement
Sample collection
B
Forelimb strength/init BW (g/g)
*p=0.01
*p=0.02
FvB - saline
A17 - saline
A17 - GA
C
Maximal force (mN)
Frequency (Hz)
A17 saline
FvB saline
A17 GA
D
Specific force (g/cm2)
Frequency (Hz)
A17 - saline
FvB - saline
A17 - GA
E
Specific force (g/cm2)
ns
FvB - saline
A17 - saline
A17 - GA

Figure 5

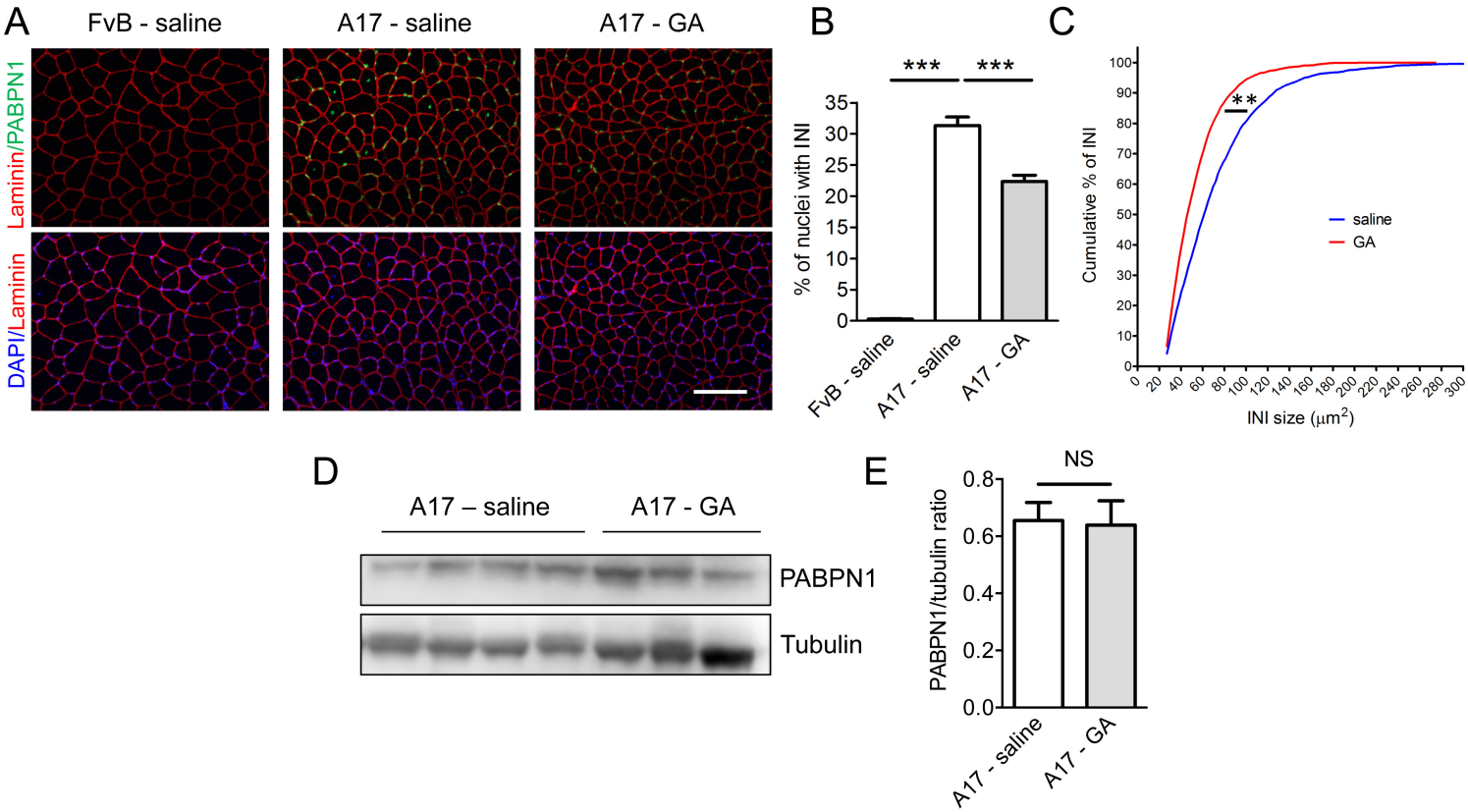

A
FvB - saline
A17 - saline
A17 - GA
Laminin/PABPN1
DAPI/Laminin
B
***
***
% of nuclei with INI
35
30
25
20
15
10
5
0
FvB - saline
A17 - saline
A17 - GA
C
**
Cumulative % of INI
100
90
80
70
60
50
40
30
20
10
0
saline
GA
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
INI size (μm2)
D
A17 – saline
A17 - GA
PABPN1
Tubulin
E
NS
PABPN1/tubulin ratio
0.8
0.6
0.4
0.2
0.0
A17 - saline
A17 - GA

