

## REFERENCES

### THAI

- กนกพร กวีวัฒน์, ยุทธนา สมิตะสิริ และ วรณัธนา ชนนไทย. 2537. ผลของสารสกัดจากพืชสมุนไพรต่อการสืบพันธุ์ของหนูขาวเพศเมีย. การประชุมวิชาการวิทยาศาสตร์และเทคโนโลยีแห่งประเทศไทยครั้งที่ 20. 19-21 ตุลาคม 2537 ณ บางกอกคอนเวนชัน เซ็นเตอร์ เซ็นทรัล. กรุงเทพฯ. 13-14.
- เต็ม สมิตินันท์. 2523. ชื่อพฤกษศาสตร์ : ชื่อพื้นเมือง. ชื่อพันธุ์ไม้แห่งประเทศไทย. กรุงเทพฯ: หจก. ฟินนี่พับลิชชิง. 280.
- ทรงพล ชีวะพัฒน์, ปราณี ขวลิตร่าง, สดุดี รัตนจรัสโรจน์, อัญชลี จุฑะพุทธิ, และสมเกียรติ ปัญญามัง. 2543. การศึกษาพิษกึ่งเรื้อรังของกวางเครือขาว. วารสารกรมวิทยาศาสตร์การแพทย์. 42: 202-203.
- พูลศิลป์ ไวทยะโชติ, กิตตินันท์ นิवासบุตร, และยุทธนา สมิตะสิริ. 2530. การศึกษาเบื้องต้นเกี่ยวกับกวางขาวในลูกสุนัข. การประชุมวิชาการวิทยาศาสตร์และเทคโนโลยีแห่งประเทศไทย ครั้งที่ 13. 20-22 ตุลาคม 2530 ณ มหาวิทยาลัยสงขลานครินทร์: 498.
- ยุทธนา สมิตะสิริ, เสรี แบ่งจิตต์, และสมบูรณ์ อนันตลาโภชัย. 2532. การยับยั้งการให้นมในหนูที่กำลังให้นมด้วยกวางขาวเปรียบเทียบกับเฮลโดรเจน. วารสารคณะวิทยาศาสตร์ มหาวิทยาลัยเชียงใหม่. 6: 7-11.
- ยุทธนา สมิตะสิริ. 2541. ภาพรวมงานวิจัยและพัฒนา กวางเครือขาวตั้งแต่อดีต (พ.ศ. 2524) ถึงปัจจุบัน. (พ.ศ. 2541). ใน เอกสารประกอบการสัมมนาวิชาการเรื่องกวางเครือ. 1 ธันวาคม 2541 ณ ตึกกรมการแพทย์ กระทรวงสาธารณสุข: 13-27.
- วารภรณ์ พงษ์คำ, ยุทธนา สมิตะสิริ, สุรพงษ์ อุดมพันธ์, และวีระ วงษ์คำ. 2530. ผลของกวางขาวต่อเม็ดเลือดของหนูขาวเพศผู้. การประชุมวิชาการวิทยาศาสตร์และเทคโนโลยีแห่งประเทศไทย ครั้งที่ 13. 20-22 ตุลาคม 2530 ณ มหาวิทยาลัยสงขลานครินทร์: B71.

วันชัย ดีเอกนามกุล และชาติ ทองเรือง. 2544. รายงานการศึกษาเรื่องสถานภาพการวิจัยและพัฒนากวาวเครือในประเทศไทยและสิ่งที่จะต้องดำเนินการวิจัย. 18 มกราคม 2544 ณ อาคารสำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ: 10-22.

สมภพ ประธานธรรารักษ์ นพมาศ สุนทรเจริญนนท์, วงศ์สถิตย์ ฉั่วกุล และ พร้อมจิต ศรีลัมพ์. 2543. การศึกษาทางพฤกษศาสตร์และเคมีของกวาวเครือขาว. บทคัดย่อในเอกสารประกอบการสัมมนาแนวทางการพัฒนาสมุนไพรไทย สำนักงานคณะกรรมการวิจัยแห่งชาติ 13-14 กย. 2543. กรุงเทพฯ. 40.

หลวงอนุสารสุนทร. ตำรายาหัวกวาวเครือ. เชียงใหม่: โรงพิมพ์อุปติพงษ์, 2474. อ้างถึงใน ยุทธนา สมิตะสิริ. 2541. ภาพรวมงานวิจัยและพัฒนากวาวเครือขาวตั้งแต่อดีต (พ.ศ. 2524) ถึงปัจจุบัน (พ.ศ. 2541). ในเอกสารประกอบการสัมมนาวิชาการเรื่องกวาวเครือ. 1 ธันวาคม 2541 ณ ตึกกรมการแพทย์ กระทรวงสาธารณสุข.: 13-27.

