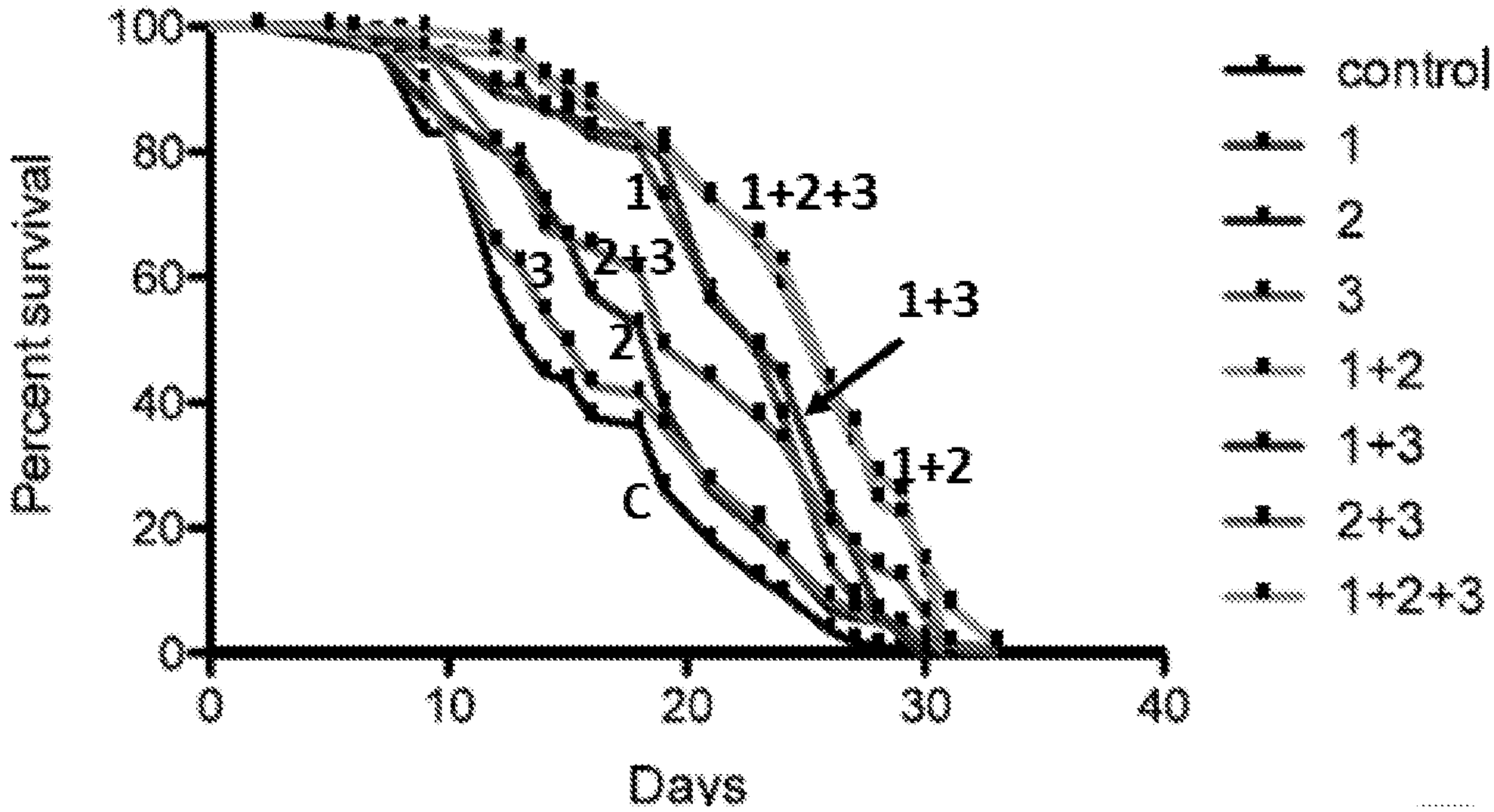

Percent survival
100
80
60
40
20
0
0
10
20
30
40
Days
control
1
2
3
1+2
1+3
2+3
1+2+3
1+2+3
1+3
2+3
1+2
C

Fig. 1

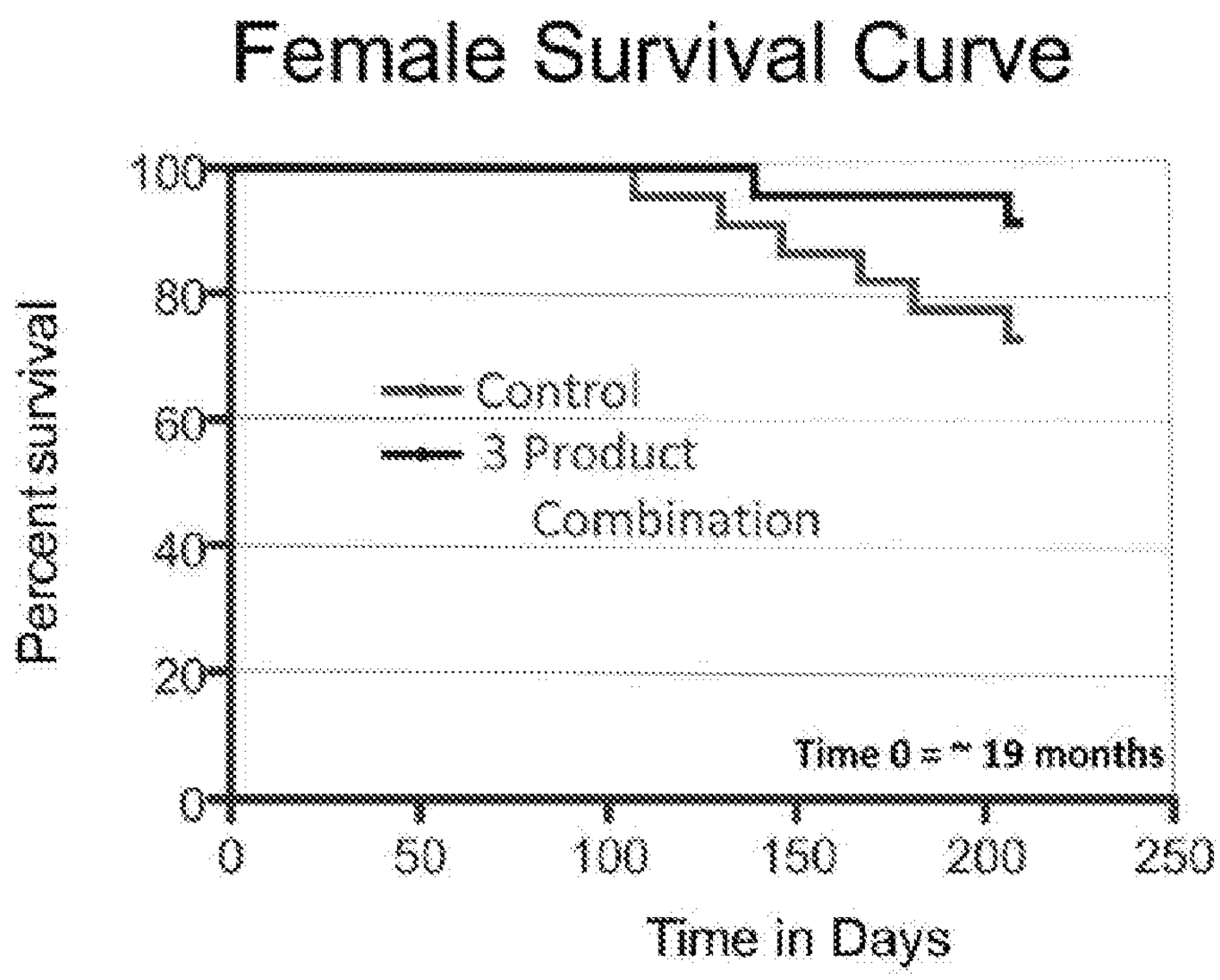

Female Survival Curve
Percent survival
100
80
60
40
20
0
0
50
100
150
200
250
Time in Days
Control
3 Product
Combination
Time 0 = ~ 19 months

Fig. 2

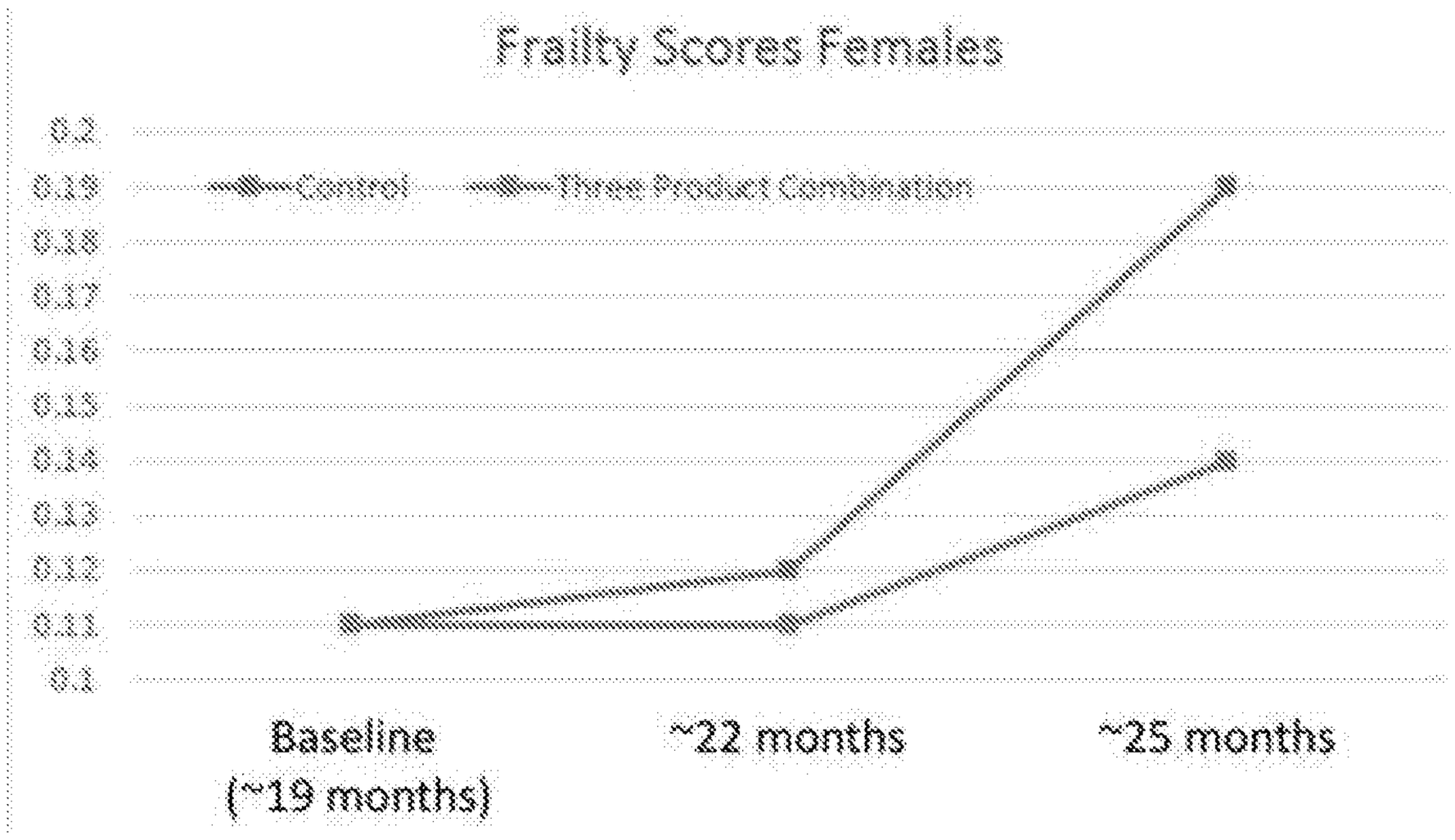

Frailty Scores Females
0.2
0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
Control
Three Product Combination
Baseline
(~19 months)
~22 months
~25 months

Fig. 3

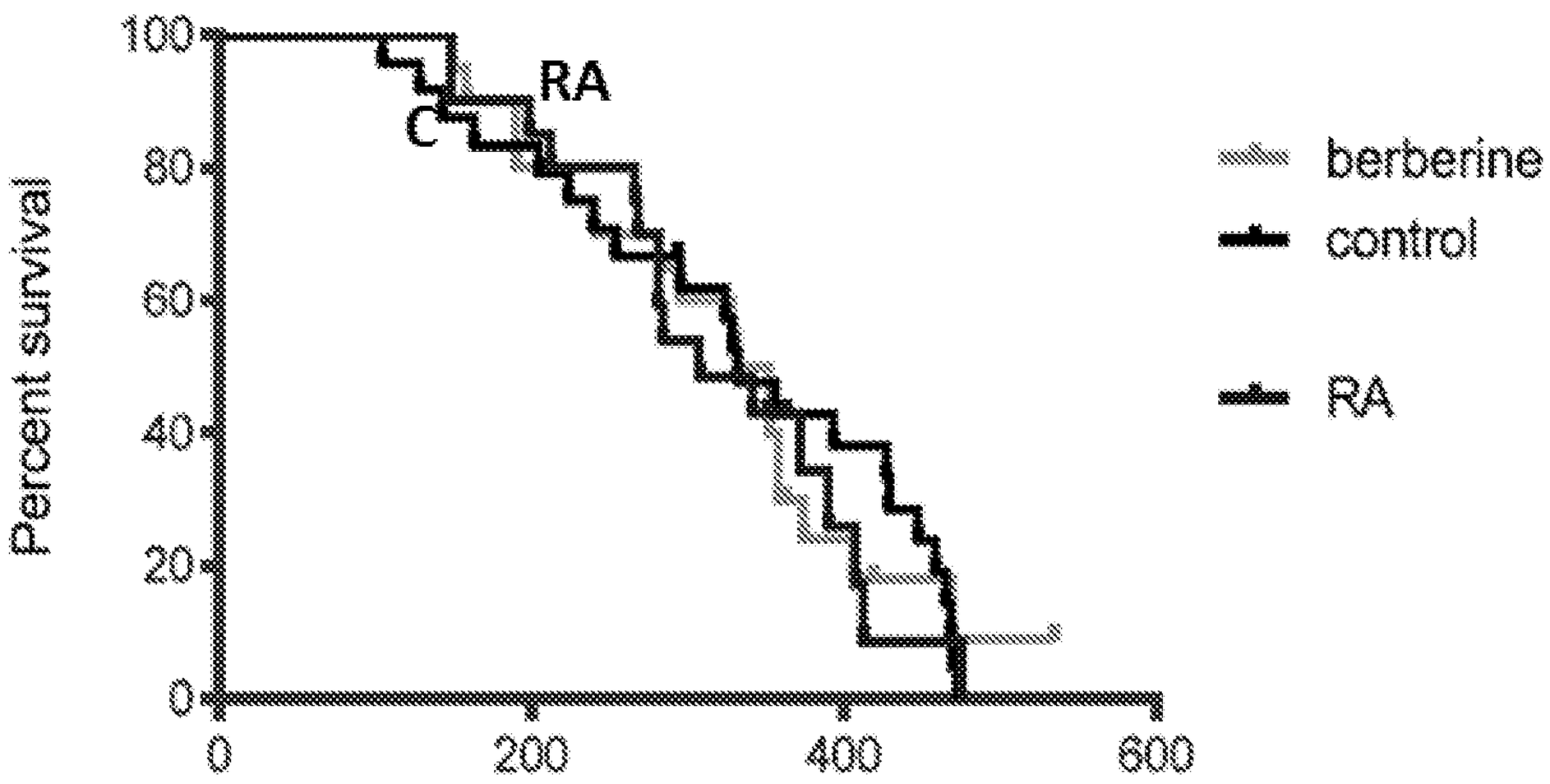

Survival of Female lifespan exp start feb 12 2018
Percent survival
100
80
60
40
20
0
RA
C
berberine
control
RA
0
200
400
600
Time

