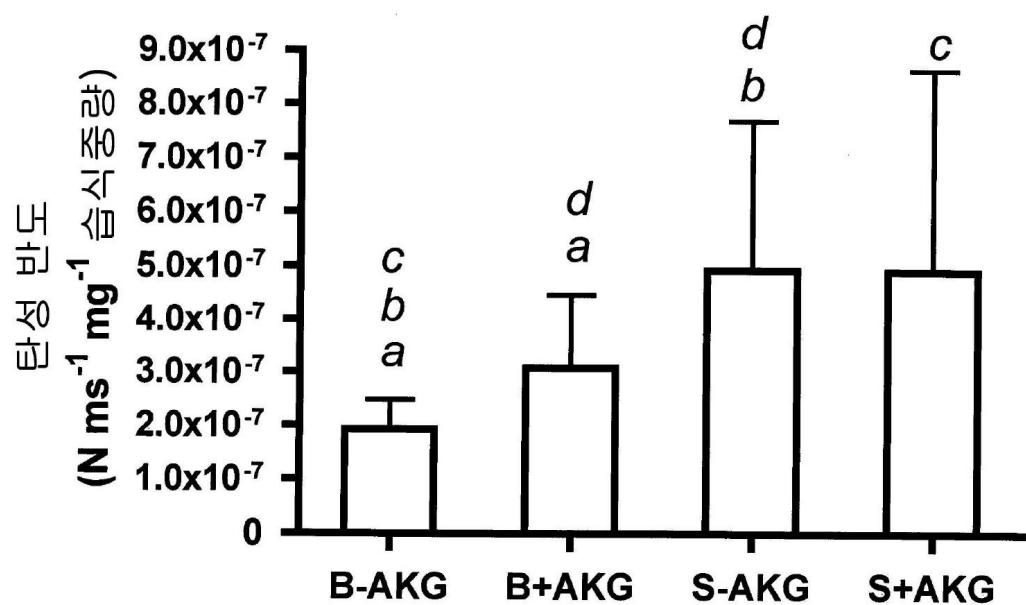


	(19) (12)	(KR) (A)	(11) (43)	10-2010-0039874 2010 04 16
(51)	Int. Cl.		(71)	
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(30)	0701602-5 2007 07 02	(SE)		
	:	21		

(54)

(57)



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1

- ,
- a) - (AKG);
- b) - ;
- c) , - ;
- d) - ,

2

1 ,

31 2 , , , , ,
/**4**

1 3 ,

5

4 , , , ,

6

1 5 ,

7

1 6 ,

8

1 7 , -

9

8 , -

101 9 , , kg 1
1000 ng**11**

10 400 ng , , kg

12

1 11 , , kg
10 100 ng .

13

- a. - (AKG) ;
- b. - ;
- c. , - ;
- d. - ;

14

13

15

16

13 ,

17

16 , , , ,

18

13 ,

19

13 ,

20

13 19 , .

21

[0002]

[0003]

1992 NH
 (gastric bypass procedure)

[0004]

Coate . 25 , (bone turnover)
, (hip trochanter) .

[0005]

($\quad > 160/90 \text{ mmHg}$) 67
44 (66%)

[0006]

[0007]

(stiffness) (predictor)

(PH) , , , (exertion)
, , , (exercise tolerance)
, (WOD I)

[0009]

[0010]

[0011]

[0012]

(bypass operation)

[0013]

- [0015] b) - ;
- [0016] c) - ;
- [0017] d) -
- [0018]
- [0019]
- [0020]
- [0021]
- [0022]
- [0023] 400 ng 10 100 ng kg 1 1000 ng 10
- [0024]
- [0025] a. - (AKG);
- [0026] b. - ;
- [0027] c. - ;
- [0028] d. -
- [0029]
- [0030]
- [0031]
- [0032]

[0033]

[0034]

(AKG),

[0035]

[0036]

[0037]

1000 ng 10 400 ng 10 100 ng kg 1

[0038]