อารี ช่วยชู, อุดร จรรยาธรรม, สมบูรณ์ อนันตลาโภชัย และ ยุทธนา สมิตะสิริ. 2529. พิษของกวาวเครือขาวต่ออณูกระทาพันธุ์ ญี่ปุ่น. วารสารคณะวิทยาศาสตร์ มหาวิทยาลัยเชียงใหม่. 11: 46-53.

อำพา เหลืองภิรมย์ และ ชุติมา หาญจวนิช. 2541. การศึกษาผลของสารสกัดหัวกวาวเครือต่อน้ำหนักตัว อวัยวะสืบพันธุ์ ต่อมใต้สมอง การหลั่งน้ำนม และการฝังตัวของตัวอ่อนในหนูขาวใหญ่. ภาควิชาชีววิทยา. มหาวิทยาลัยขอนแก่น.

## ENGLISH

Anderson J. W., Johnstone, B. M. and Cooknewell, M. E. 1995. Meta-Analysis of the effects of soy protein intake on serum lipids. New Eng J Med. 333: 276-282.

AFIC. 2002. Focus on women's health and diet. Food safety and nutrition. 15: 1-3.

- Anthony, M. S. and Clarkson, T.B. 1997. Phytoestrogens benefit the heart. National Osteoporosis Society. 1-3.
- Anthony, M. S., Clarkson, T.B, Bullock, B.C. and Wagner, J.D. 1997. Soy protein versus soy phytoestrogens in the prevention of diet-induced coronary artery atherosclerosis of male cynomolgus monkeys. Arteriosclerosis, Thrombosis and vascular biology. 17: 2524-2531.
- Badimon, J. J., Fuster, V., Chesebro, J. H., Badimon, L. 1993. Coronary atherosclerosis, a multifactorial disease. Circulation. 87(Suppl III) : II-3 - II-16.
- Benson, G.K., Cowie, A. T. and Hosking, Z. D., J. Endocrin. (in the press).
- Bjarnason, H.N., Haarbo, J., Byrjalsen, I., Kauffman, R. F. and Christiansen, C. 1997. Raloxifene inhibits aortic accumulation of cholesterol in ovariectomized, cholesterol-fed rabbits. Circulation. 96:1964-1969.
- Binko, J. and Majewski, H. 1998. 17 $\beta$ -estradiol reduces vasoconstriction in endothelium-denuded rat aortas through inducible NOS. Am J Physiol. 274: H853-H859.
- Boulangier, C. and Luscher, T.F. 1990. Release of endothelin from the porcine aorta: inhibition by endothelium-derived nitric oxide. J. Clin. Invest. 85: 587-590.
- Cain, C. J. 1960. Miroestrol: an estrogen from the plant *Pueraria mirifica*. Nature. 188: 774-777.

- Catania, M.A., Crupi, A., Firenzuoli, F., Parisi, A., Sturiale, A., Squadrito, F., Caputi, A. P. and Calapai, G. 2002. Oral administration of a soy extract improves endothelial dysfunction in ovariectomized rats. Planta Med. 68: 1142-1144.
- Chansakaow, S., Ishikawa, T., Seki, H., Sekine, K., Okada, M., and Chaichantipyuth, C. 2000a. Identification of deoxymiroestrol as the actual rejuvenating principal of “Kwao Keur”, *Pueraria mirifica*. The known miroestrol may be an artifact. J. Natural. Products. 63: 173-175.
- Chansakaow, S., Ishikawa, T., Sekine, K., K., Okada, M., Higuchi, Y., Kudo, M., and Chaichantipyuth, C. 2000b. Isoflavonoids from *Pueraria mirifica* and their estrogenic activity. Planta. Med. 66: 572-575.
- Clarkson, T.B., Cline, J.M. Williams, J.K. and Anthony, M.S. 1998. Gonadal hormones substitutes: effects on the cardiovascular system. Osteoporosis. 1: s43-s51.
- Clarkson, T.B. and Anthony, M.S. 1998. Phytoestrogens and coronary heart disease. Baillieres Clin Endocrinol Metab. 12: 589-604.
- Clarkson, T.B., Morgan, T.M. and Anthony, M.S. 2001. Inhibition of postmenopausal atherosclerosis progression : A comparison of the effects of conjugated equine estrogens and soy phytoestrogens. Baillieres Clin Endocrinol Metab. 86: 41-47.
- Draco, N. P. 2000. Phytoestrogens. Natural products. 3 : 1.
- Furchgott, R.F. and Zawadzki, J.V. 1980. The obligatory role of endothelial cells in the relaxation of the arterial smooth muscle by the acetylcholine. Nature. 288: 373-376.