Fig. 4

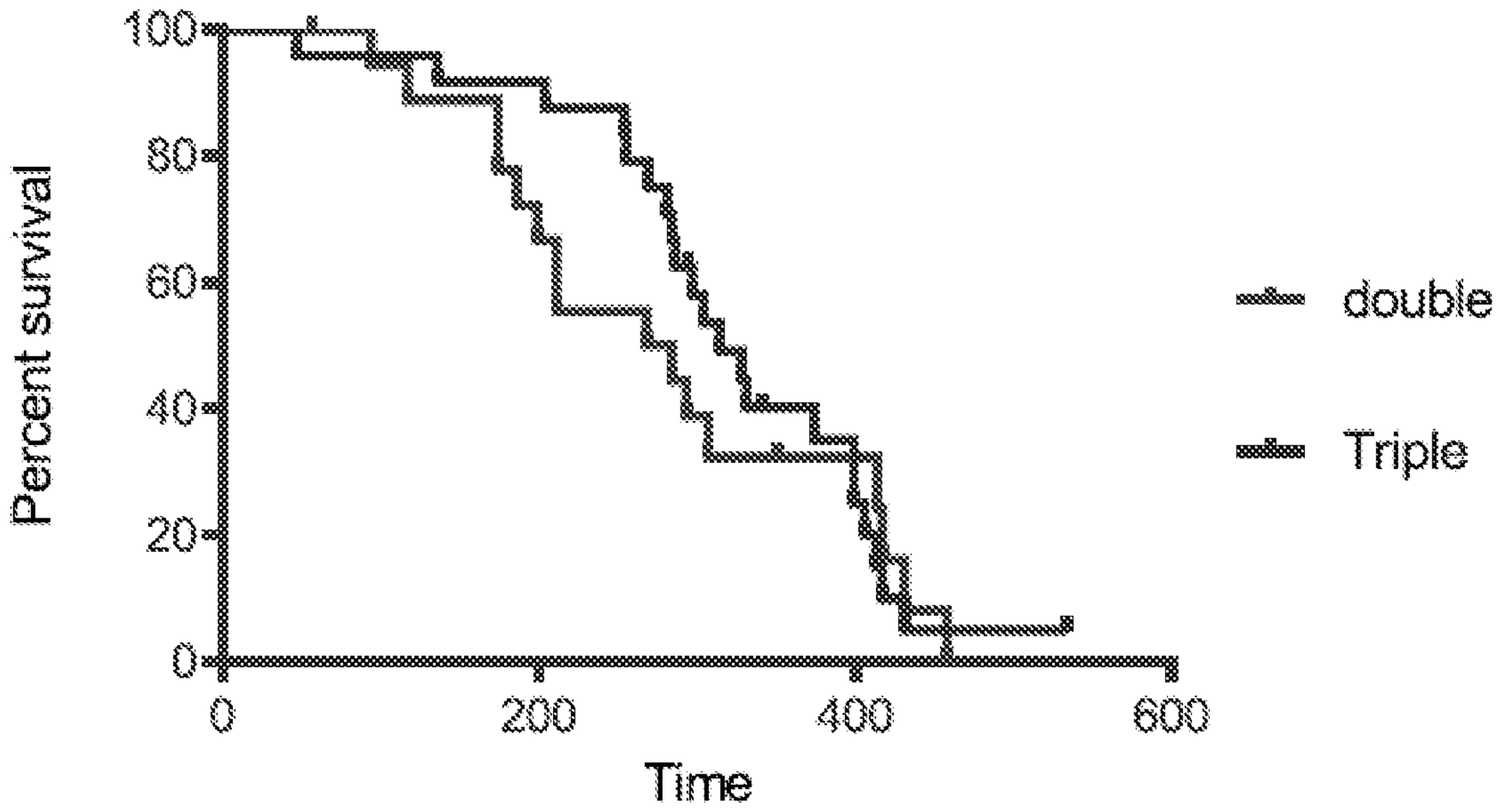

Percent survival
100
80
60
40
20
0
0
200
400
600
Time
double
Triple

Fig. 5

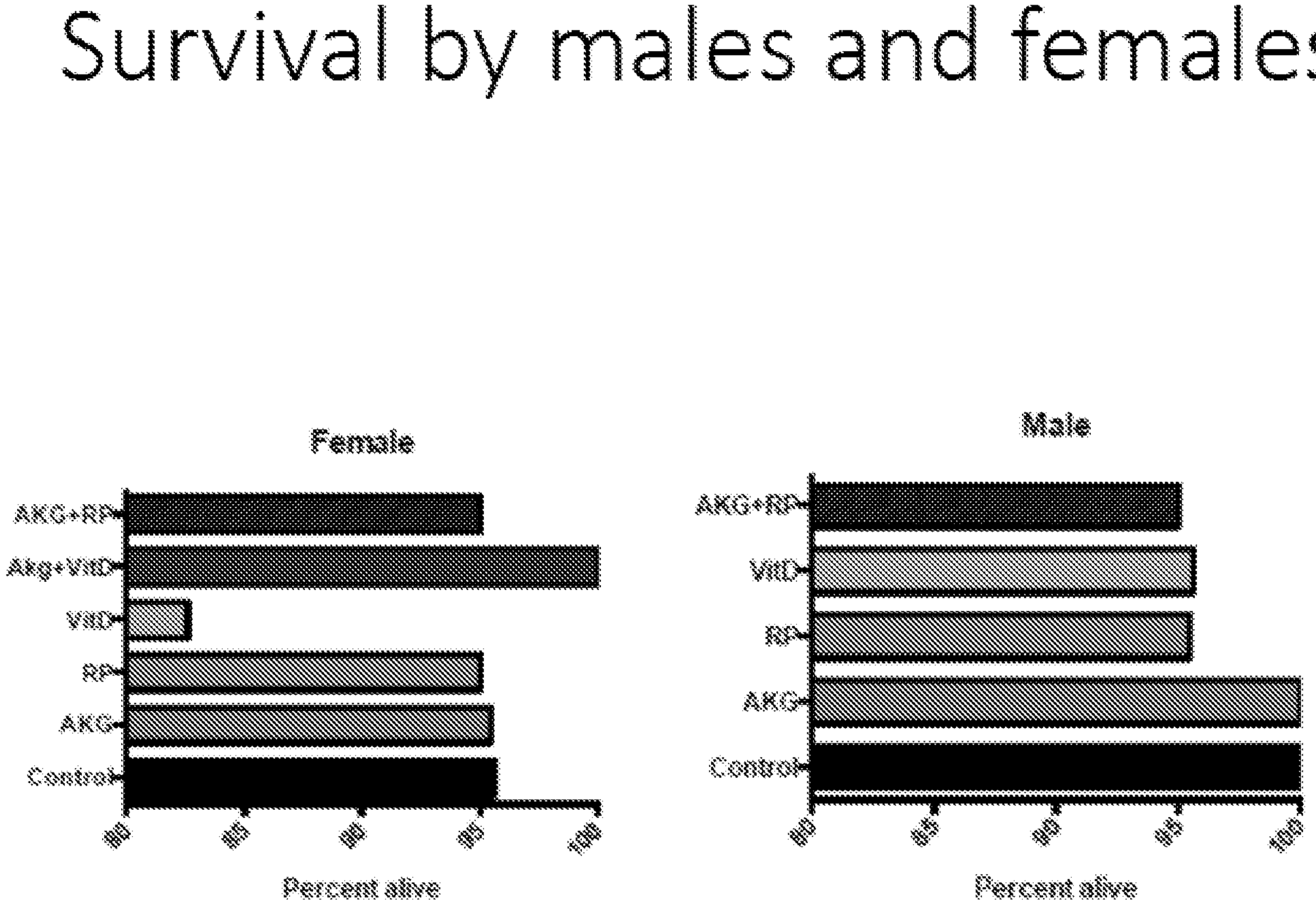

Survival by males and females
Female
AKG+RP
Akg+VitD
VitD
RP
AKG
Control
0
25
50
75
100
Percent alive
Male
AKG+RP
VitD
RP
AKG
Control
0
25
50
75
100
Percent alive

Fig. 6

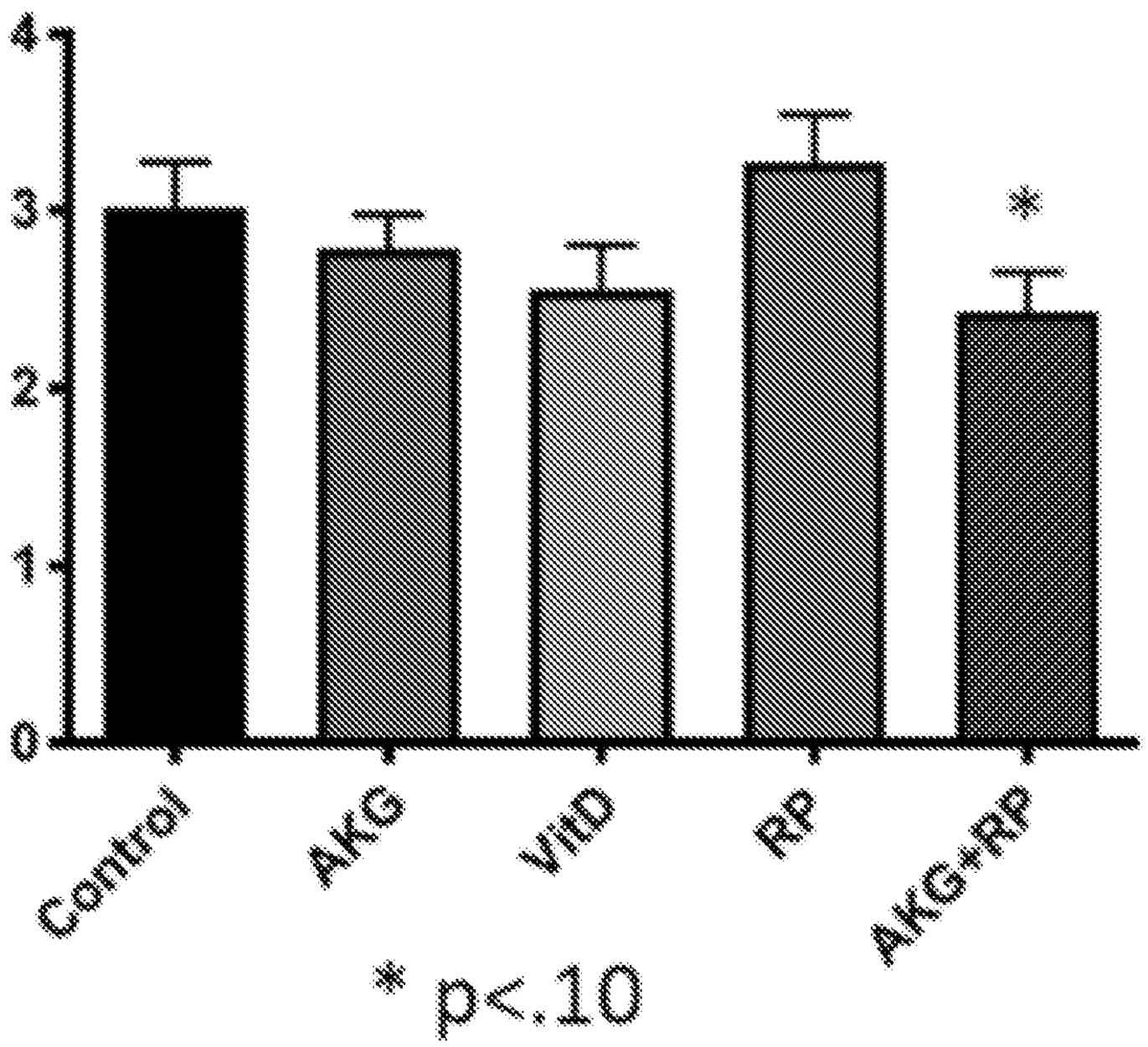
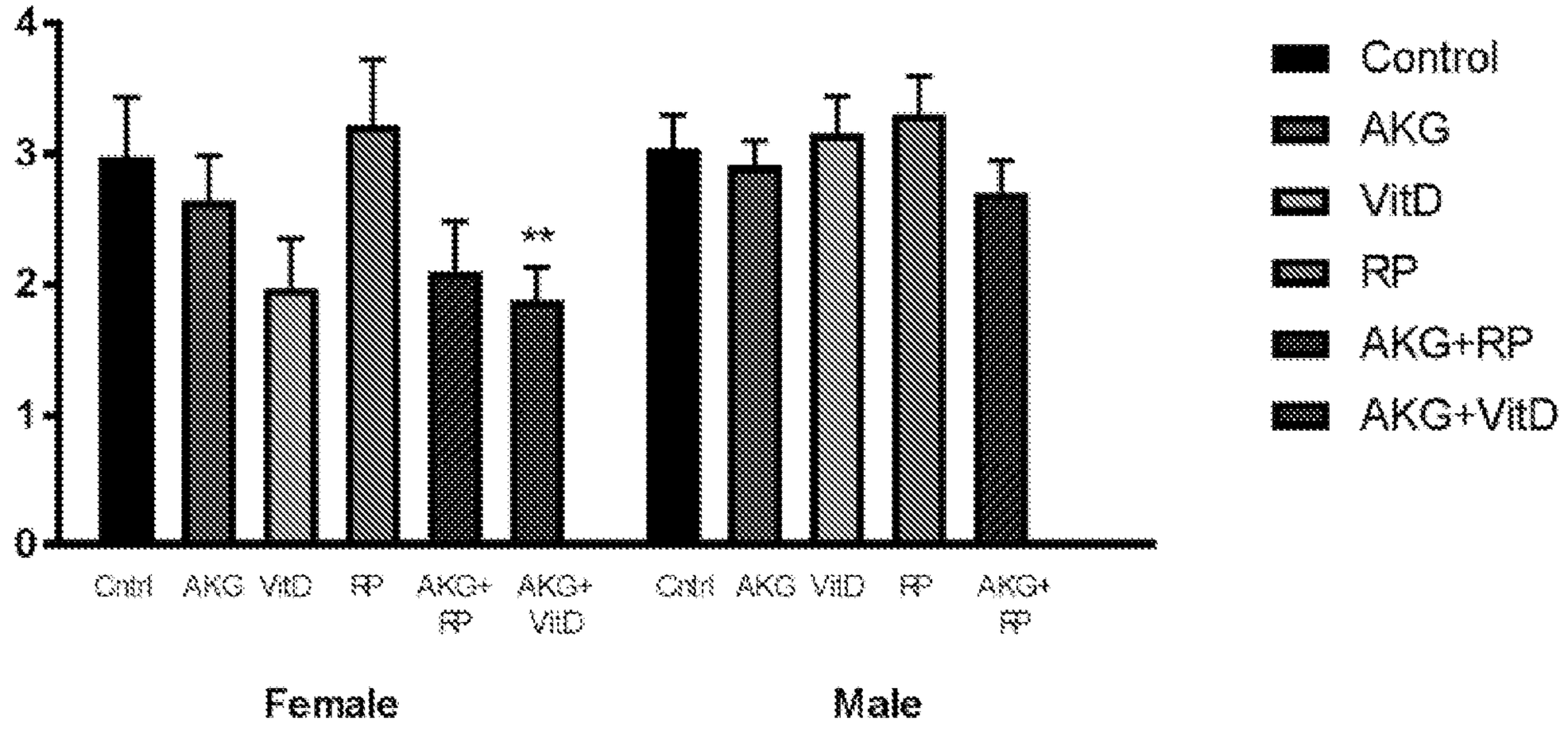
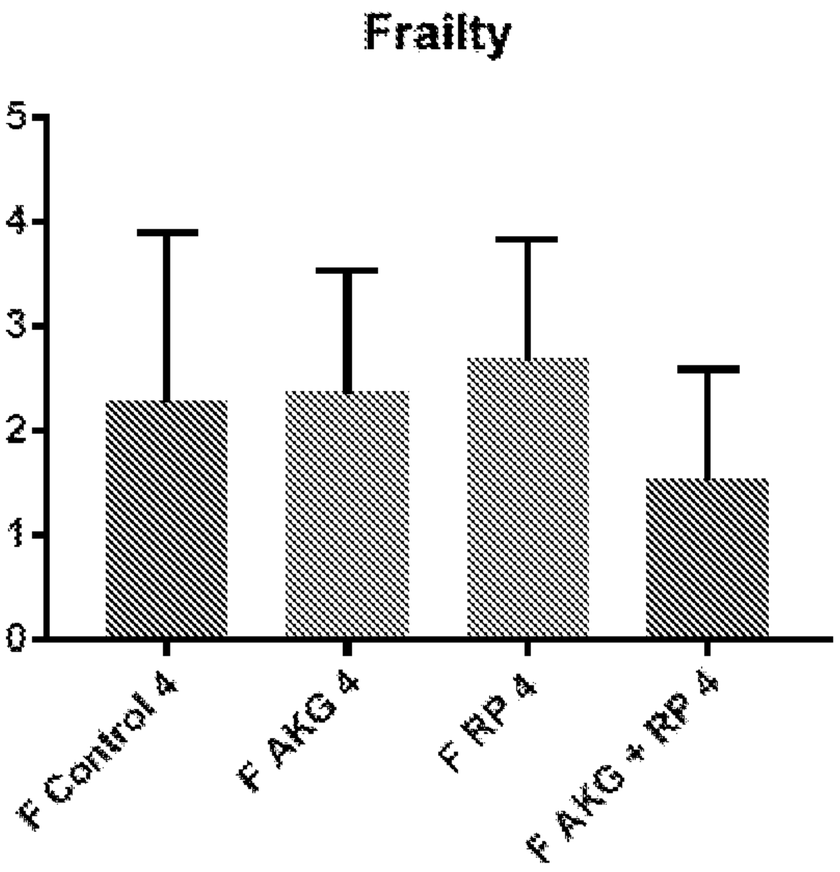

Frailty Index 2 months on treatment
Combined (Male+Female)
4
3
2
1
0
*
*
Control
AKG
VitD
RP
AKG+RP
* p<.10