1	AKG	(+AKG)	(-AKG)	(B)	(sham operated
rat) (S)			(elastic recoil)		1,000 /
	A/D		(force transducer)		
± SE				: a & d = p < 0.05	b = p < 0.01,
c = p = 0.01.	4			: B-AKG n = 6	B+AKG n = 11, S-AKG n = 12
S+AKG n = 12					
2		(stretch)			
			(13 ~ 14 kPa)	0.14%	1 /
		2	3		
		(16%	
		/			
3					
4	1				
		:		(A) Na-AKG	(B) Ca-AKG
			1,000	/	A/D
± SE					
b = P < 0.01, c = P < 0.001.	3				: a = P < 0.05
					n = 6
5	2				
		:		(A) Na-AKG	(B) Ca-AKG
			1,000	/	A/D
± SE					
b = P < 0.01, c = P < 0.001.	3				: a = P < 0.05
					n = 6

[0039]

[0040]

[0041]

[0042]

[0043]

[0044]

[0045]

[0046]

[0047]

[0048]

[0049]

[0050]

[0051]

[0052]

[0053]

[0054]

[0055]

[0056]

2

[0057]

[0058]

[0059]

[0060]

[0061]

indication)

(specific)

[0062]

· , (format)

(effervescent)

[0063]

[0064]

[0065]

(parental)

(), Tris-HCl.,

(micelle), , (erythrocyte ghost),

[0066]

[0067]

[0068] pH 2 ~ 5, 2 ~ 4
~ 8

[0069]

[0070]

[0071] , , " " , 0.01 ~
 0.05 M 0.8% , . ,

[0072]

[0073]

[0074]

[0075]

[0076]

1; 0.01 1; 2 1; 0.1 1; 1.5 1; 0.2 1; 1.0

[0077]

, 1 1000 ng/kg / , 10 400 ng/kg / , 100 ng/kg / .

[0078]

[0093]

[0094]

LaPlace (T) (r)
(p) $T = p \times r$

LaPlace

[0095]

[0096]

\pm SE Gaussian Normal Distribution
student's paired t-
(variance) 0.05 P

[0097]

[0098]

[0099] (vet weight) ng 0.034 N (0.49 N /14.32 ng
) LaPlace 1.87 nm
, 0.018 kPa
, (13 ~ 14 kPa) 0.14%
(10 kPa) 0.18%
(Carroll . . 2006; Duka . . 2006).

[0100]

0.09 N (4.95×10^{-3} N/ng) 16%)
0.015 N (

[0101]

[0102]

S-AKG 1.9 $\times 10^{-7}$ \pm 0.2 $\times 10^{-7}$ N ns⁻¹ ng⁻¹ (vs) 4.9 $\times 10^{-7}$ \pm 0.8 $\times 10^{-7}$ N
ns⁻¹ ng⁻¹ . AKG (P = 0.007 ; B-AKG
(P = 0.44).

[0103]

[0104]

AKG (P = 0.037 ; B+AKG S-AKG 3.1 $\times 10^{-7}$ \pm 0.4 $\times 10^{-7}$ N ns⁻¹ ng⁻¹ (vs)
4.9 $\times 10^{-7}$ \pm 0.8 $\times 10^{-7}$ N ns⁻¹ ng⁻¹ . AKG ; P = 0.047 ; B-AKG B+AKG
(B-AKG 1.9 $\times 10^{-7}$ \pm 0.2 $\times 10^{-7}$ N ns⁻¹ ng⁻¹ (vs) 3.1 $\times 10^{-7}$ \pm 0.4 $\times 10^{-7}$ N ns⁻¹ ng⁻¹
(1).

[0105]

[0106]

(2). (,)

(2). (,)

[0107]

[0108]

[0109]

[0110]

2

Roux-en-Y (Roux-en-Y (bariatric)
(Adrian 2003).