- Harrison, G.B. Armstrong, M.L., Freiman, C. P. and Heistad, D. D. 1987. Restoration of endothelium-dependent relaxation by dietary treatment of atherosclerosis. J Clin Invest. 1987: 1808-1811.
- Habib, J.B., Bossaller, C., Wells, S., Williams, C. and Henry, P. D. 1986. Preservation of endothelium-dependent vascular relaxation in cholesterol-fed rabbit by treatment with the calcium blocker PN 200110. Circ Res. 58: 305-309.
- Harberl M.E., Frong, D. and Cheng, L. 1990. Malondialdehyde, modified lipoproteins and atherosclerosis. Eur Heart J. 11: 100-104.
- Hollenberg, N. K. 1991. Implications of thrombosis and vasospasm in peripheral vascular disease. J Cardiovasc Pharmacol. 17: s21- s28.
- Holm, P., Korsgaard, N., Shalmi, M., Andersen, H.L., Hougaard, P., Skouby, S.O. and Stender, S. 1997. Significant reduction of the antiatherogenic effect of estrogen by long-term inhibition of nitric oxide synthesis in cholesterol-clamped rabbits. J Clin Invest. 100: 821-828.
- Jones, H.E. H. and Hope, G. S. 1960. Miroestrol and phytoestrogens. J Endocrin. 229.
- Keaney, J.F., Losecalzo, J., Gaziano, J. M. and Vita, J.A. 1994. Low-dose  $\alpha$ -tocopherol improves and high-dose  $\alpha$ -tocopherol worsens endothelial vasodilator function in cholesterol-fed rabbits. J Clin Invest. 93: 844-851.
- Knight, D. C., and Eden, J. A. 1996. A review of the clinical effects of phytoestrogens. Obstet. Gynecol. 87: 897-904.

- Kuiper, G. G., Lemmen, J. G., Carisson, B., Carton, J. C., Safe, S. H., Saag, P. T., Burg, B., and Gustafsson, J. 1998. Interaction of estrogenic of estrogenic chemicals and phytoestrogens with estrogen receptor  $\beta$ . Endocrinology. 139: 4252-4263.
- Minor, R.L., Myers, P.R., Guerra, R. and Harrison, D. 1990. Diet-induced atherosclerosis increases the release of nitrogen oxides from rabbit aorta. J Clin Invest. 86: 2109-2116.
- Moncada, S and Higgs, E.A. 1993. Biosynthesis of nitric oxide from L-arginine: pathway for the regulation of cell function and communications. Biochem. Pharmacol. 11: 1709-1715.
- Murkies, A.L., Wilcox, G. and Davis, S. R. 1998. Clinical review phytoestrogens. J.Clin Endocrinol Metab. 83: 12525-12530.
- Natio, M., Hayashi, T. and Iguchi, A. 1995. New approaches to the prevention of atherosclerosis. Drugs. 50: 440-453.
- Nestel, P.J., Yamachita, T. and Pomeroy, S. 1997. Soy isoflavones improve systemic arterial compliance but not plasma lipids in menopausal and perimenopausal women. Arterioscler Thromb Vasc Biol. 17: 3392-3398.
- Phivthong-ngam. 1997. Role of nitric oxide in the pathogenesis of cholesterol-induced atherosclerosis in rabbits. Doctoral dissertation, Hannover Medical School, Germany. 1-131.
- Potter, S.M., Baum, J.A., Teng, H., Stillman, R.J., Shay, N.F. and Erdman, J.W. 1998. Soy protein and isoflavones. Am J Clin Nutr. 69: 1375s-1379s.

- Prieto, J., Betty, P.G., Clark, E.A. and Patarroyo, M. 1988. Molecules mediating adhesion of T- and B-cells, monocytes and granulocytes to vascular endothelial cells. Immunology. 63: 631-637.
- Rajan, R. and Kodikeri, P. R. 2003. Alternatives for hormone replacement for menopause. 1-5.
- Rahimian, R., Dube, G. and Cornelis, B. 1997. Estrogen and selective estrogen receptor modulator LY117018 Enhance release of nitric oxide in rat aorta. J Pharmacol Exp. Ther. 283: 116-122.
- Ratanachamong, P., Apisariyakul, A. Phivthong-ngam, L. and Sanvarind, Y. 2000. Antioxidative effects of *Pueraria mirifica* in cholesterol-fed rabbits. Mahidol University. 1-90.
- Ross, R. 1993. The pathogenesis of atherosclerosis : a perspective for the 1990s. Nature. 362: 801-809.
- Sahelian, R. 2001. Phytoestrogens isoflavones. Phytoestrogens. 40: 1-2.
- Schoeller, W. Dohrn, M. and Hohweg, W. 1940. Naturwiss. 28: 532.
- Smitasiri, Y., Junyatum, U., Songjitsawad, A., Sripromma, P. Trissirilp S. and Annatalabhochai S. 1986. Postcoital antifertility effects of *Pueraria mirifica* in rats. The 11<sup>th</sup> Conference of science and technology of Thailand, 24-26 October 1985. Kasetsart University, Bangkok, Thailand.
- Sellke, F.W., Armstrong, M.L., Harrison, D.G. 1990. Endothelium - dependent vascular relaxation is abnormal in the coronary microcirculation of atherosclerotic primates. Circulation. 81: 1586-1593.