Fig. 7



** p<.05

Fig. 8



P-value Matrix 4 month treatment females

_____ _____	Control	AKG	RP	AKG + RP
Control				
AKG	.85			
RP	.36	.38		
AKG + RP	.10	.03	.003	

Fig. 9

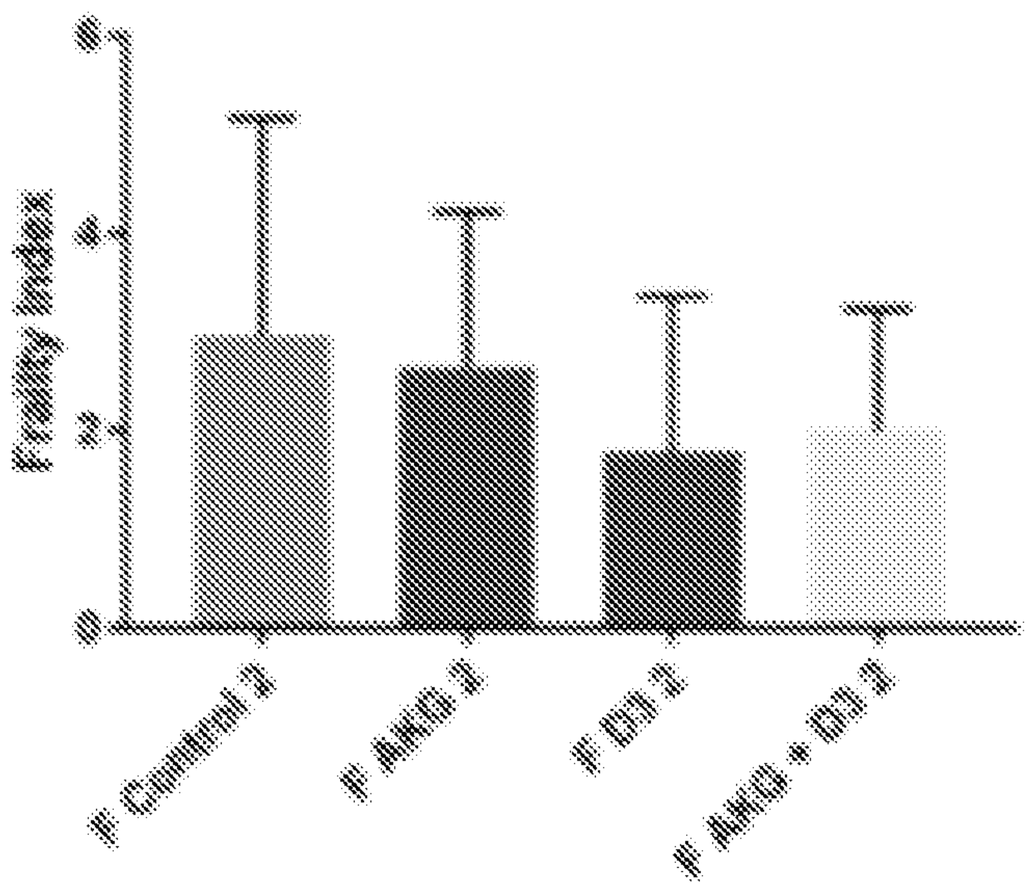


Fig. 10A

_____ _____	Control	AKG	D3	AKG + D3
Control				
AKG	.56			
D3	.04	.08		
AKG + D3	.10	.18	.64	

Fig. 10B

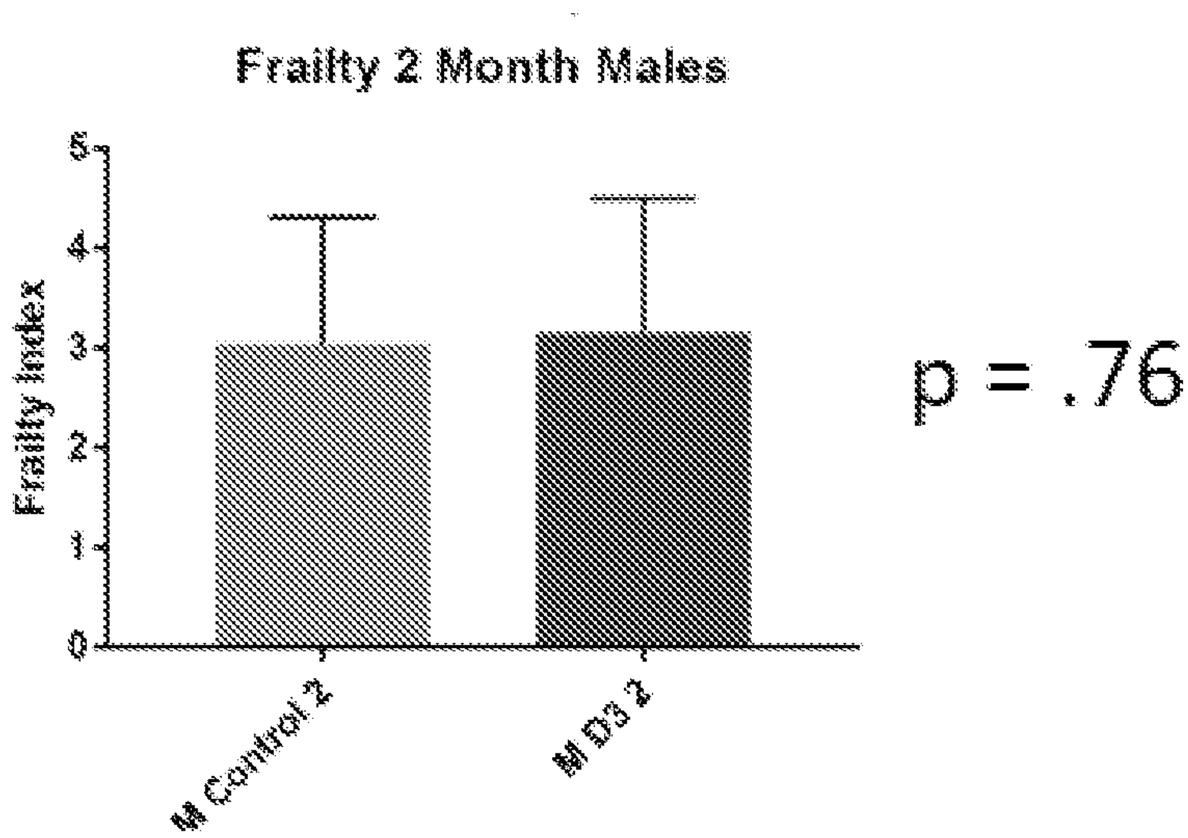


Fig. 10C

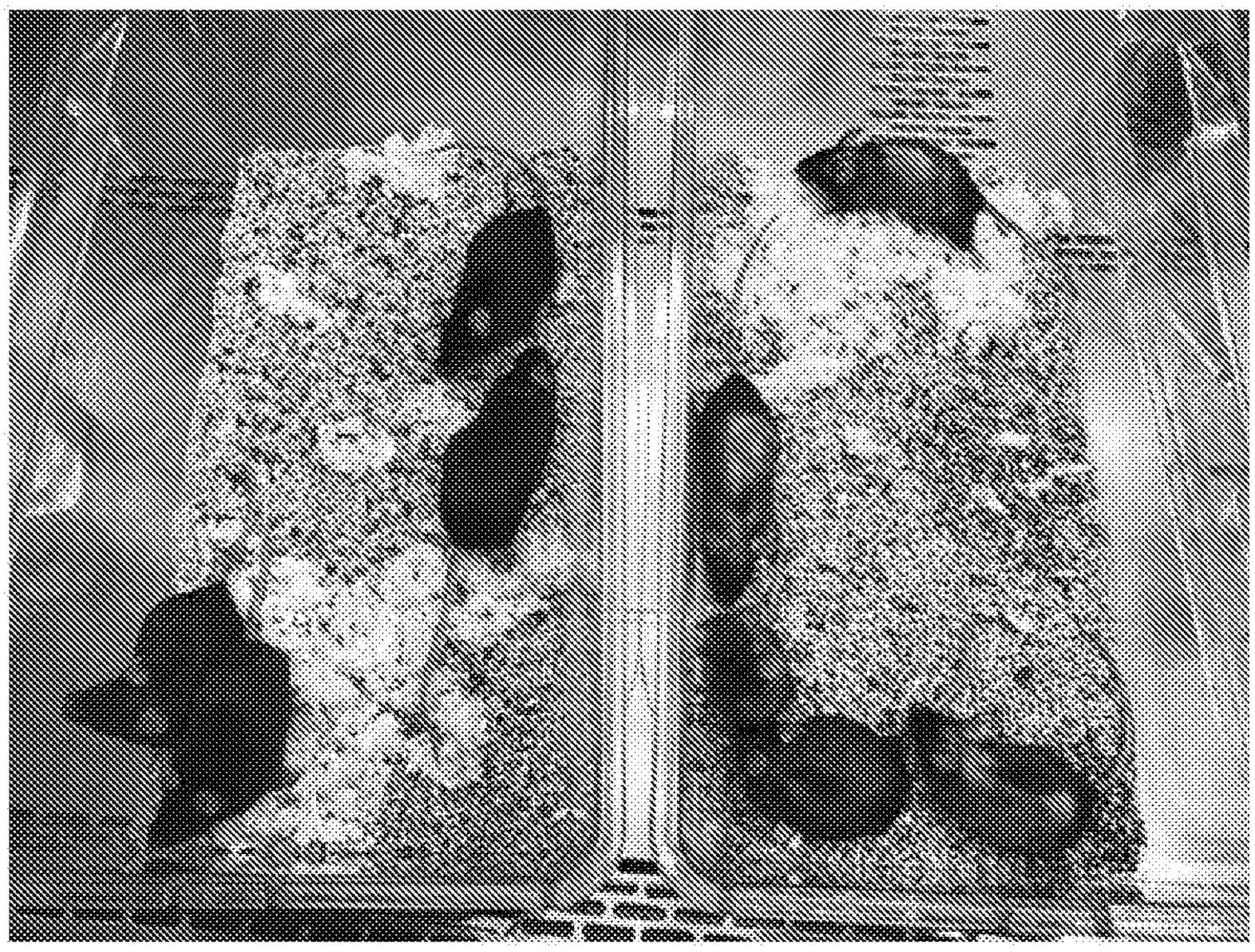


Fig. 11A

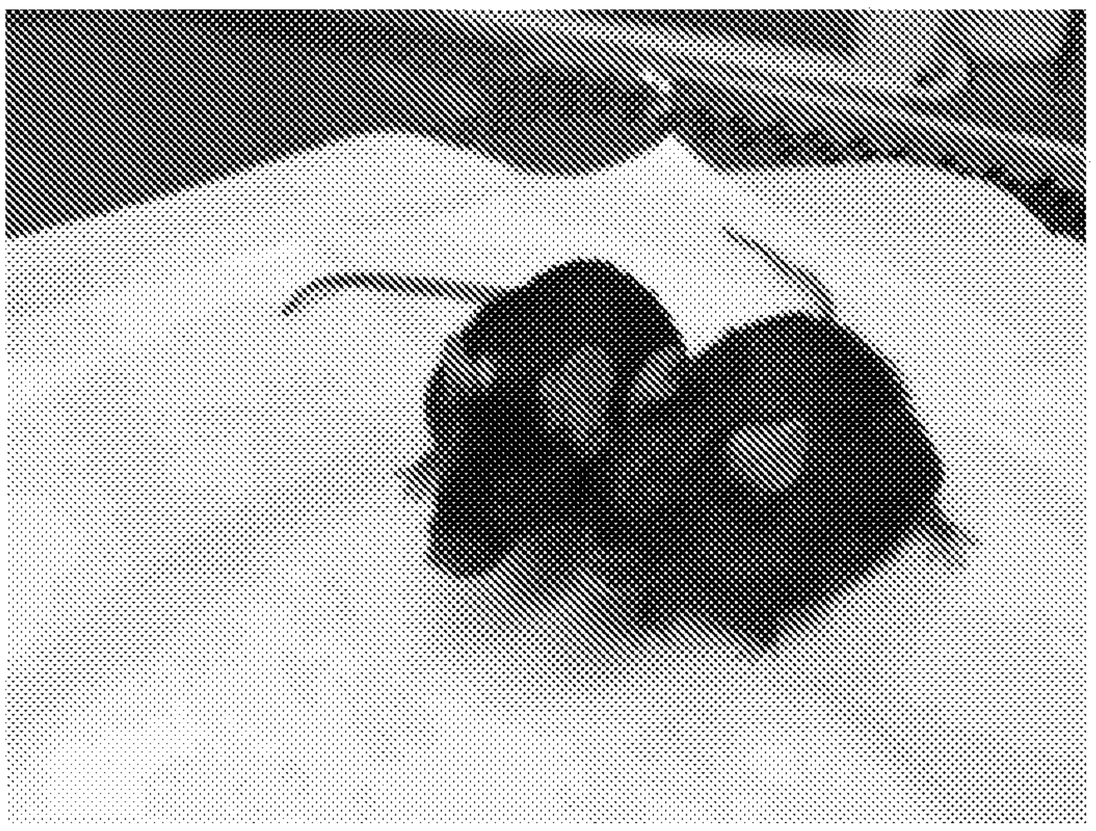


Fig. 11B

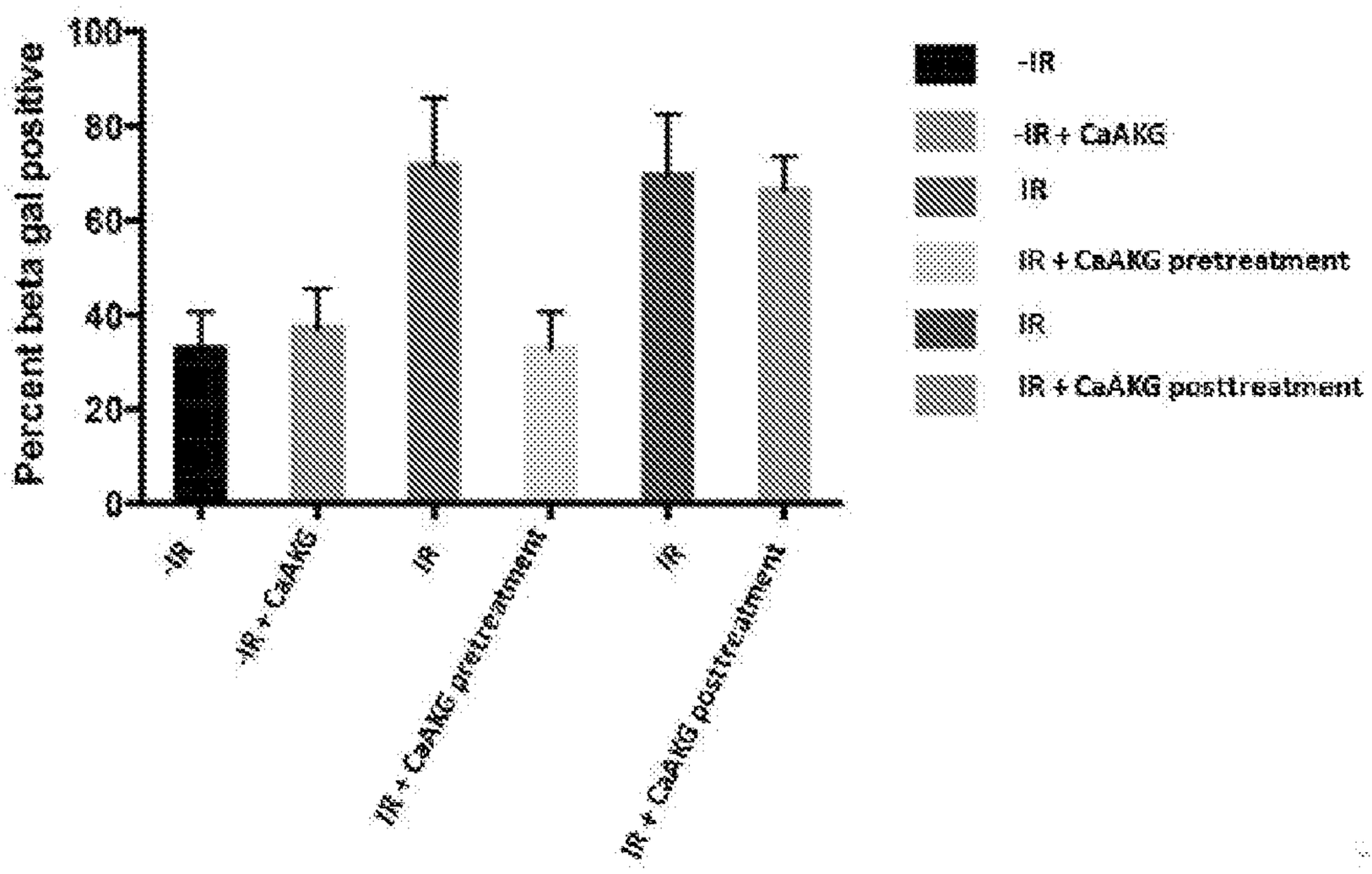

Percent beta gal positive
100
80
60
40
20
0
-IR
-IR + CaAKG
IR
IR + CaAKG pretreatment
IR
IR + CaAKG posttreatment