[0111]

(Coates 2004, Cowan and Buffington 1998, Fernstrom 2006),

[0112]

(phase)

[0113]

H1

[0114]

[0115]

B12 B12 B12

B12 70%
(Lynch 2006, Shah 2006).

(Lynch 2006, Parkes 2006,
Shah 2006).

pH

(pinprick syndrome)
(Lynch 2006).

[0116]

(Coates, Buffington 1998, Fernstrom 2006, Foley 1992).

[0118]

[0119]

(2005)

?

?

Gokce

[0120]

[0121]

(turnover)

(bone turn-over)

%

(Stretch effect)

[0123]

P Laplace

pn

, $P = pn + T(1/r)$

r

T

P = T /r

[0124]

AKG

[0125]

AA

AKG

AKG

AA

, AKG

[0126]

[0127]

[0128]

AKG

[0129]

[0130]

_____2

[0131]

[0132]

1

[0133]

(Lund University)
Committee for Animal Experiments
(European Community regulations)

(the Ethical Review

(M4-05),

[0135]

[0136]

50 NMR (Department of
Cell & Organism Biology) . 12/12
Altronin no. 1314 Spezialfutterwerke, Lage, Germany

[0137]

95% CO₂ ,
1 mm 4.5 mm , ,
(Harrison .
Reprod Fertil Dev. 1997; 9(7): 731-40. Harrison and Flatman Am J Physiol. 1999 Dec; 277(6 Pt 2): R1646-53). 0.01 ng ,
2.75 ng .

[0138]

5.5 cm 3.2 cm NaCl 136.91 nM KCl 2.68 nM Na₂HPO₄ 8.08 nM NaH₂PO₄ 1.66 nM (0.15 MPBS, pH 7.4) 44 ml (37 °C) 8S PowerLab A/D (ADI Instruments, Chalgrove, Oxfordshire, UK) (home-built bridge amplifier) FTO8 (Grass Instrument, West Warwick, RI) 0 ~ 0.05 kg 0.004% 2 ng (reliable force) PowerLab 8S A/D iBook G4 (running) Chart 5 v. 5.4 (ADI Instruments, Australia) 40,000 (40 kHz), 200 (differential)

[0139]

[0140]

2
(offset dial) (pre-amplifier unit)
0
5 (0.09 N)
0.49 N (FTO3 Grass))

[0141]

Chart v. 5.4 (AD Instruments)
 Australia) (Average Slope calculation)
 (Average Slope) (ns^{-1}) (trace selection)
 (best fit) (least-square line)

[0142]

[0143]

$$\text{LaPl ace} \quad (T) \quad (p) \quad , \quad T = p \times r \quad (r)$$

LaPlace

[0144]

$$(\text{N} \text{ ns}^{-1})$$

, $\text{N ns}^{-1} \text{ ng}^{-1}$

[0145]

[0146] \pm SE Gaussian Normal Distribution
(one-way) ANOVA
(variance) 0.05 P

[0147]

[0148]

[0149] , (wet weight) ng 0.178 N (0.49 N /2.75 ng
) , LaPlace 1.0 nm
, 0.178 kPa

[0150]

0.09 N (4.95×10^{-3} N/ng))
0.015 N (16%))

[0151]

[0152] 1 2 $3.3 \times 10^{-5} \pm 7.8 \times 10^{-7}$ $\text{N ns}^{-1} \text{ ng}^{-1}$
 $3.4 \times 10^{-6} \pm 9.4 \times 10^{-7}$ $\text{N ns}^{-1} \text{ ng}^{-1}$
90% ; 2 (vs) 1 (5).

[0153] Na-AKG (A)

[0154] Na-AKG , 1 2 $4.3 \times 10^{-5} \pm 1.6 \times 10^{-6}$
 $\text{N ns}^{-1} \text{ ng}^{-1}$ $3.7 \times 10^{-6} \pm 1.1 \times 10^{-6}$ $\text{N ns}^{-1} \text{ ng}^{-1}$ Na-AKG
(4%).
91% ; 2 (vs) 1 (5).