- Setchell, K.D. 1998. Phytoestrogens: the biochemistry, physiology, and implications for human health of soy isoflavones. Am. J. Clin. Nutr. 68 (Suppl): 333S-346S.
- Steinberg, D., Parthasarathy, S., Carew, T.E., Khoo, J.C. and Witztum, J.L. 1989. Beyond cholesterol: modification of low-density lipoprotein that increase its atherogenicity. N Eng J Med. 320: 915-924.
- Sun, J., Tan, B.K., Huang, S.H., Whiteman, M. and Zhu, Y.Z. 2002. Effects of natural products on ischemic heart diseases and cardiovascular system. Acta Pharmacol Sin. 23: 1142-1151.
- Tikkanen, M.J. and Adlercreutz, H. 2000. Dietary soy-derived isoflavone phytoestrogens. Could they have a role in coronary heart disease prevention? Biochem. Pharmacol. 60: 1-5.
- Tikkanen, M.J. Wahala, K., Ojala, S., Vihma, V. and Adlercreutz, H. 1998. Effect of soybean phytoestrogens intake on low density lipoprotein oxidation resistance. Proc Natl Acad Sci. 95: 3106-3110.
- Toda, T., Uesugi, T., Hirai, K., Nukaya, H., Tsuji, K., and ishida, H. 1999. New 6-O-acyl isoflavone glycoside from soybeans fermented with *Bacillus subtilis* (natto). I. 6-O succinylated isoflavone glycoside and their preventive effects on bone loss in ovariectomized rats fed a calcium-deficient diet. Biol. Pharm.Bull. 22: 1193-1201.
- Virginia, M. M. and Vanhoutte. P.M. 1990. 17 $\beta$ -estradiol augments endothelium-dependent contractions to arachidonic acid in rabbit aorta. Am. J. Physiol. 258: R1502-R1507.



Wiseman, H., and Duffy, R. 2001. New advances in the understanding of the role of steroids and steroids receptors in disease. Biochem. Soc. Trans. 29: 205-208.

Witztum, J.L. and Steinberg, D. 1991. Role of oxidized low density lipoprotein in atherogenesis. J Clin Invest. 88: 1785-1792.

## **APPENDIX**

Body weight of Rats Control group( g )

CODE	Week 0	Week 2	Week 4	Week 6	Week 8	Week 10	Week 12
1A	206	297	360	395	444	459	495
2A	269	323	363	388	424	335	468
3A	282	366	413	427	471	466	508
4A	213	312	366	370	411	428	463
5A	331	379	405	415	452	460	494
6A	257	327	354	375	387	409	415
7A	271	348	371	411	436	446	449
8A	284	332	339	371	392	410	417
9A	361	341	344	387	409	440	448
10A	376	417	442	463	485	485	454
MEAN	285.00	344.20	375.70	400.20	431.10	433.80	461.10
SD	56.61	35.23	33.32	29.34	32.56	42.35	31.48
SE	17.90	11.14	10.54	9.28	10.30	13.39	9.96

Body weight of Rats Cholesterol group( g )

CODE	Week 0	Week 2	Week 4	Week 6	Week 8	Week 10	Week 12
1B	220	313	385	437	489	500	512
2B	282	340	382	395	438	452	480
3B	275	377	426	436	472	485	506
4B	338	368	421	427	465	490	520
5B	305	353	384	392	417	440	460
6B	259	315	351	389	403	429	425
7B	273	337	368	416	438	445	445
8B	307	353	367	406	425	435	444
9B	341	391	408	451	475	502	520
10B	339	370	423	428	469	472	413
MEAN	293.90	351.70	391.50	417.70	449.10	465.00	472.50
SD	39.59	25.79	26.47	21.47	28.71	28.00	40.51
SE	12.52	8.16	8.37	6.79	9.08	8.86	12.81

Body weight of Rats Cholesterol+Kw group( g )