Fig. 12

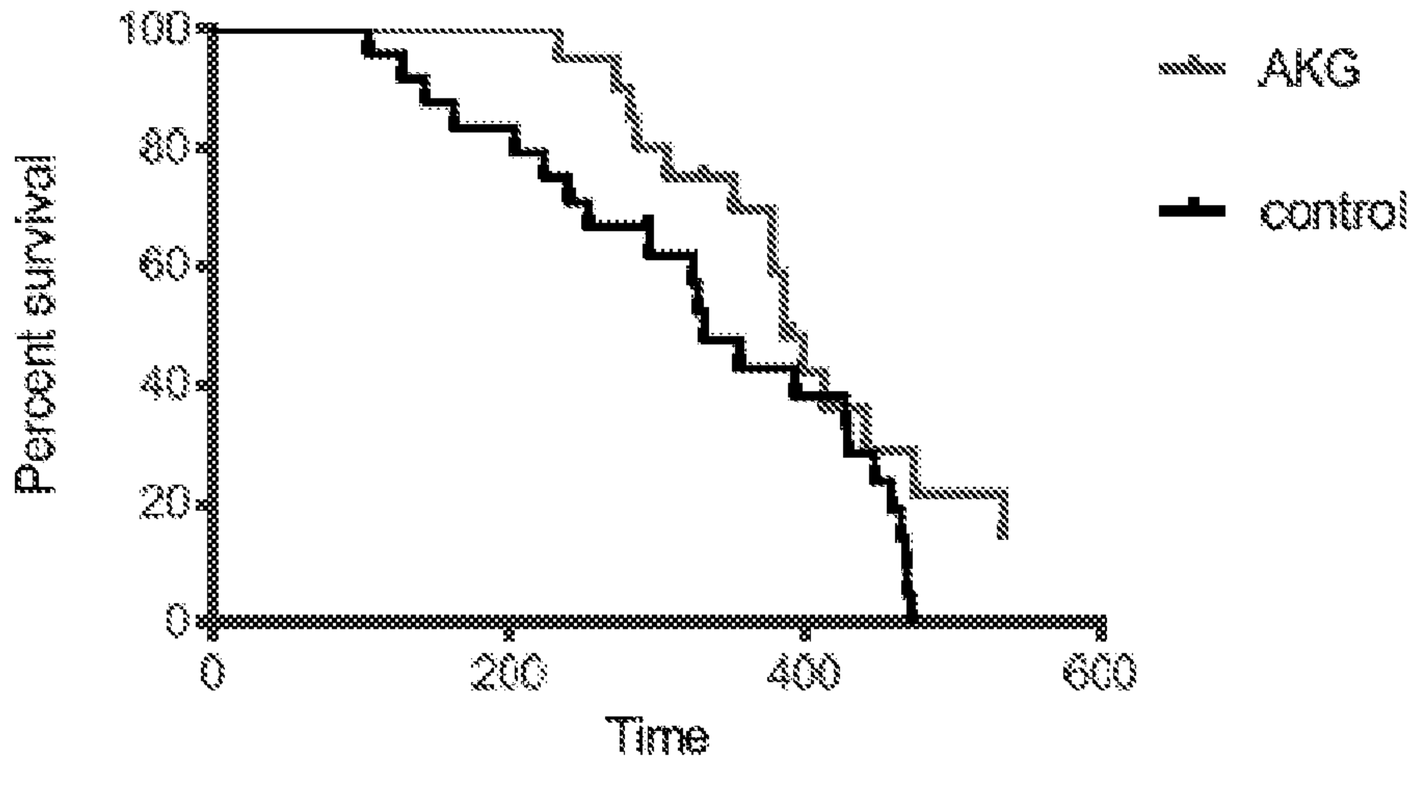

Percent survival
100
80
60
40
20
0
0
200
400
600
Time
AKG
control

Fig. 13

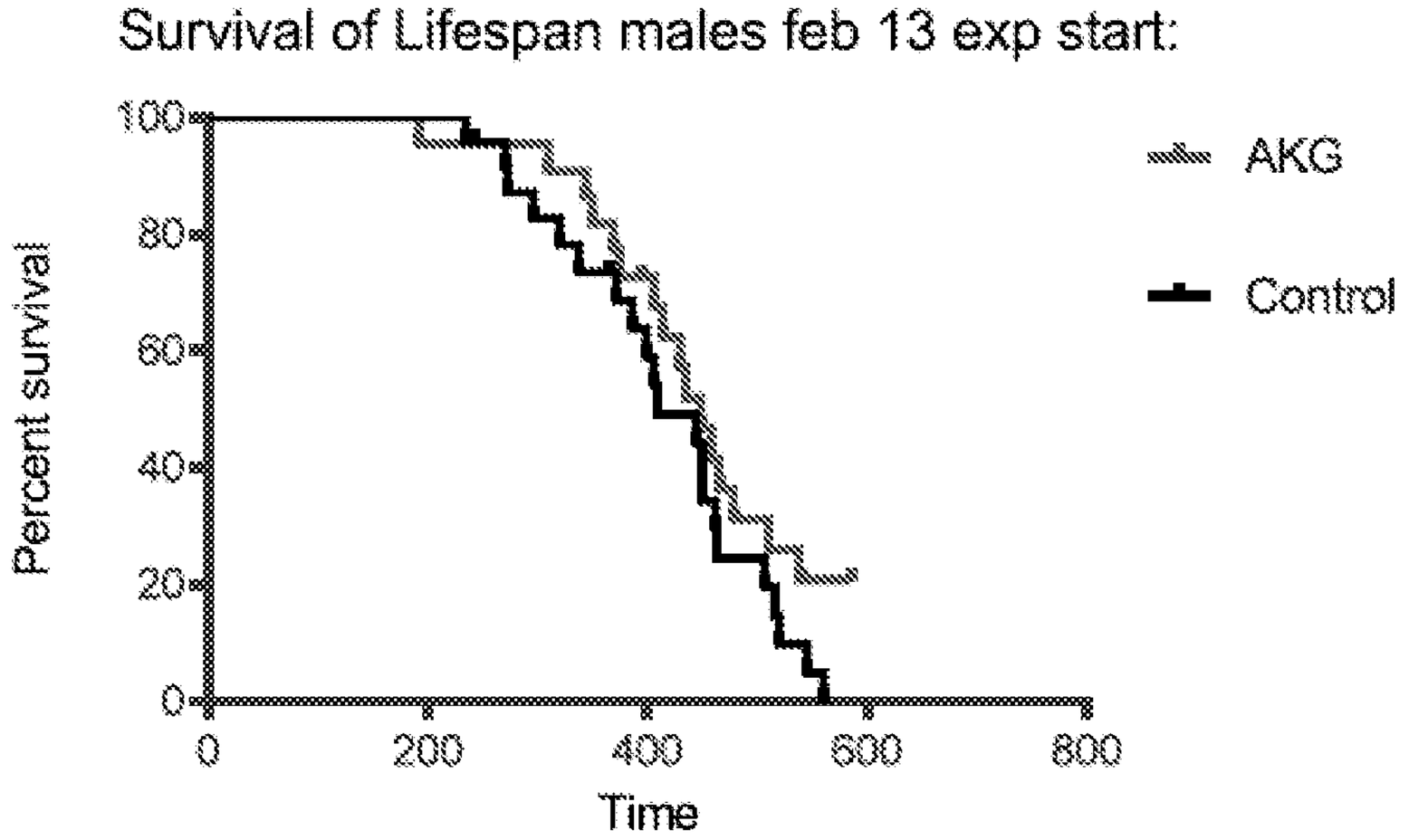

Survival of Lifespan males feb 13 exp start:
Percent survival
100
80
60
40
20
0
0
200
400
600
800
Time
AKG
Control

Fig. 14

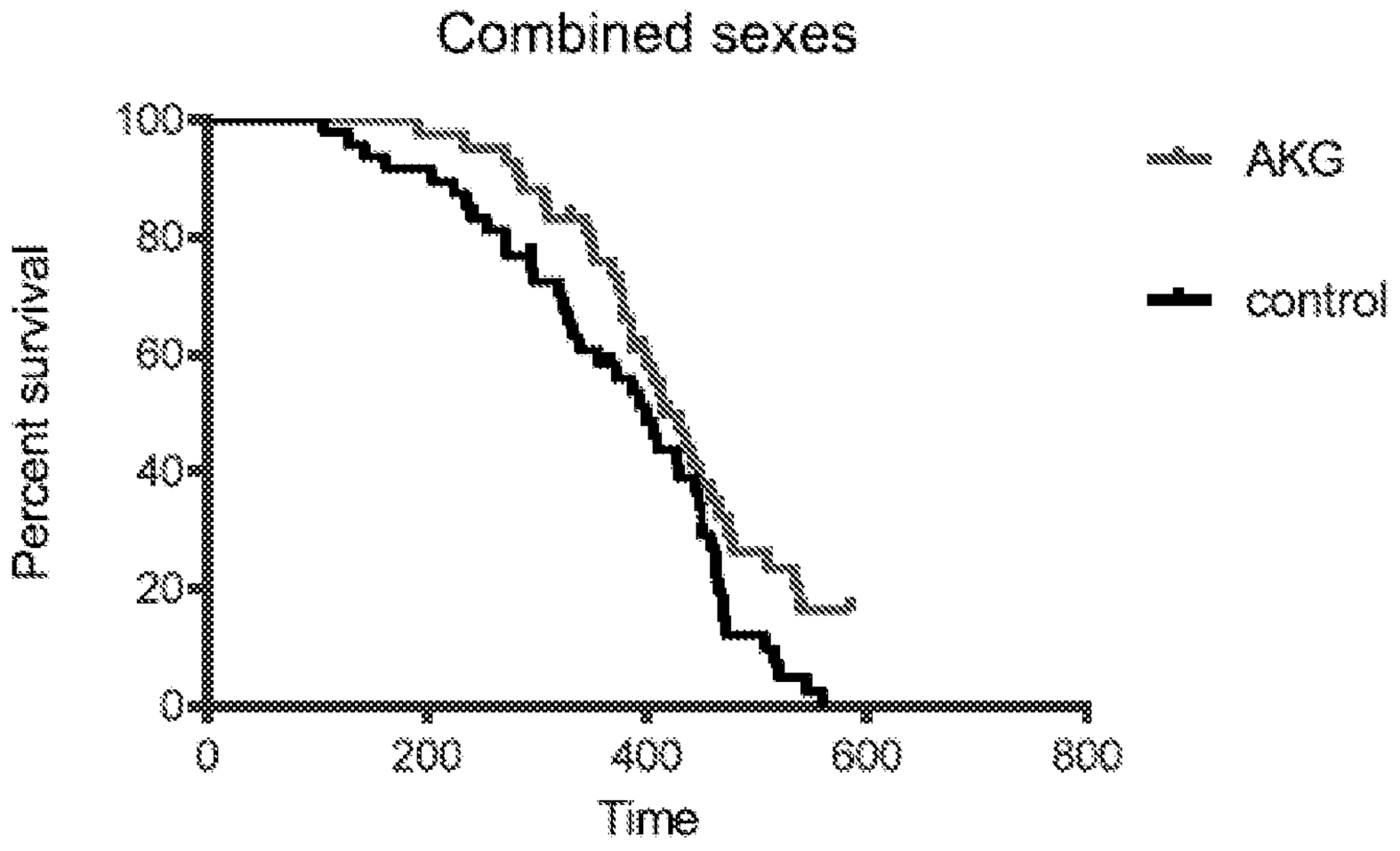

Combined sexes
Percent survival
100
80
60
40
20
0
0
200
400
600
800
Time
AKG
control

Fig. 15

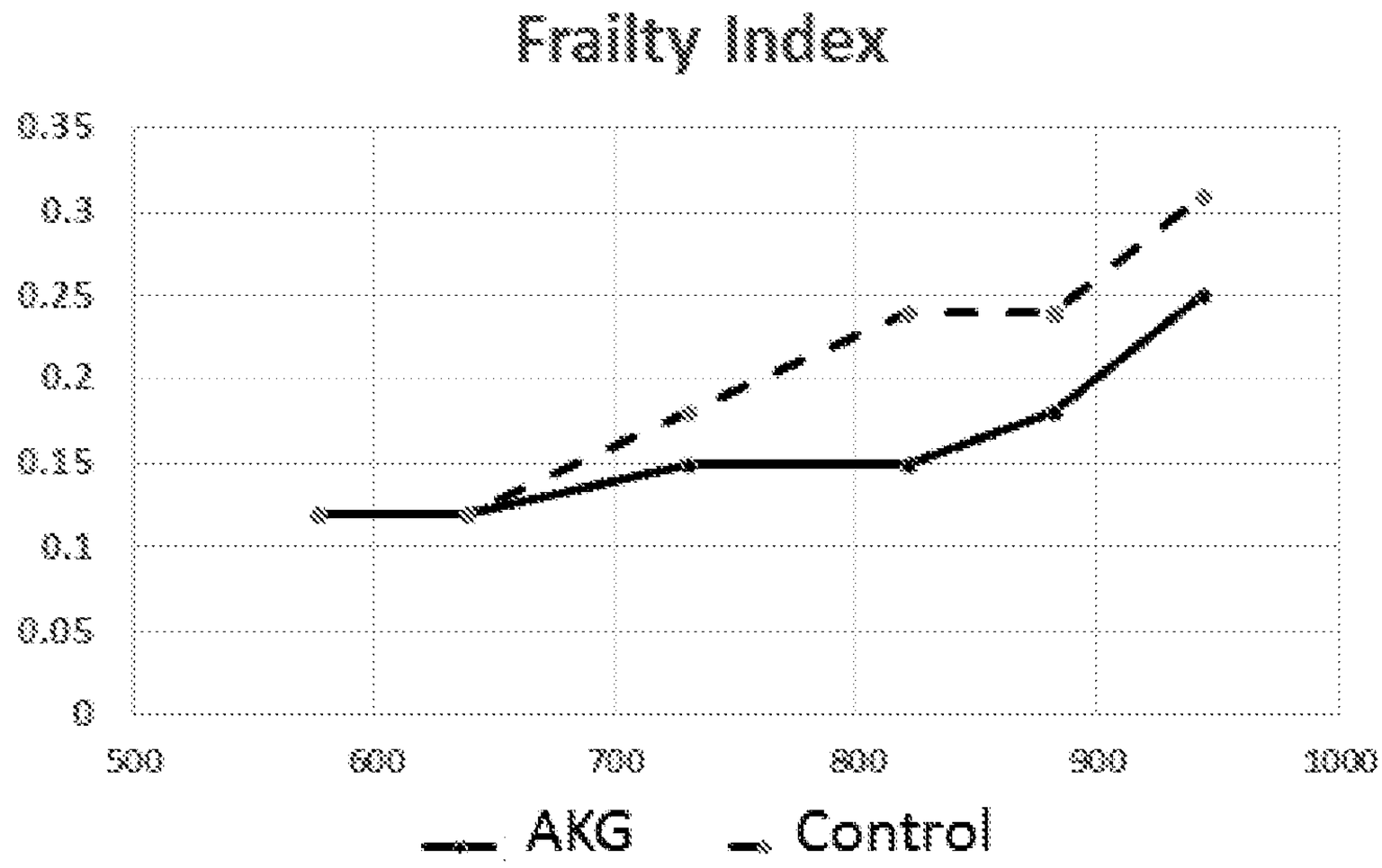


Fig. 16

ESTIMATES FOR EXTENSION WITH AKG	
Ext. from Birth – Males	4%
Ext. from Treat. – Males	10%
Ext. from Birth – Females	7%
Ext. from Treat. – Females	17%
Frailty from Birth – Females	17%
Frailty from Treat. – Females	67%