[0155] Ca-AKG (B)

[0156] Ca-AKG , 1 2 $6.4 \times 10^{-5} \pm 2.7 \times 10^{-6}$ $\text{N ns}^{-1} \text{ ng}^{-1}$, Ca-AKG
 10^{-6} $\text{N ns}^{-1} \text{ ng}^{-1}$ $3.8 \times 10^{-6} \pm 1.2 \times 10^{-6}$ $\text{N ns}^{-1} \text{ ng}^{-1}$ (4%).
94% ; 2 (vs) 1 (5).

[0157] (arterial robustness)

[0158] , (,)
(5%).

1

		, 0.49 N	
(3 1)		2	(%)
	1	6 4	6 4
Na-AKG(A)	6 4	6 5	75.0
Ca-AKG(B)	6 4	6 5	75.0

[0160]

[0161]

[0162]

[0163]

(tubular shape)

[0164]

[0165]

6

119 mmHg (150 mmHg 92 mmHg) (Durant, 1927).

, 6

120 mmHg (16 kPa)

1.8%

(13 ~ 14 kPa) 1.4% (Carroll, 2006; Duka, 2006).

[0166]

(aortic media)

(tangentially)

(sheet)

(tone)

(McEnery, 2007).

[0167]

, Laplace

Laplace

[0168]

Laplace

P

r

T

p_nP = p_n + T(1/r)

P = T / r

, Laplace

[0169]

[0170]

(Calabresi, 2007).

(media)

(Marin & Rodriguez-Martinez, 1999; Dao, 2005),

(arterial tree)

(Hajdu, 1990; Moreau, 1998; Laurant, 2004).

(Jacob,

2003; Dao, 2005).

(Diff, 1970;

Orlandi, 1993),

I III

(Jacob, 2003; Dao, 2005; Marin, 1995).

[0171]

1

2

0.178 kPa

2

(60 x) (McEnery, 2007), 20

90% (N ns^{-1} ng^{-1}) , AKG 2

[0172] AKG

[0173]

(McEnery 2007).

[0174] (Krebs)

(Hammarqvist 1991). , AKG

4 -4 , AKG (pool) (Son 2007).

[0175] Na- AKG Ca- AKG Ca- AKG AKG
 , Ca- AKG 100 ml 2 g , Na- AKG 50
 , AKG Na- AKG , AKG
 AKG 10 $/\text{ml}$ Ca- AKG , AKG
 AKG Ca- AKG , AKG

[0176] , AKG , G
 (CPR99) (He 2004). G
 AKG TCA / , ,

[0177]

[0178] , AKG (1)

[0179] []

[0180] []