CODE	Week 0	Week 2	Week 4	Week 6	Week 8	Week 10	Week 12
1D	231	263	270	274	304	310	324
2D	314	302	339	340	353	372	371
3D	284	292	323	338	349	354	358
4D	308	257	309	321	320	338	350
5D	313	258	323	420	341	368	377
6D	279	281	295	338	351	373	361
7D	305	333	350	366	373	399	394
8D	315	355	365	399	417	429	436
9D	315	298	307	329	321	363	333
10D	314	205	292	334	362	356	483
MEAN	297.80	284.40	317.30	345.90	349.10	366.20	378.70
SD	26.89	42.32	28.73	40.95	31.80	32.18	48.42
SE	8.50	13.38	9.09	12.95	10.06	10.18	15.31

Cholesterol ,Triglyceride,HDL and LDL of Rats Control group ( mg/dl )

CODE	Total Cholesterol	Triglyceride	HDL-C	LDL-C	HDL/LDL ratio
1A	53.00	61.00	65.00	9.00	7.22
2A	49.00	49.00	63.00	6.00	10.50
3A	60.00	42.00	-	-	-
4A	63.00	98.00	75.00	7.00	10.71
5A	66.00	94.00	87.00	9.00	9.67
6A	71.00	58.00	91.00	9.00	10.11
7A	81.00	108.00	96.00	10.00	9.60
8A	57.00	45.00	72.00	6.00	12.00
9A	76.00	76.00	81.00	9.00	9.00
10A	68.00	95.00	78.00	7.00	11.14
MEAN	64.40	72.60	78.67	8.00	10.00
SD	10.07	24.66	11.28	1.50	1.37
SE	3.18	7.80	3.76	0.50	0.46

Cholesterol ,Triglyceride,HDL and LDL of Rats Cholesterol group ( mg/dl )

CODE	Total Cholesterol	Triglyceride	HDL-C	LDL-C	HDL/LDL ratio
1B	120.00	53.00	73.00	82.00	0.89
2B	114.00	46.00	108.00	79.00	1.37
3B	105.00	42.00	50.00	99.00	0.51
4B	68.00	37.00	72.00	33.00	2.18
5B	104.00	68.00	80.00	67.00	1.19
6B	-	-	-	-	-
7B	120.00	69.00	97.00	92.00	1.05
8B	-	-	-	-	-
9B	73.00	56.00	70.00	45.00	1.56
10B	-	-	-	-	-
MEAN	100.57	53.00	78.57	71.00	1.25
SD	21.56	12.36	19.03	24.31	0.53
SE	8.15	4.67	7.19	9.19	0.20

Cholesterol ,Triglyceride,HDL and LDL of Rats Cholesterol+Kw group ( mg/dl )

CODE	Total Cholesterol	Triglyceride	HDL-C	LDL-C	HDL/LDL ratio
1D	13.00	28.00	11.00	8.00	1.38
2D	37.00	45.00	41.00	10.00	4.10
3D	49.00	35.00	46.00	20.00	2.30
4D	40.00	46.00	37.00	24.00	1.54
5D	21.00	20.00	22.00	11.00	2.00
6D	60.00	37.00	58.00	28.00	2.07
7D	34.00	24.00	35.00	20.00	1.75
8D	39.00	20.00	43.00	16.00	2.69
9D	40.00	33.00	40.00	28.00	1.43
10D	66.00	47.00	113.00	2.00	56.50
MEAN	39.90	33.50	44.60	16.70	7.58
SD	15.96	10.38	27.26	8.82	17.21
SE	5.05	3.28	8.62	2.79	5.44



Percent contraction on isolated aorta in high cholesterol-fed rats (Control group) by NA

จำนวน ทดลองที่ (n)	% Contraction					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	2.56	12.82	84.62	100.00	130.77	128.21
2	8.26	23.97	62.81	100.00	119.83	125.62
3	27.27	36.36	54.55	100.00	115.15	136.36
4	25.00	42.86	60.71	100.00	128.57	153.57
5	50.84	63.13	82.12	100.00	102.79	103.35
6	75.68	95.95	98.65	100.00	102.70	104.05
7	82.73	96.36	106.36	100.00	101.82	103.64
8	0.00	0.00	66.67	100.00	141.03	100.00
9	8.74	8.74	33.01	100.00	111.65	111.65
10	8.20	20.49	72.13	100.00	107.38	90.16
11	31.31	38.38	72.73	100.00	104.04	97.98
12	57.58	21.21	15.15	100.00	178.79	163.64
13	73.44	78.13	92.19	100.00	112.50	115.63
14	78.95	88.42	93.68	100.00	103.16	105.26
15	70.54	86.82	91.47	100.00	95.35	75.97
<b>MEAN</b>	<b>40.07</b>	<b>47.58</b>	<b>72.46</b>	<b>100.00</b>	<b>117.04</b>	<b>114.34</b>
<b>SE</b>	<b>8.03</b>	<b>8.81</b>	<b>6.44</b>	<b>0.00</b>	<b>5.49</b>	<b>6.07</b>