Fig. 17

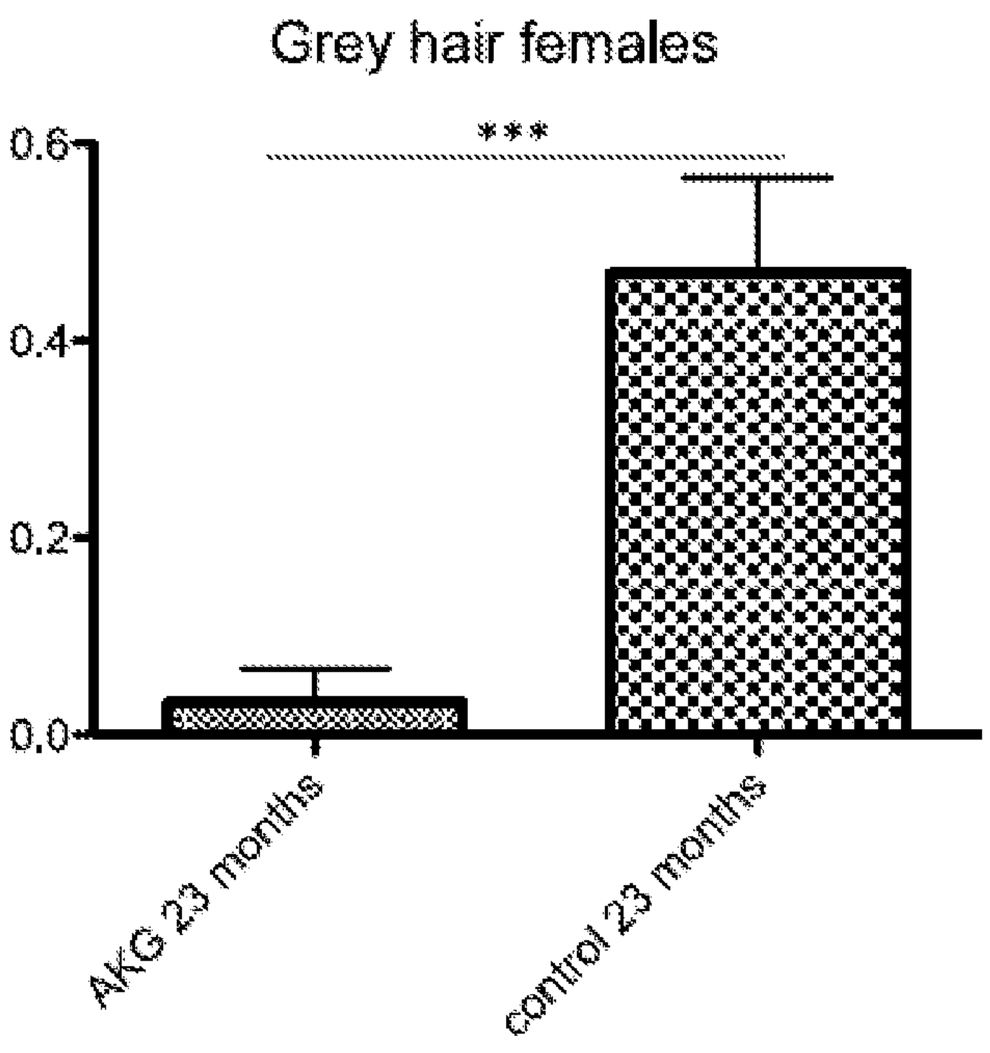

Grey hair females
***
0.6
0.4
0.2
0.0
AKG 23 months
control 23 months

Fig. 18

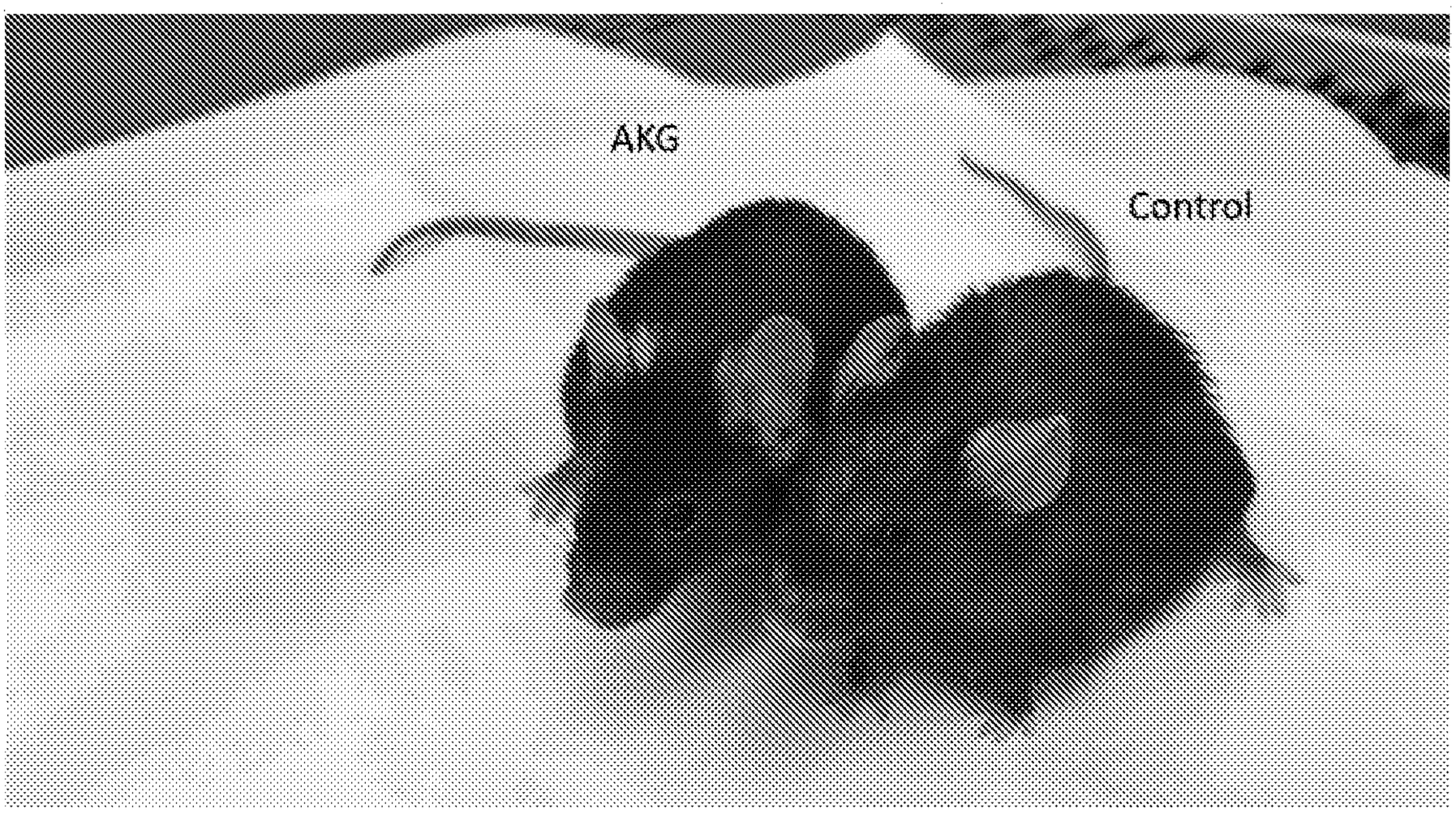

AKG
Control

Fig. 19

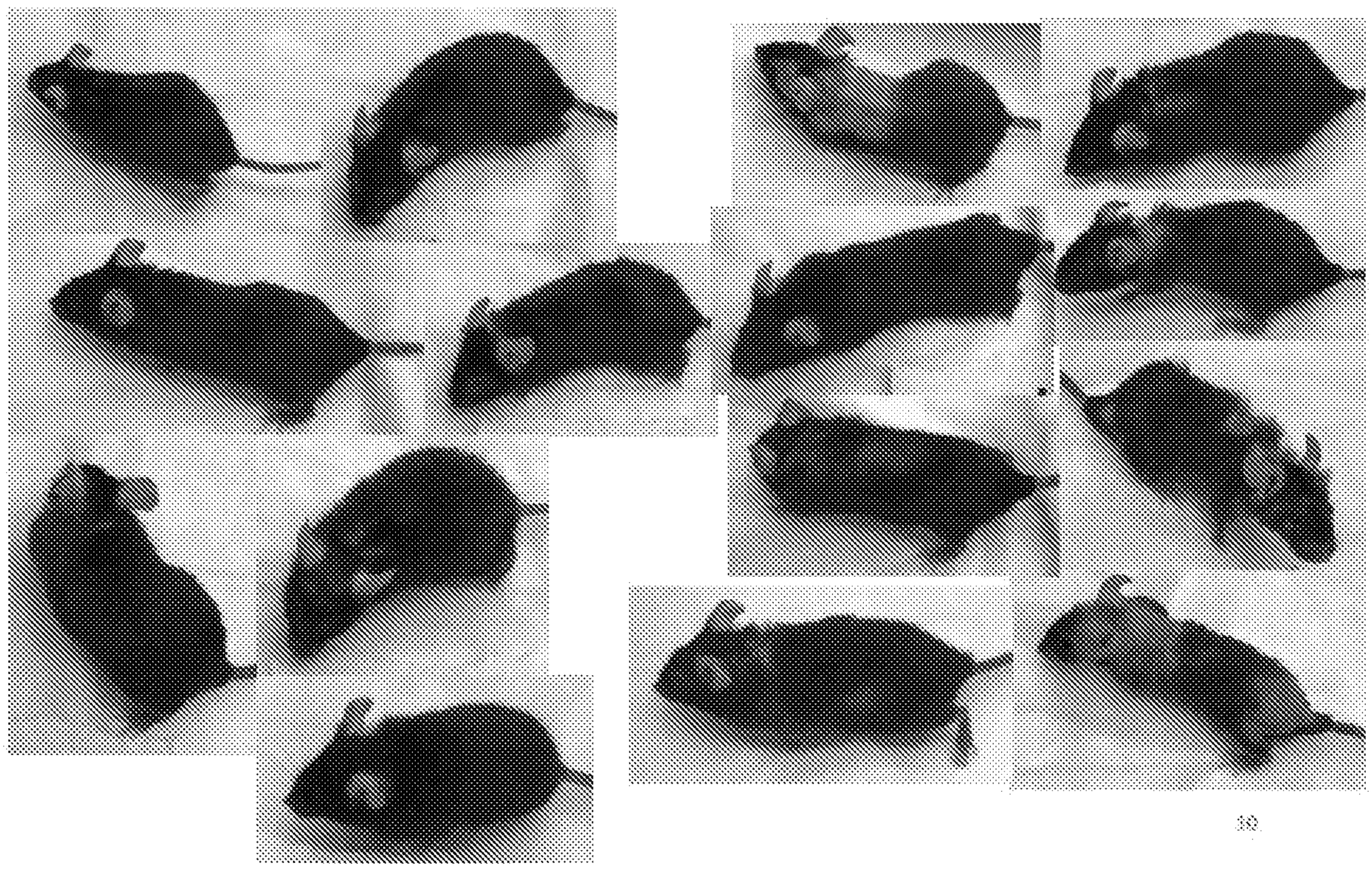

AKG
Control

Fig. 20

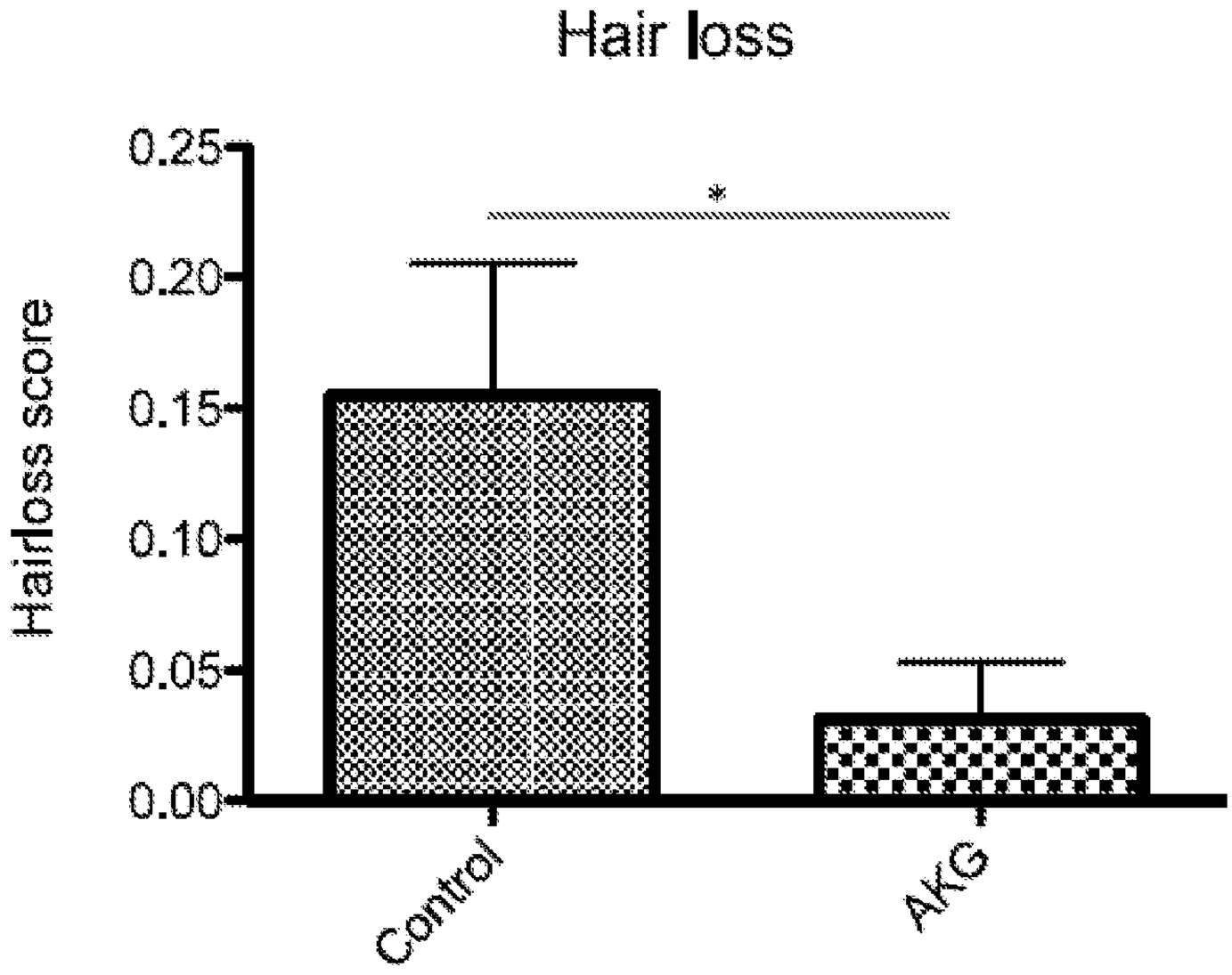

Hair loss
Hairloss score
0.25
0.20
0.15
0.10
0.05
0.00
*
Control
AKG

Fig. 21

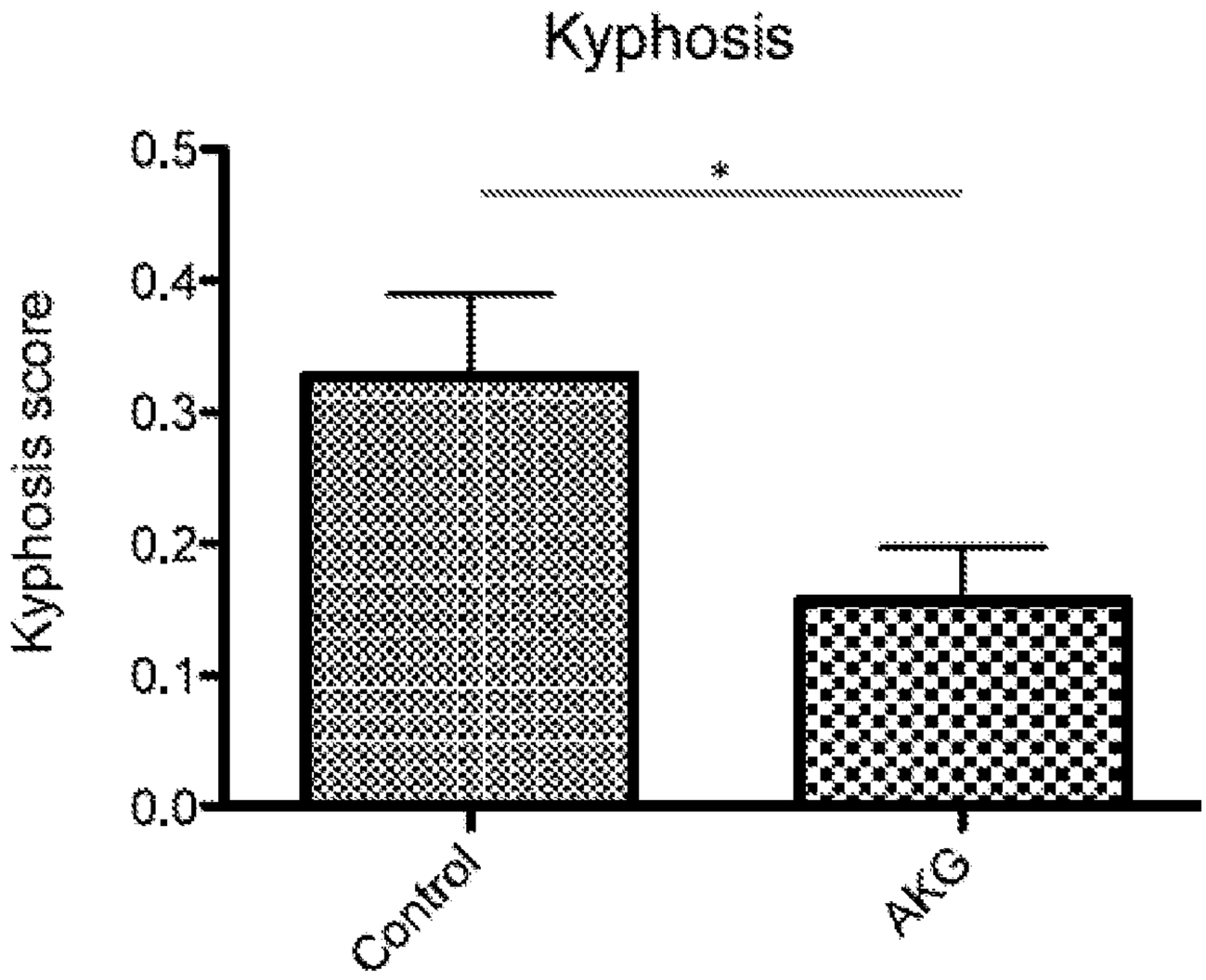

Kyphosis
Kyphosis score
0.5
0.4
0.3
0.2
0.1
0.0
*
Control
AKG

Fig. 22

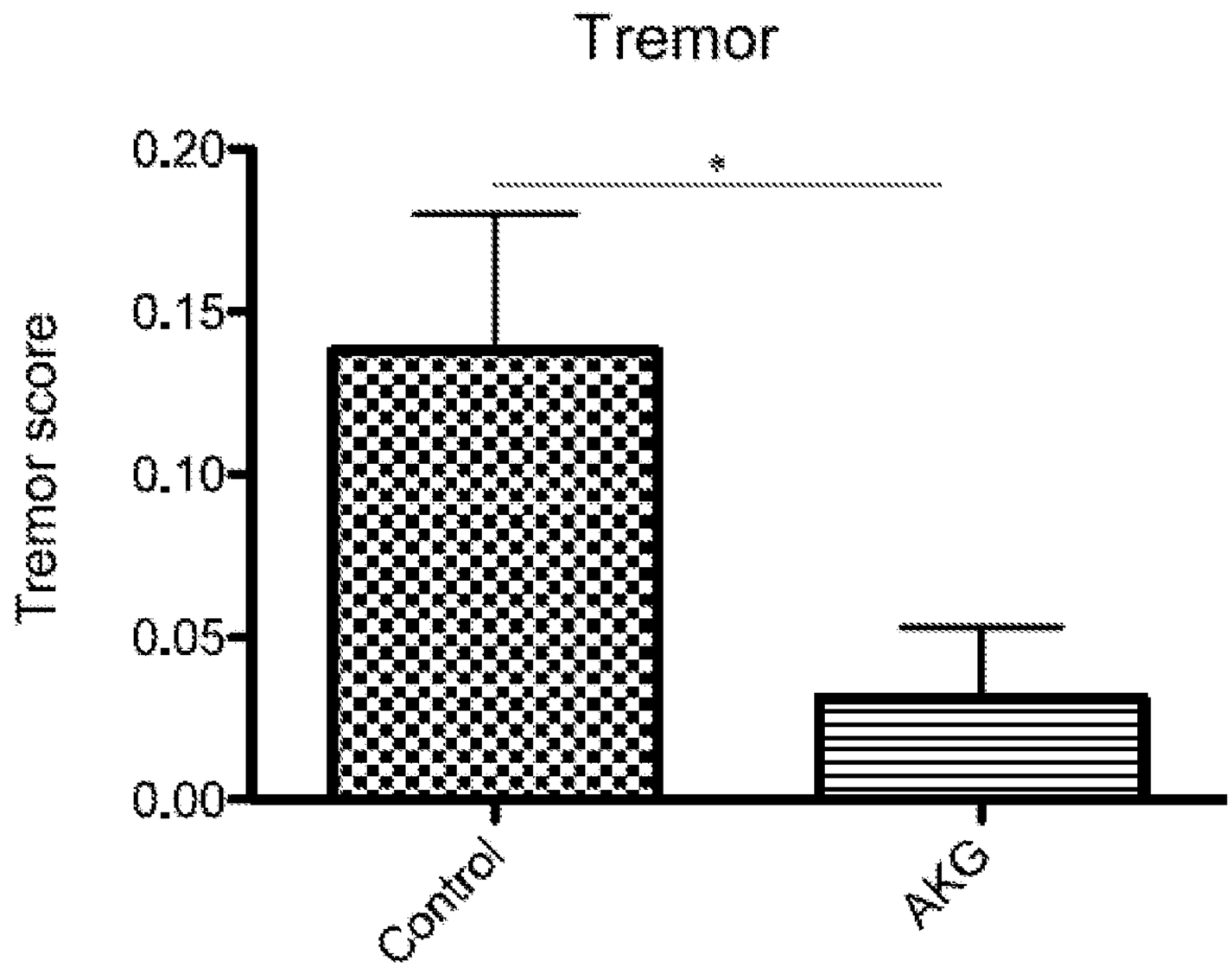

Tremor
Tremor score
0.20
0.15
0.10
0.05
0.00
*
Control
AKG

Fig. 23

	Control	18 months	AKG
IL-10 (25)	1	0,136377363	0,084663547
IL-3 (29)	1	0,241209801	0,199181167
IL-6 (34)	1	0,224151139	0,403633531
TNFa (77)	1	0,2386238	1,543929338
GM-CSF (15)	1	0,242947471	0,152199
IL-10 (43)	1	0,257950351	0,291650594
IL-4 (28)	1	0,271961113	0,315880571
MIP-1B (66)	1	0,278581165	0,468324703
IL-12 (p40) (45)	1	0,320644229	0,396767653
RANTES (75)	1	0,341923483	0,373757016