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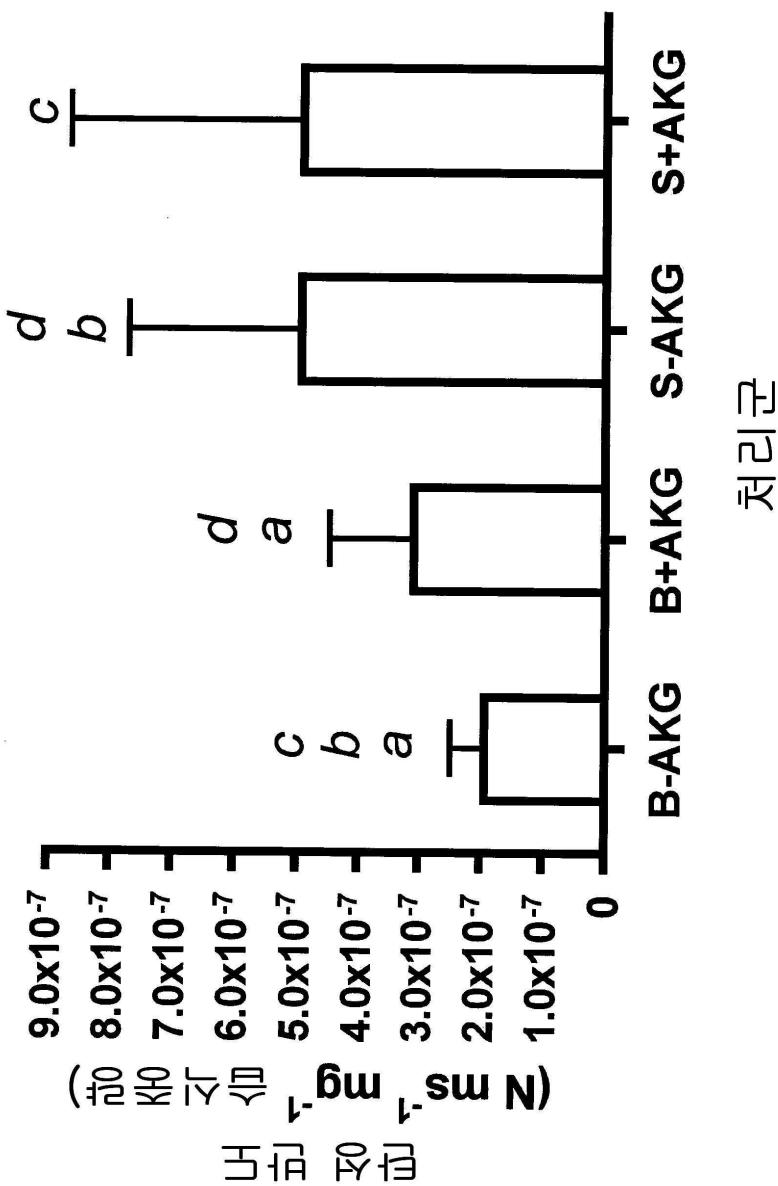
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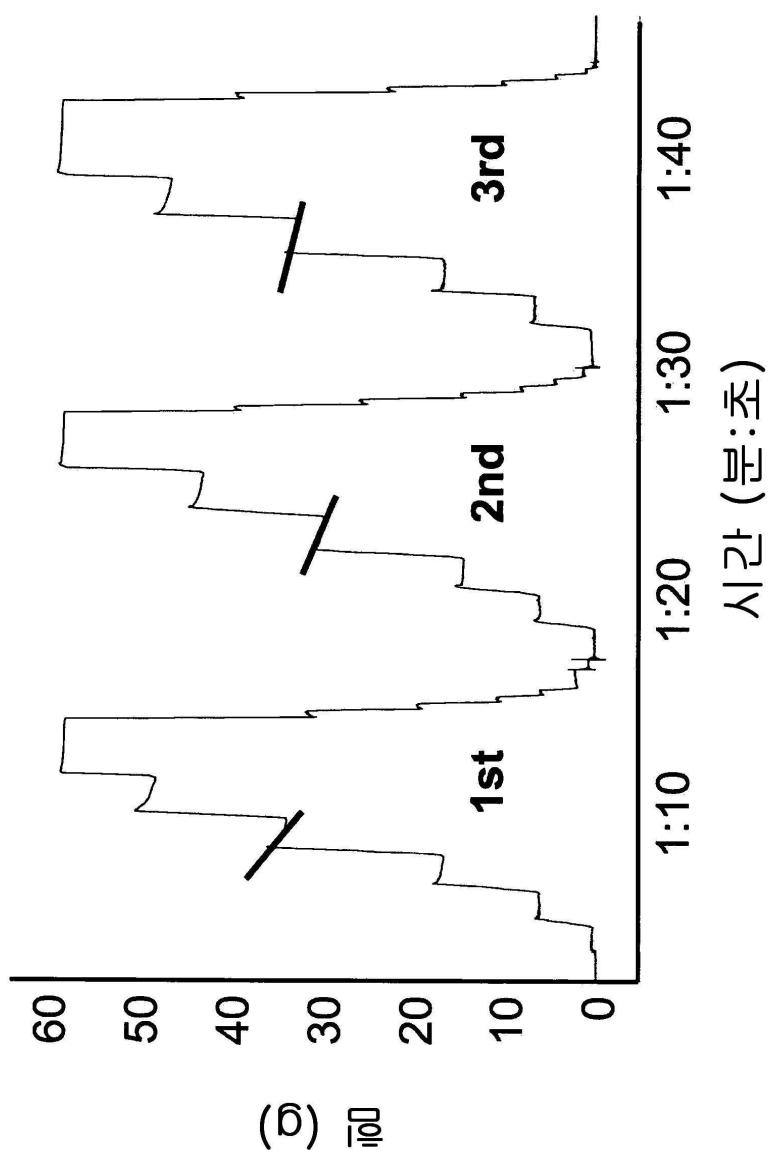