Percent contraction on isolated aorta in high cholesterol-fed rats (Cholesterol group) by NA

จำนวน ทดลองที่ (n)	% Contraction					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	0.00	27.16	71.60	100.00	108.64	113.58
2	0.00	57.69	76.92	100.00	126.92	138.46
3	57.63	76.27	86.44	100.00	106.78	110.17
4	44.62	75.38	95.38	100.00	106.15	107.69
5	3.12	52.08	80.21	100.00	105.21	106.25
6	0.00	2.04	75.51	100.00	102.04	104.08
7	9.52	42.86	61.90	100.00	100.00	100.00
8	87.40	94.49	98.43	100.00	98.43	96.06
9	0.00	13.86	50.50	100.00	91.09	59.41
10	20.22	65.17	88.76	100.00	104.49	104.49
11	50.00	70.00	91.25	100.00	98.75	100.00
12	38.96	68.83	85.71	100.00	101.30	101.30
13	0.00	44.54	91.60	100.00	105.88	95.80
14	0.00	8.33	50.00	100.00	115.00	116.67
15	0.00	41.18	55.88	100.00	132.35	138.24
16	62.50	68.75	85.42	100.00	122.92	131.25
17	0.00	24.64	34.78	100.00	108.70	117.39
18	0.00	65.91	93.18	100.00	79.55	68.18
19	0.00	7.14	35.71	100.00	139.29	142.86
20	0.00	13.56	54.24	100.00	132.20	118.64
<b>MEAN</b>	<b>18.70</b>	<b>45.99</b>	<b>73.17</b>	<b>100.00</b>	<b>109.28</b>	<b>108.53</b>
<b>SE</b>	<b>6.15</b>	<b>6.17</b>	<b>4.50</b>	<b>0.00</b>	<b>3.33</b>	<b>4.69</b>

Percent contraction on isolated aorta in high cholesterol-fed rats (Cholesterol+Kw group) by NA

จำนวน ทดลองที่ (n)	% Contraction					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	6.67	10.00	56.67	100.00	136.67	160.00
2	0.00	37.50	62.50	100.00	100.00	87.50
3	61.90	66.67	76.19	100.00	100.00	114.29
4	17.78	31.11	53.33	100.00	80.00	60.00
5	6.90	41.38	65.52	100.00	124.14	120.69
6	11.36	22.73	56.82	100.00	113.64	106.82
7	9.09	23.86	78.41	100.00	107.95	105.68
8	3.51	8.77	77.19	100.00	114.04	110.53
9	14.71	20.59	55.88	100.00	94.12	58.82
10	18.18	27.27	75.00	100.00	88.64	63.64
11	63.75	78.75	95.00	100.00	105.00	107.50
12	1.22	19.51	78.05	100.00	109.76	110.98
13	9.68	50.00	74.19	100.00	112.90	106.45
14	6.25	16.67	39.58	100.00	222.92	231.25
15	7.41	59.26	83.95	100.00	97.53	97.53
16	27.63	72.37	90.79	100.00	101.32	96.05
17	18.18	31.82	70.45	100.00	118.18	122.73
18	21.43	30.95	73.81	100.00	123.81	126.19
19	49.09	52.73	81.82	100.00	114.55	125.45
20	9.09	27.27	72.73	100.00	81.82	109.09
21	0.00	23.08	76.92	100.00	119.23	134.62
22	47.17	62.26	79.25	100.00	118.87	137.74
23	28.36	56.72	74.63	100.00	119.40	117.91
24	55.56	66.67	116.67	100.00	111.11	105.56
25	65.85	73.17	92.68	100.00	112.20	92.68
26	56.45	66.13	83.87	100.00	119.35	132.26
27	20.59	23.53	41.18	100.00	182.35	220.59
28	58.93	62.50	84.82	100.00	108.04	109.82
29	26.00	40.00	80.00	100.00	106.00	94.00