IL-13 (52)	1	0,346204936	0,272643758
IL-12 (p70) (47)	1	0,384039939	0,696061208
MIG (74)	1	0,397397745	0,912610758
MCP-1 (62)	1	0,434987489	2,101009107
IL-2 (26)	1	0,472693535	0,471634631
G-CSF (13)	1	0,477859673	0,611104914
IP-10 (57)	1	0,533134364	1,159954894
IL-17 (56)	1	0,558234765	0,281974228
MIP-1a (64)	1	0,560636264	0,375402522
IFNy (19)	1	0,645812311	0,809169638
VEGF (76)	1	0,693848355	0,883340849
IL-1a (21)	1	0,704691383	0,544236274
IL-5 (30)	1	0,722142295	0,746495493
sCD40L (61)	1	0,736553481	0,835952196
M-CSF (67)	1	0,825671362	0,678025821
IL-9 (38)	1	0,849248123	1,316876102
Eotaxin (14)	1	0,936691809	0,813652791
MIP-2 (73)	1	0,952643192	0,856532502
IL-7 (36)	1	1,747358564	0,27716,791
IL-15 (54)	1	2,293437673	0,384103441
LIX (53)	1	2,489811035	1,556389501

Fig. 24

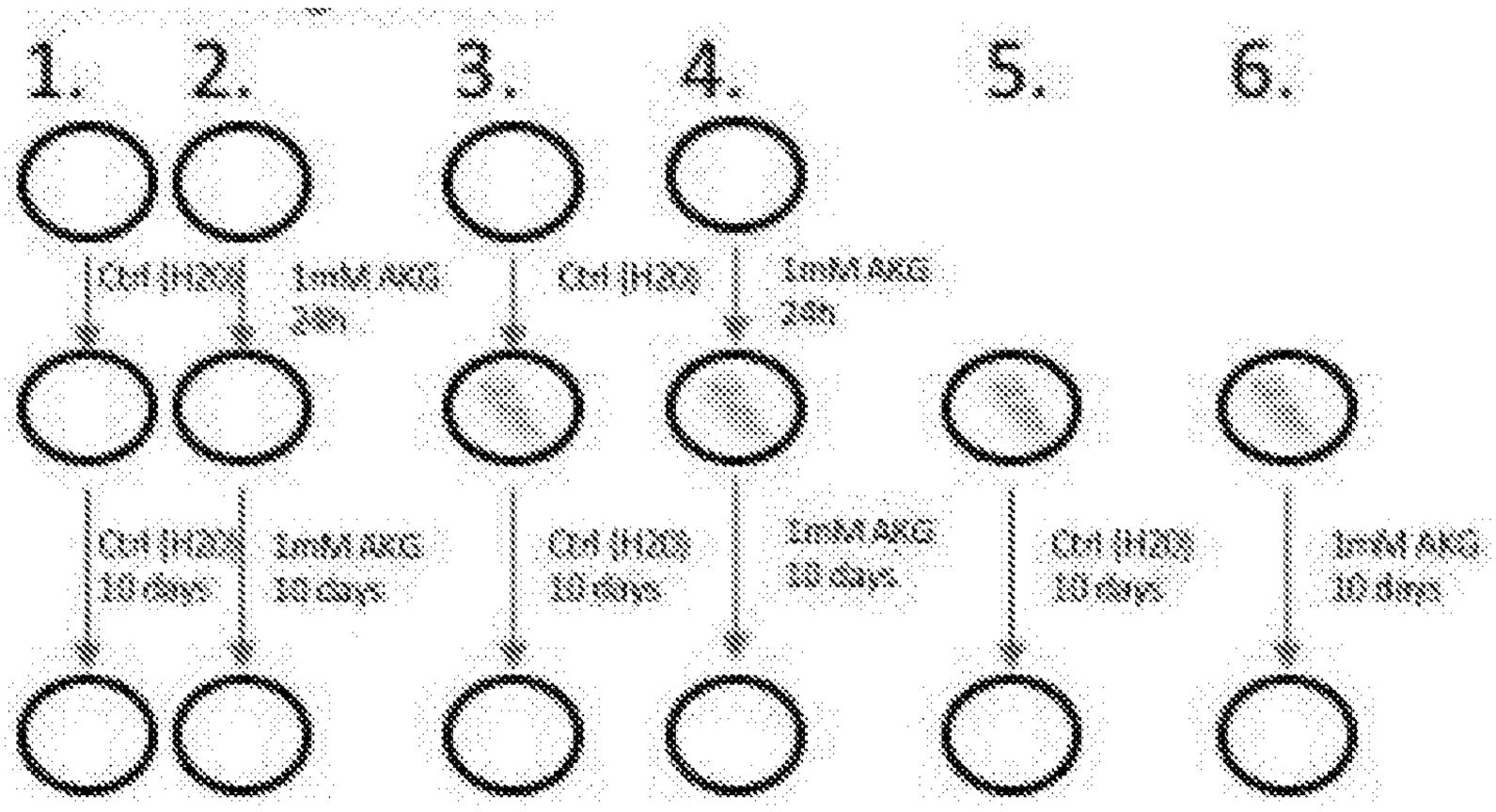
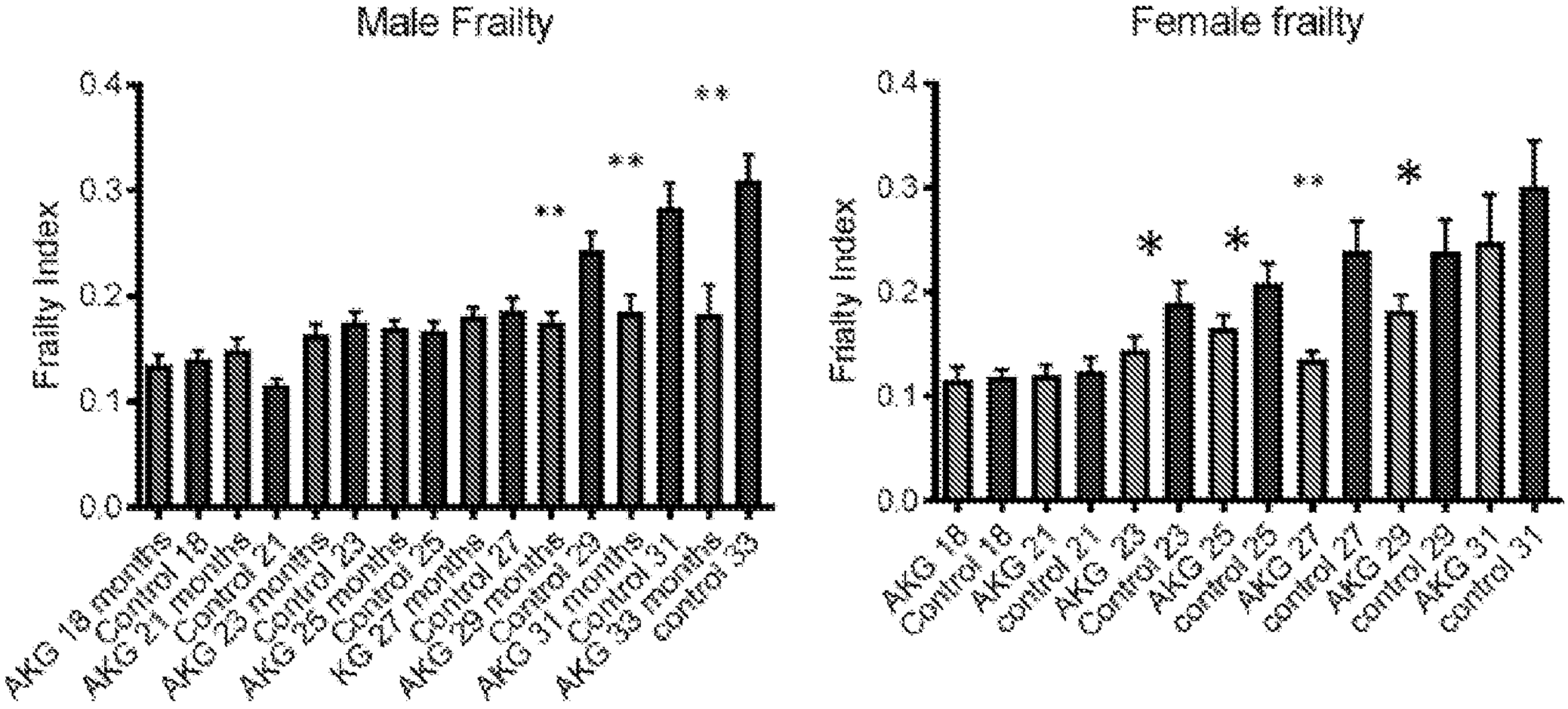


Fig. 25



* p<.1
** p<.05

Fig. 26

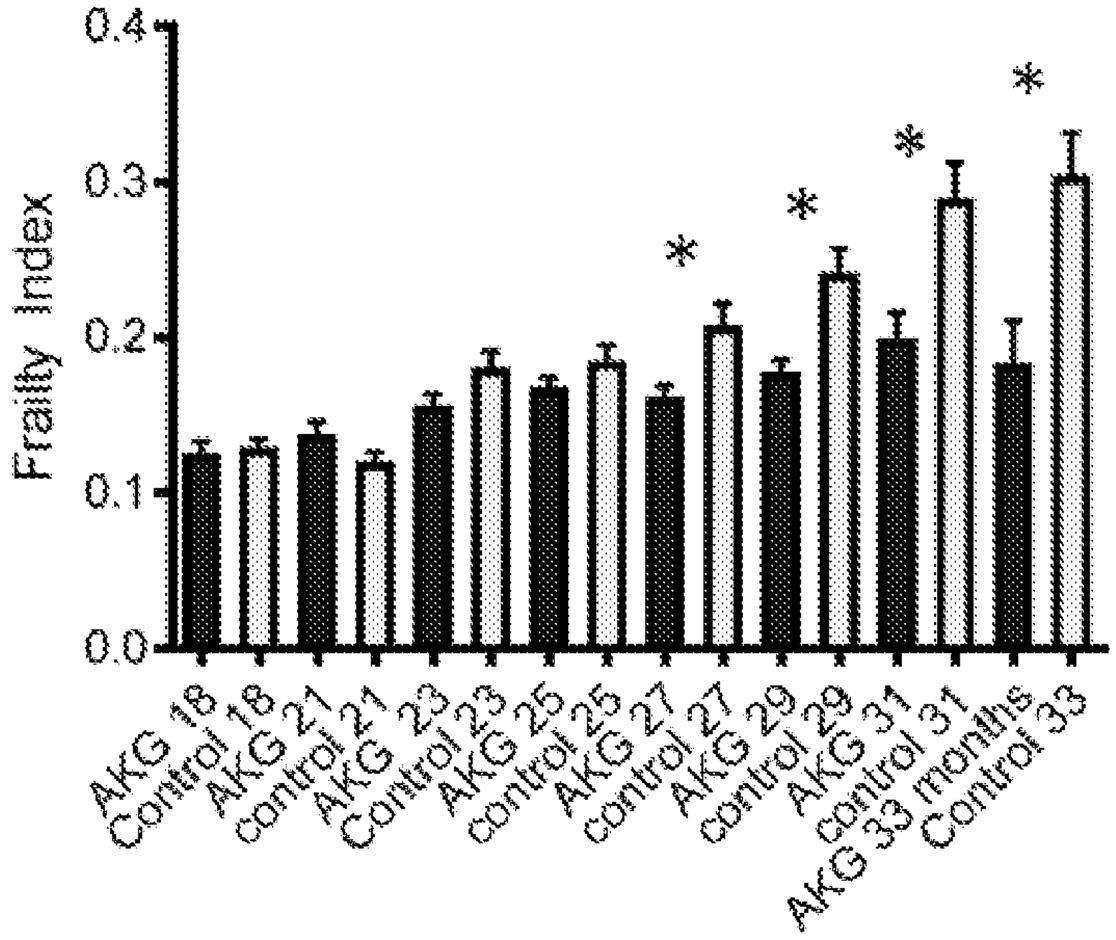
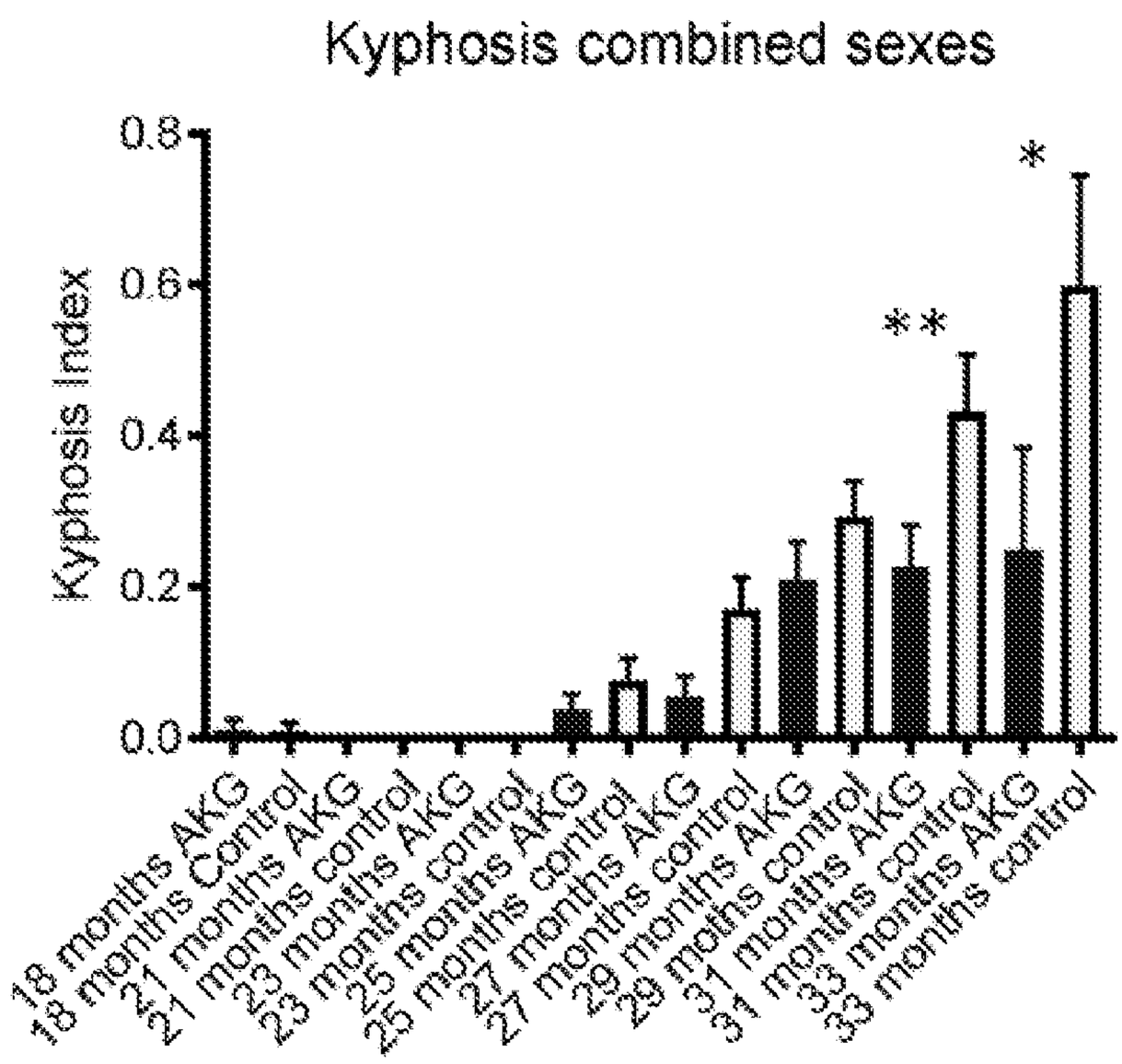