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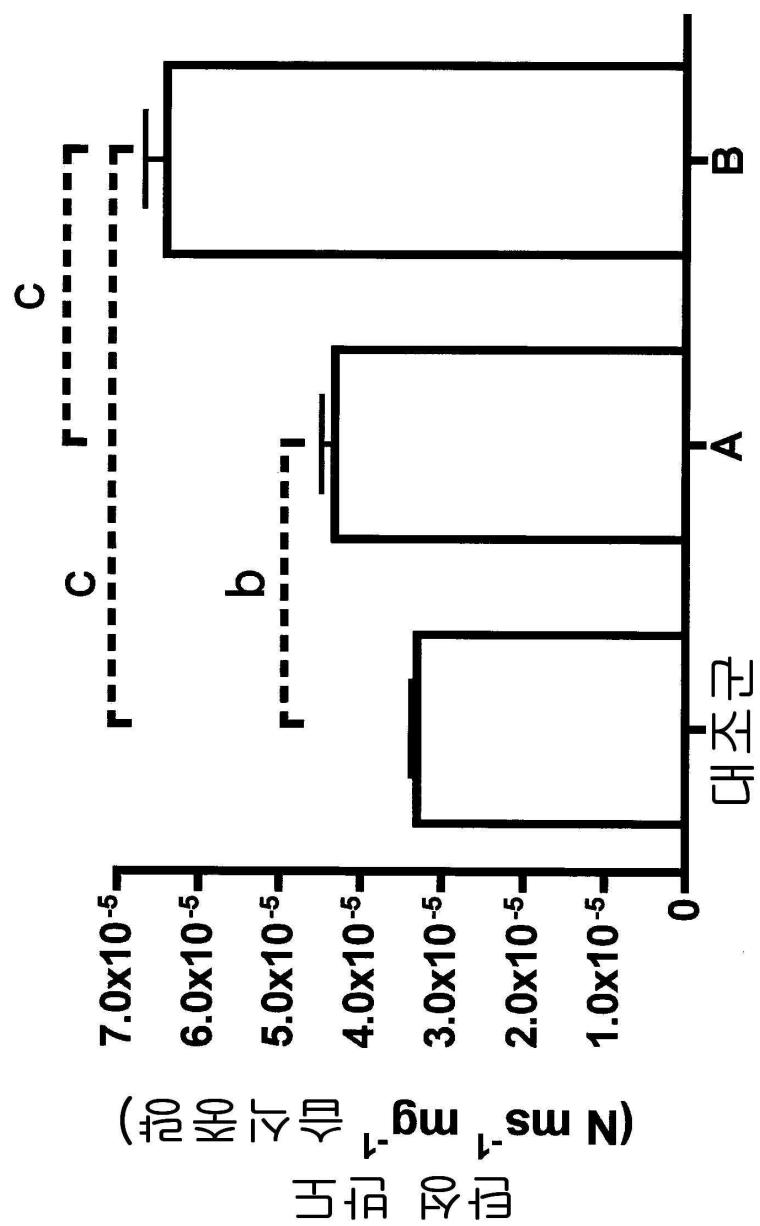


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