Figure 6

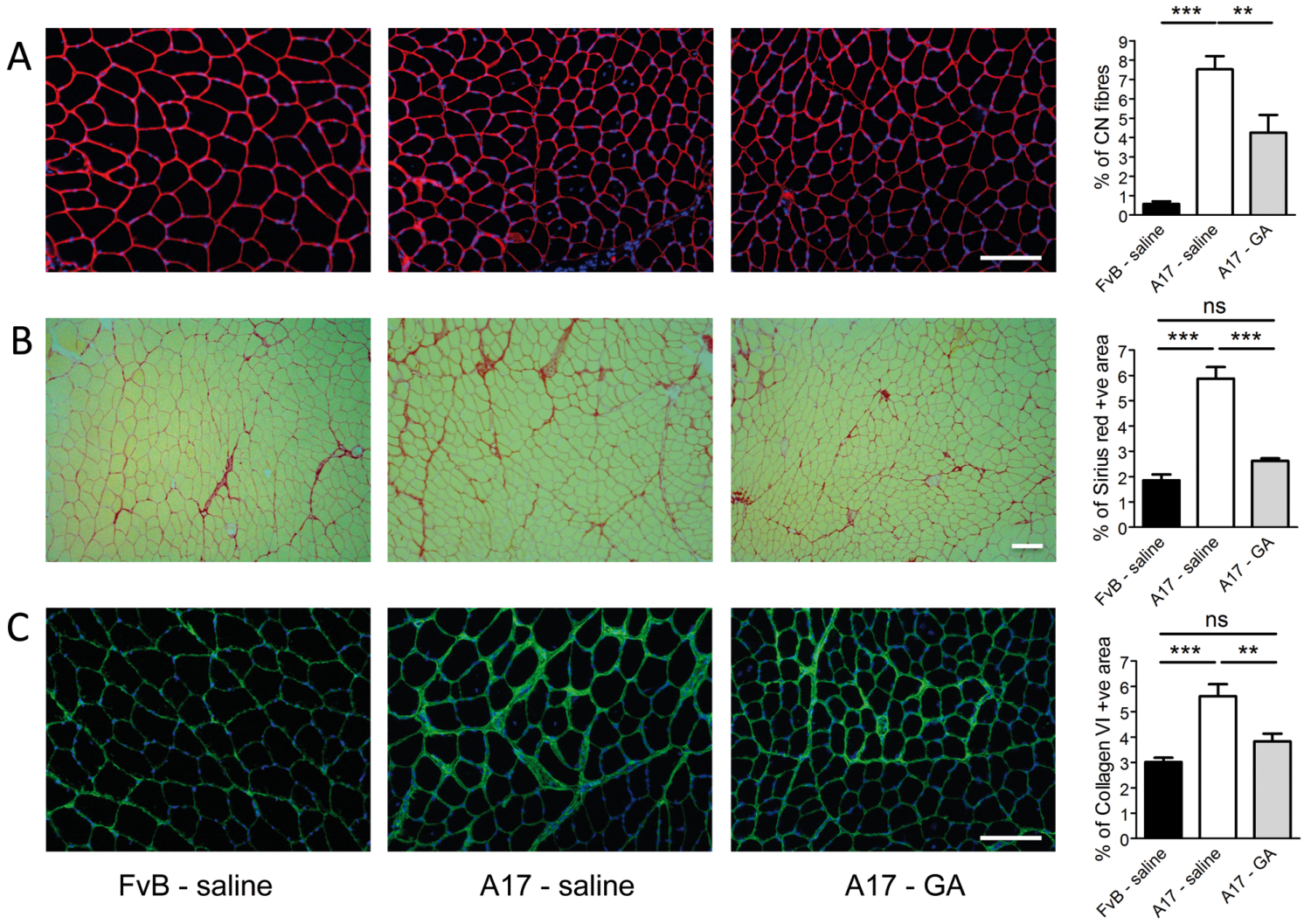
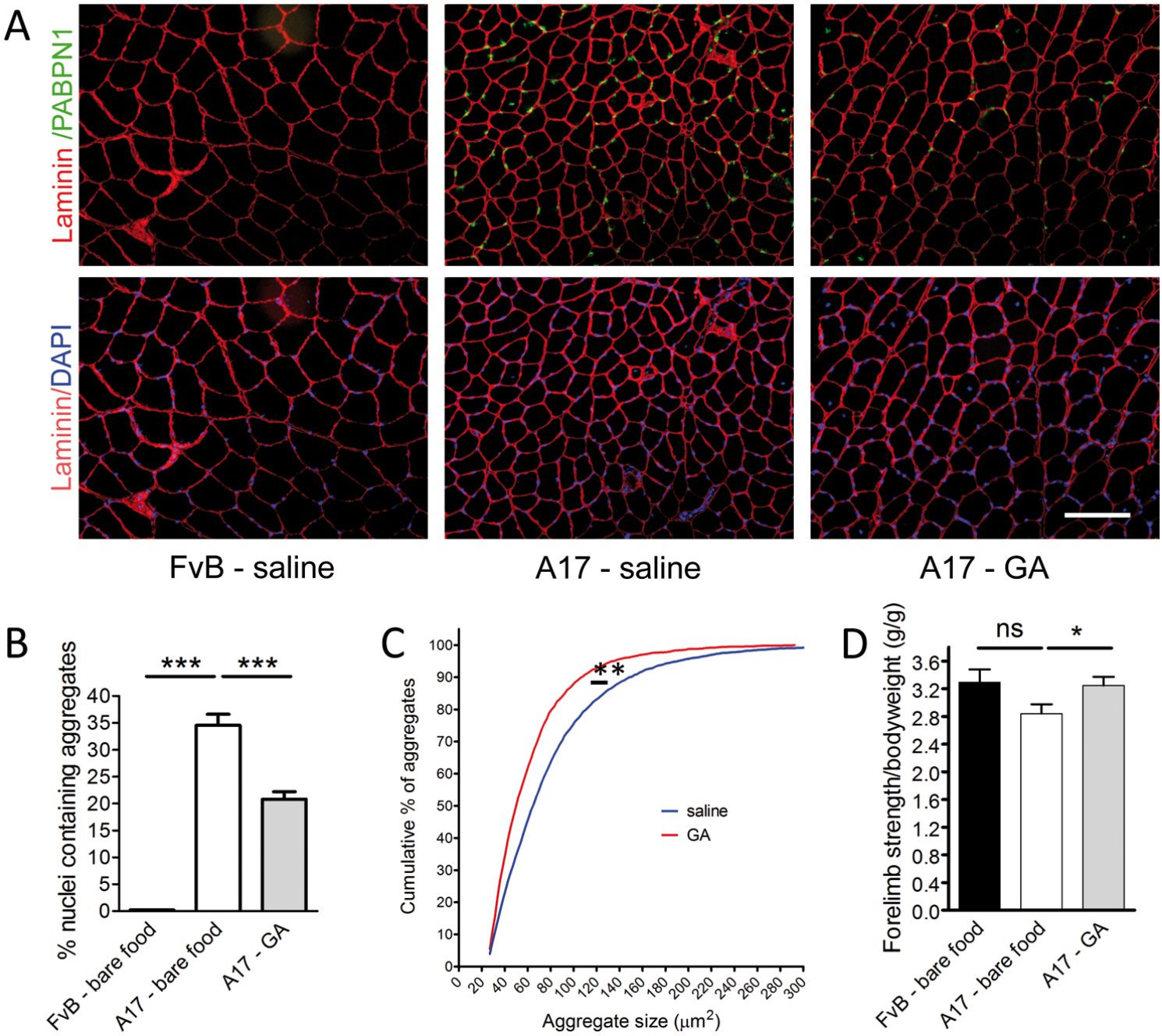

A
B
C
FvB - saline
A17 - saline
A17 - GA
% of CN fibres
% of Sirius red +ve area
% of Collagen VI +ve area
***
**
ns
FvB - saline
A17 - saline
A17 - GA

Figure 7


A
Laminin /PABPN1
Laminin/DAPI
FvB - saline
A17 - saline
A17 - GA
B
% nuclei containing aggregates
***
***
FvB - bare food
A17 - bare food
A17 - GA
C
Cumulative % of aggregates
**
saline
GA
Aggregate size (μm²)
D
Forelimb strength/bodyweight (g/g)
ns
*
FvB - bare food
A17 - bare food
A17 - GA