Fig. 27



* p<.1
** p<.05

Fig. 28

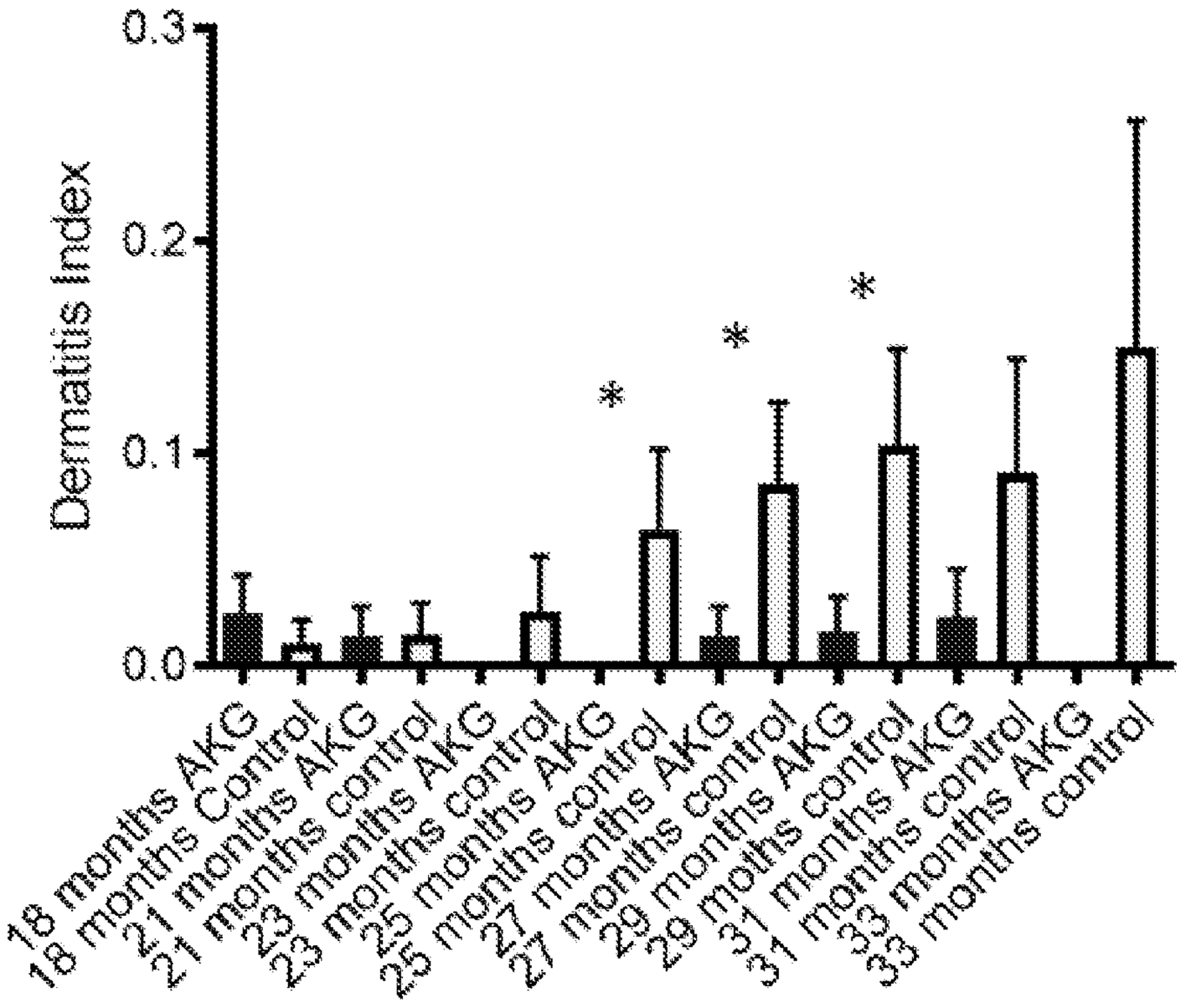

Combined sexes dermatitis
Dermatitis Index
0.3
0.2
0.1
0.0
*
*
*
*
18 months AKG
18 months Control
21 months AKG
21 months control
23 months AKG
23 months control
25 months AKG
25 months control
27 months AKG
27 months control
29 months AKG
29 months control
31 months AKG
31 months control
33 months AKG
33 months control
* p<.1

Fig. 29

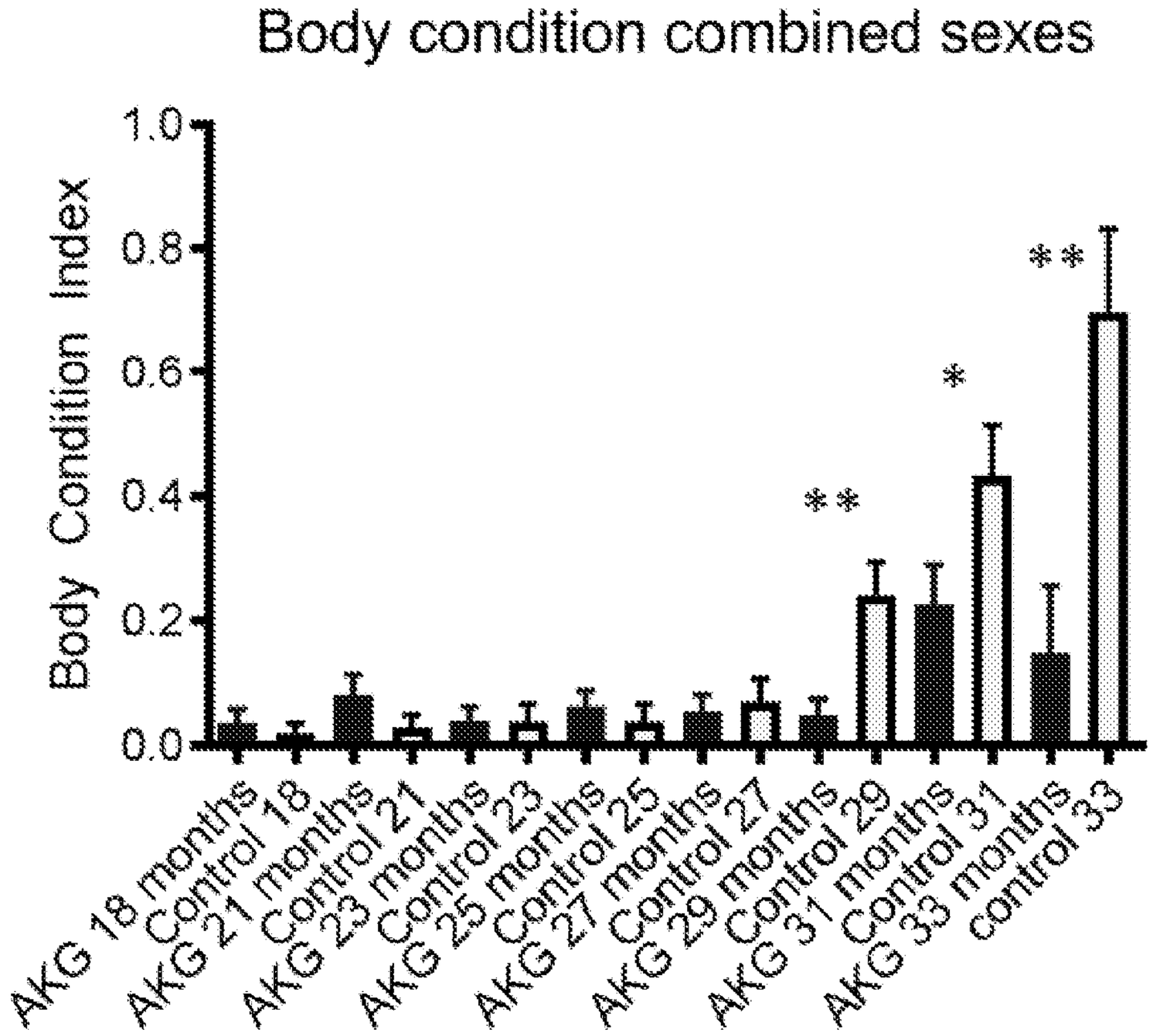
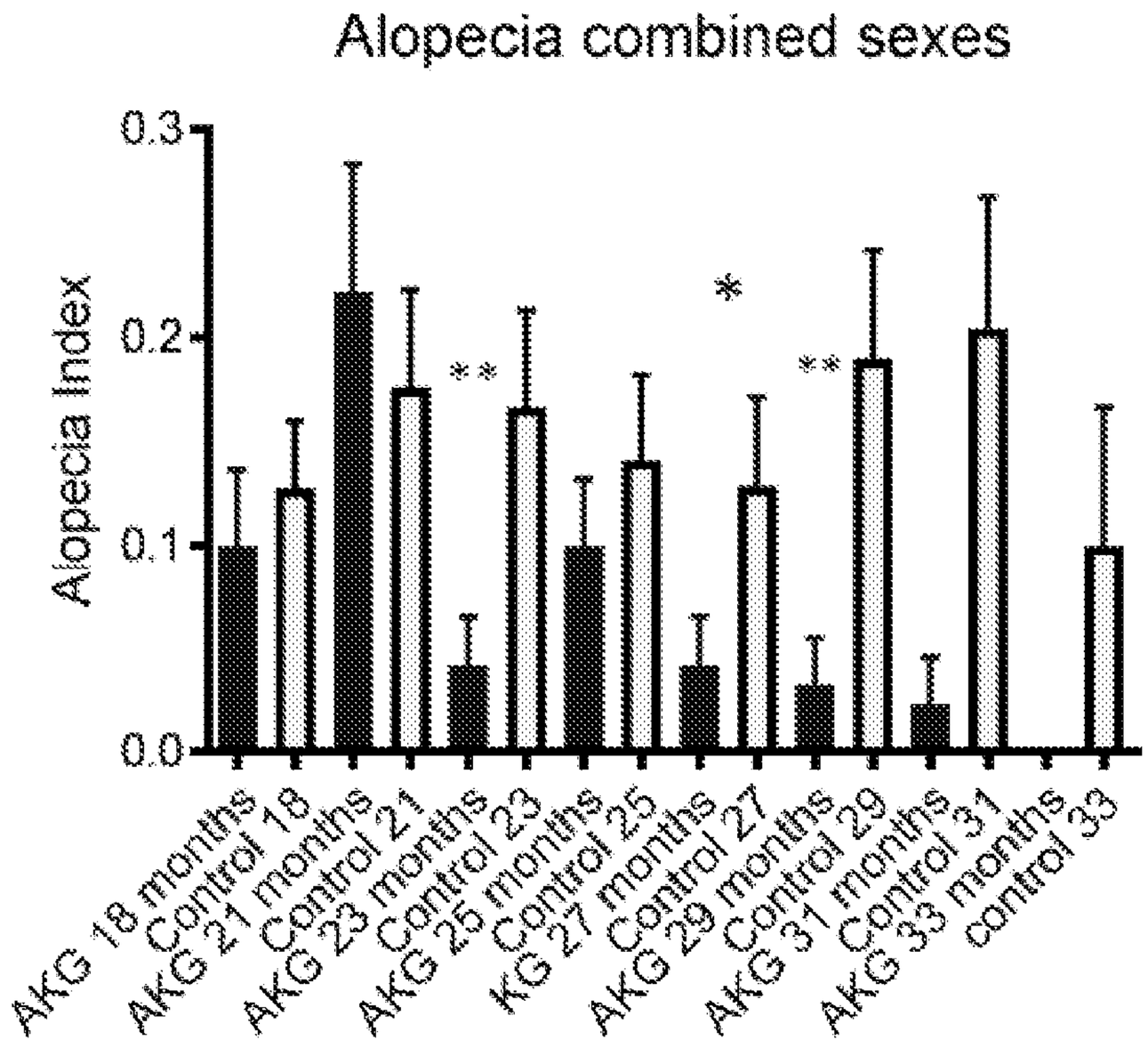

Body condition combined sexes
Body Condition Index
1.0
0.8
0.6
0.4
0.2
0.0
**
*
AKG 18 months
Control 18
AKG 21 months
Control 21
AKG 23 months
Control 23
AKG 25 months
Control 25
AKG 27 months
Control 27
AKG 29 months
Control 29
AKG 31 months
Control 31
AKG 33 months
control 33
* p<.1
** p<.05

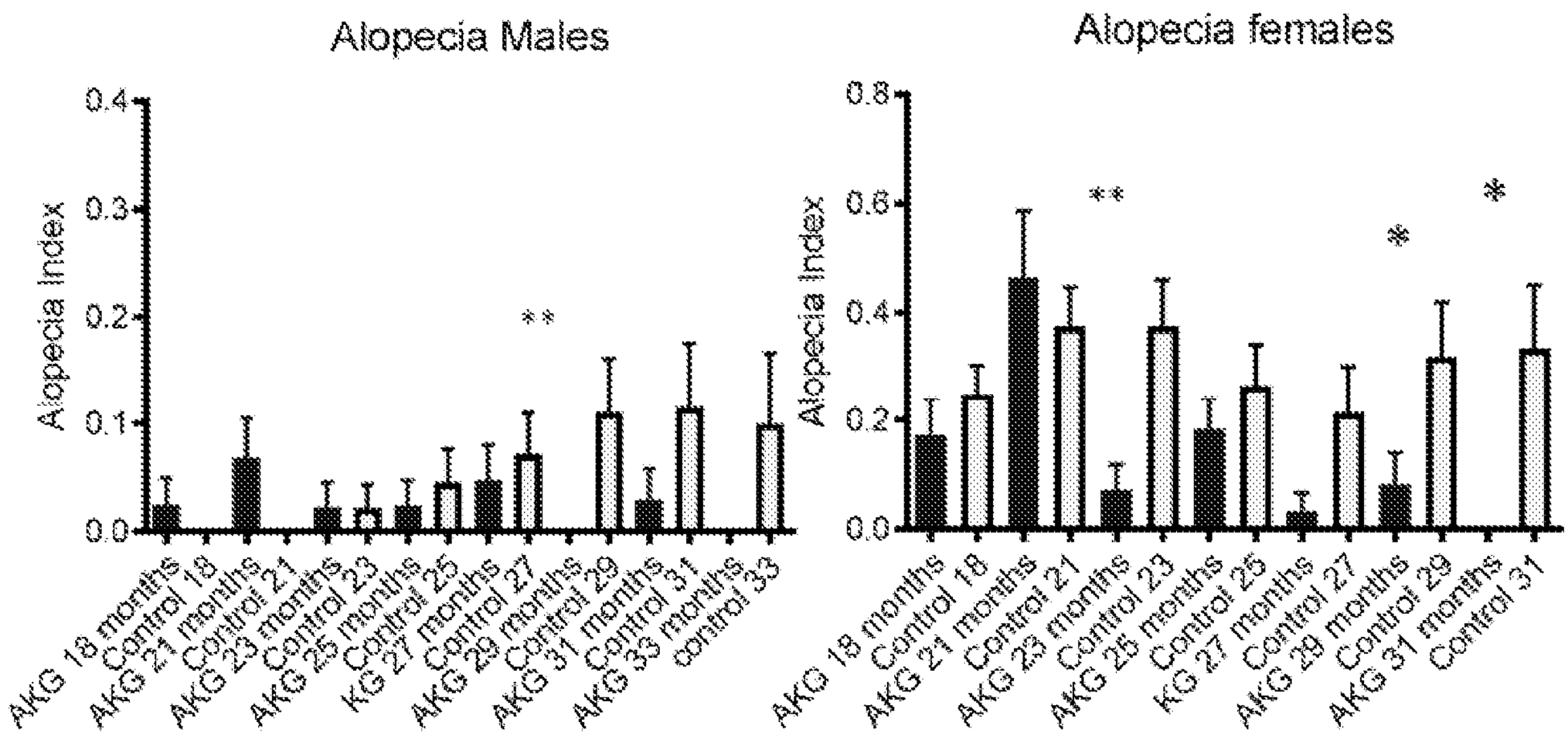
Fig. 30



* p<.1

** p<.05

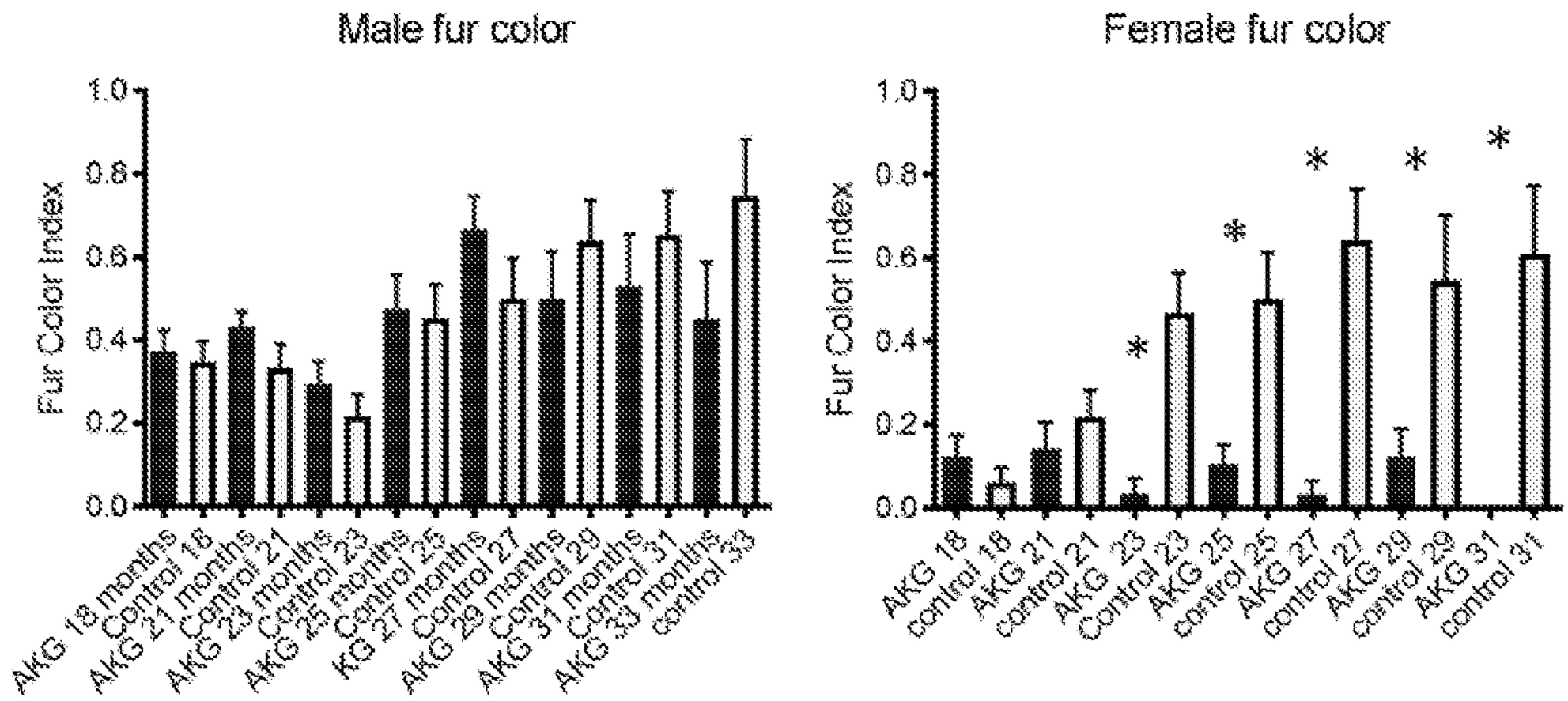
Fig. 31



* p<.1

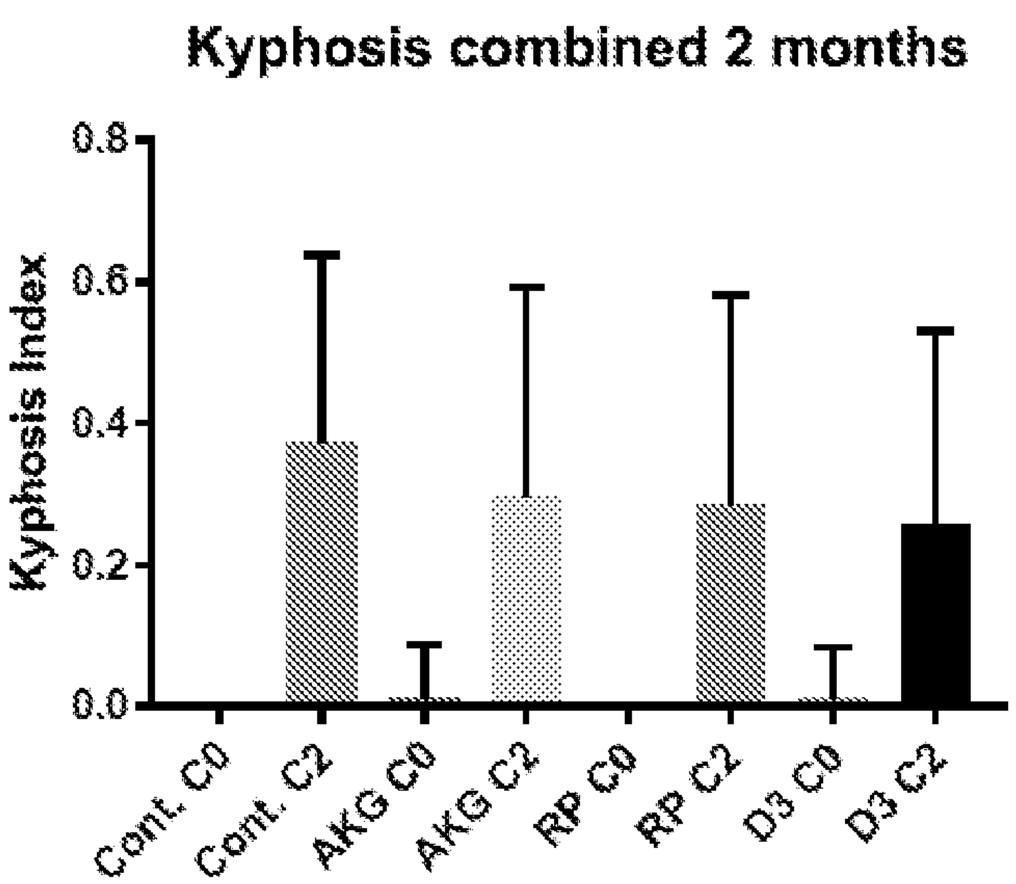
** p<.05

Fig. 32



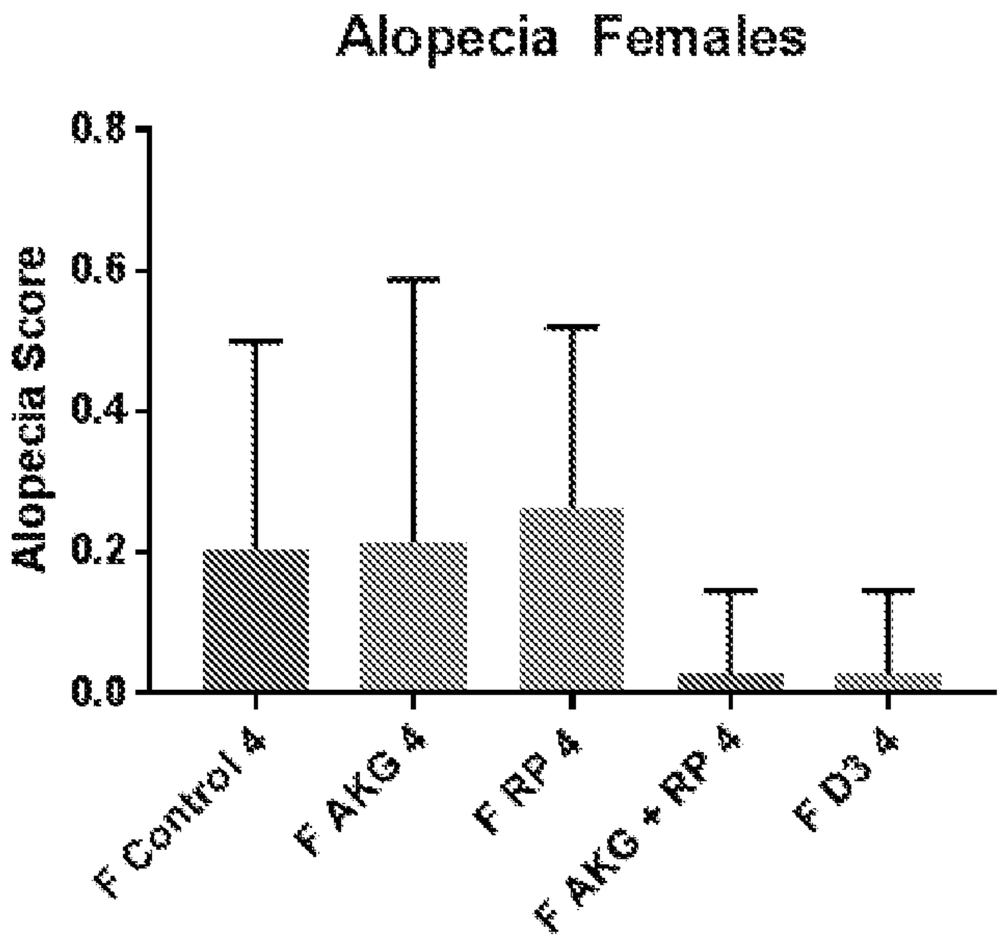
* p<.05

Fig. 33



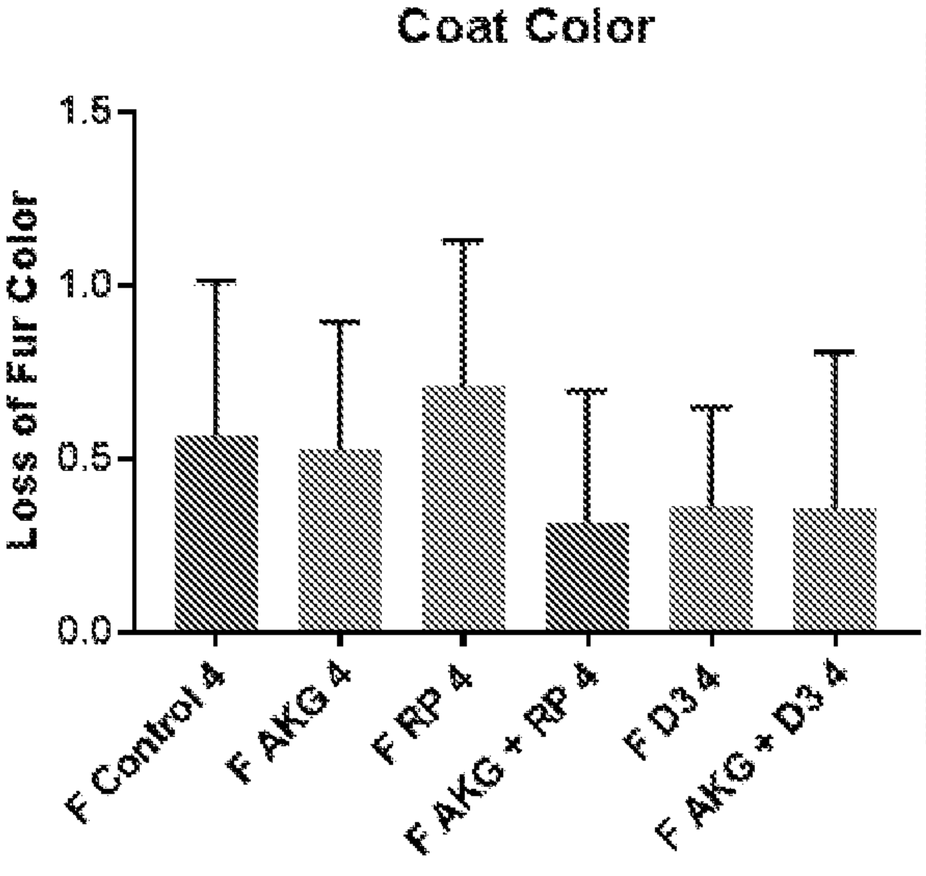
P values	Control	AKG	RP	D3
Control				
AKG	.21			
RP	.15	.85		
D3	.04	.50	.63	

Fig. 34



P Values	Control	AKG	RP	AKG + RP	D3
Control					
AKG	.92				
RP	.50	.64			
AKG + RP	.02	.05	.001		
D3	.02	.05	.001	>.99	

Fig. 35



P value	Control	AKG	RP	AKG + RP	D3	AKG + D3
Control						
AKG	.72					
RP	.30	.14				
AKG + RP	.06	.08	.004			
D3	.09	.14	.005	.69		
AKG + D3	.13	.20	.01	.75	.97	

Fig. 36

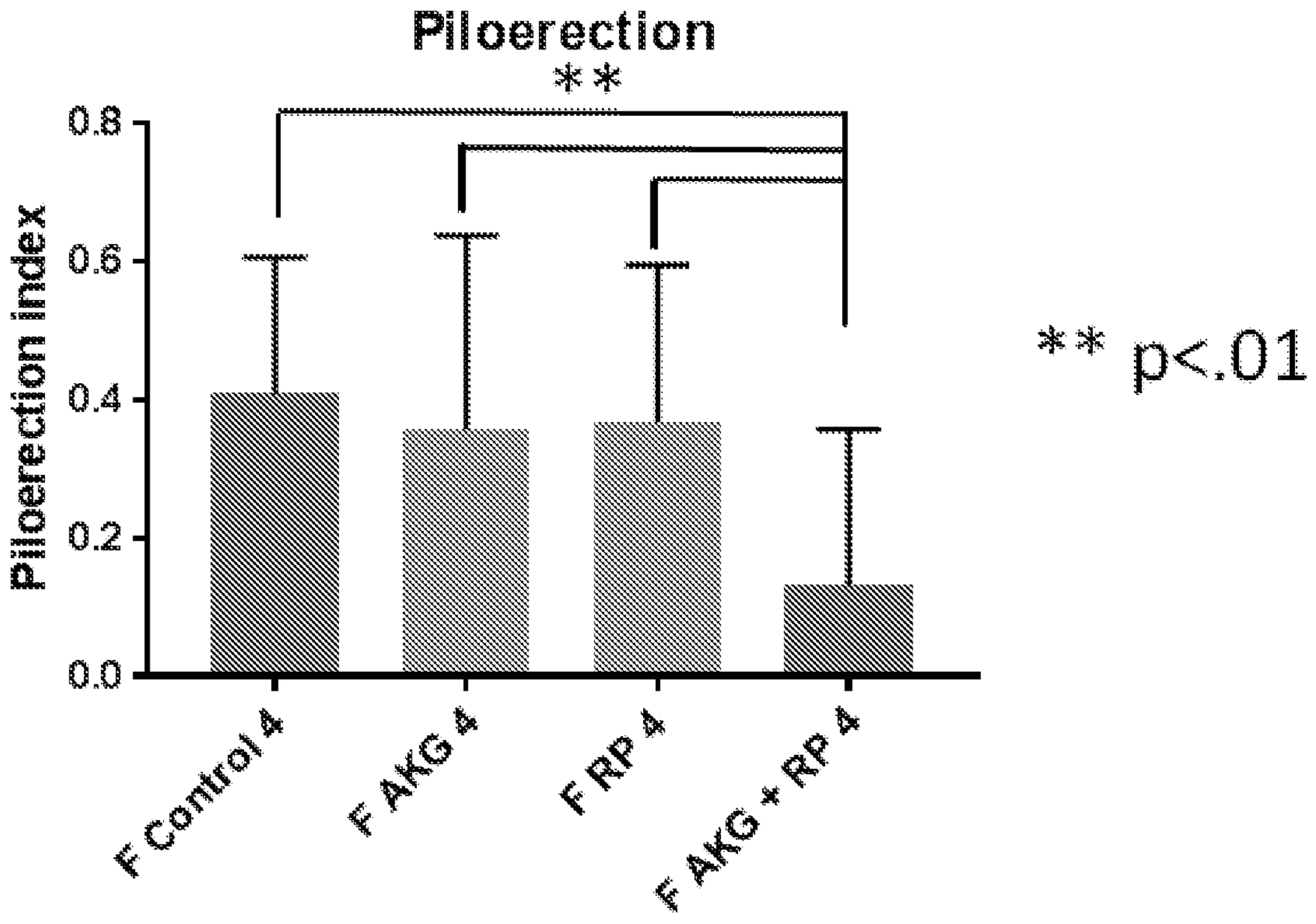

Piloerection
**
Piloerection index
0.8
0.6
0.4
0.2
0.0
F Control 4
F AKG 4
F RP 4
F AKG + RP 4
** p<.01

Fig. 37