30	18.42	23.68	64.91	100.00	111.91	121.93
31	5.68	56.82	82.95	100.00	108.52	111.36
32	0.00	13.21	79.25	100.00	92.45	69.81
33	0.85	5.93	70.34	100.00	94.07	76.27
34	18.33	28.33	76.67	100.00	128.33	141.67
35	5.49	46.15	86.81	100.00	114.29	118.68
36	21.74	80.43	84.78	100.00	100.00	102.17
37	34.85	67.68	86.87	100.00	105.56	103.54
38	34.55	79.39	94.55	100.00	110.30	107.27
39	4.93	44.83	87.68	100.00	106.40	106.40
40	4.41	8.82	35.29	100.00	123.53	110.29
41	63.16	23.68	44.74	100.00	110.53	63.16
42	70.45	63.64	90.91	100.00	111.36	86.36
43	72.31	82.31	93.08	100.00	103.85	96.92
44	75.00	84.88	94.19	100.00	98.26	98.84
45	7.50	22.50	75.00	100.00	97.50	95.00
46	25.00	33.93	71.43	100.00	105.36	101.79
47	20.31	43.75	84.38	100.00	98.44	106.25
48	71.43	80.95	85.71	100.00	90.48	114.29
49	33.33	96.67	56.67	100.00	126.67	113.33
50	13.43	46.27	71.64	100.00	92.54	104.48
51	14.29	11.11	87.30	100.00	88.89	106.35
<b>MEAN</b>	26.21	44.08	75.55	100.00	111.09	110.25
<b>SE</b>	3.29	3.43	2.22	0.00	3.16	4.36

Percent relaxation on isolated aorta in high cholesterol-fed rats (Control group) by Ach

จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	0.00	45.65	54.35	80.43	97.83	100.00
2	12.28	64.91	71.93	80.70	96.49	100.00
3	0.00	0.00	3.45	37.93	72.41	74.71
4	3.92	27.45	35.29	64.71	66.67	70.59
5	6.25	39.58	47.92	77.08	100.00	100.00
6	10.23	54.55	87.50	94.32	96.59	82.95
7	20.93	80.23	96.51	96.51	84.88	84.88
8	1.61	9.68	72.58	82.26	83.87	90.32
9	0.00	20.00	63.33	90.00	100.00	90.00
10	6.45	22.58	38.71	51.61	64.52	74.19
11	0.00	13.95	34.88	51.16	63.95	67.44
12	0.00	13.75	38.75	67.50	72.50	81.25
<b>MEAN</b>	<b>5.14</b>	<b>32.69</b>	<b>53.77</b>	<b>72.85</b>	<b>83.31</b>	<b>83.25</b>
<b>SE</b>	<b>1.90</b>	<b>7.07</b>	<b>7.52</b>	<b>5.35</b>	<b>4.23</b>	<b>3.35</b>

Percent relaxation on isolated aorta in high cholesterol-fed rats (Cholesterol group) by Ach

จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	0.00	0.00	33.33	77.78	68.89	71.11
2	0.00	30.00	60.00	100.00	100.00	100.00
3	0.00	4.76	4.76	19.05	28.57	28.57
4	0.00	4.17	15.83	22.50	25.00	26.67
5	0.00	20.59	70.59	89.71	97.06	98.53
6	0.00	6.15	36.92	44.62	72.31	69.23
7	0.00	0.00	15.79	22.37	25.00	27.63
8	0.00	2.50	37.50	52.50	52.50	57.50
9	0.00	10.20	19.73	35.37	41.50	30.61
10	0.00	0.00	49.50	81.19	81.19	81.19
11	0.00	0.00	1.22	2.44	10.98	13.41
12	0.00	38.46	47.69	66.15	76.92	73.85
13	14.81	40.74	44.44	62.96	70.37	88.89
14	8.45	22.54	67.61	100.00	91.55	67.61
15	0.00	11.69	16.88	22.08	24.68	19.48
16	0.00	10.81	24.32	35.14	35.14	33.78
17	1.11	10.00	27.78	32.22	38.89	35.56
18	0.00	12.82	28.21	33.33	35.90	26.92
19	0.00	51.91	77.05	83.06	83.61	63.93
20	0.00	0.00	54.49	65.38	75.64	70.51
21	9.33	18.00	43.33	54.00	52.00	50.00
22	0.00	6.32	18.95	42.11	49.47	49.47
23	0.00	0.00	26.61	50.46	54.13	52.29
<b>MEAN</b>	<b>1.47</b>	<b>13.12</b>	<b>35.76</b>	<b>51.93</b>	<b>56.14</b>	<b>51.67</b>
<b>SE</b>	<b>0.81</b>	<b>3.07</b>	<b>4.34</b>	<b>5.74</b>	<b>5.42</b>	<b>5.05</b>

Percent relaxation on isolated aorta in high cholesterol-fed rats (Cholesterol+Kw group) by Ach

จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	21.74	30.43	56.52	73.91	82.61	100.00
2	0.00	0.00	0.00	56.25	62.50	68.75
3	0.00	9.09	3.03	57.58	74.24	75.76
4	9.38	37.50	78.13	93.75	100.00	93.75
5	0.00	0.00	82.64	88.89	90.97	88.19
6	2.38	7.14	33.33	57.14	100.00	95.24
7	0.00	0.00	34.33	50.75	59.70	59.70
8	0.00	2.86	35.24	61.90	66.67	59.05
9	0.00	4.76	30.95	57.14	60.71	54.76
10	23.94	74.65	91.55	100.00	95.77	91.55
11	24.32	62.16	89.19	100.00	97.30	81.08
12	15.79	46.05	61.84	68.42	68.42	64.47
13	0.00	10.67	42.67	68.00	70.67	65.33
14	0.00	6.67	32.00	52.00	54.67	54.67
15	15.38	19.23	42.31	65.38	84.62	76.92
16	0.00	8.00	16.00	76.00	84.00	92.00
17	1.35	13.51	45.95	75.68	95.95	100.00
18	29.17	37.50	61.11	81.94	94.44	100.00
19	0.00	21.58	55.40	89.21	93.53	92.09
20	12.07	47.41	73.28	76.72	76.72	74.14
21	2.86	8.57	18.57	31.43	55.71	100.00
22	28.85	75.00	98.08	92.31	100.00	78.85
23	0.00	6.06	57.58	86.36	100.00	96.97
24	0.00	5.67	72.68	92.78	95.36	90.72
25	0.86	0.00	43.10	91.38	100.00	87.93
26	0.00	6.03	36.21	68.97	80.17	68.10
27	36.36	50.00	86.36	95.45	95.45	100.00
28	5.00	55.00	95.00	100.00	100.00	100.00
MEAN	8.19	23.06	52.61	75.33	83.58	82.50
SE	2.16	4.51	5.23	3.41	2.96	2.94

Percent relaxation on isolated aorta in high cholesterol-fed rats (Control group) by SNP

จำนวน	% Relaxation					
ทดลองที่ (n)	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	81.41	85.26	91.67	95.51	95.51	100.00
2	63.46	67.31	78.85	82.69	84.62	100.00
3	8.89	55.56	81.11	93.33	93.33	100.00
4	0.00	25.13	79.14	88.77	98.40	100.00
5	17.16	61.27	90.20	98.04	99.02	100.00
6	12.37	43.30	83.51	88.66	100.00	100.00
7	3.39	21.19	83.90	96.61	95.76	100.00
8	0.00	0.00	58.25	83.50	100.00	100.00
9	63.64	91.48	99.43	100.00	100.57	100.00
10	16.72	37.01	71.04	92.54	97.31	100.00
11	0.00	51.79	77.68	94.64	92.86	100.00
12	8.36	44.40	74.36	93.59	95.09	100.00
13	75.78	93.75	91.41	98.44	99.22	100.00
14	57.25	72.46	78.26	84.06	94.93	100.00
15	73.00	92.00	98.00	98.00	103.00	100.00
<b>MEAN</b>	<b>32.09</b>	<b>56.13</b>	<b>82.45</b>	<b>92.56</b>	<b>96.64</b>	<b>100.00</b>
<b>SE</b>	<b>8.31</b>	<b>7.32</b>	<b>2.77</b>	<b>1.48</b>	<b>1.14</b>	<b>0.00</b>



Percent relaxation on isolated aorta in high cholesterol-fed rats (Cholesterol group) by SNP

จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	0.00	49.45	79.12	86.81	94.51	94.51
2	5.00	41.67	51.67	75.00	86.67	100.00
3	4.48	46.27	88.06	94.03	95.52	100.00
4	0.00	19.01	80.17	96.69	96.69	100.00
5	14.47	75.00	92.11	98.68	98.68	100.00
6	7.69	42.31	86.54	96.15	100.00	100.00
7	27.36	63.21	83.02	96.23	96.23	100.00
8	0.00	16.00	58.00	76.00	88.00	100.00
9	0.00	19.46	84.32	97.30	100.00	97.84
10	0.00	6.12	49.66	84.35	96.60	100.00
11	0.00	80.72	95.18	98.80	100.00	100.00
12	23.71	86.60	94.85	96.91	96.91	100.00
13	7.77	37.86	78.64	96.12	97.09	100.00
14	39.73	92.47	94.52	100.00	97.26	96.58
15	58.70	94.20	97.10	100.00	96.38	99.28
16	0.00	17.50	66.25	93.75	97.50	100.00
17	6.76	52.70	93.24	98.65	98.65	100.00
18	7.86	15.71	59.29	87.86	95.71	100.00
19	5.15	25.77	63.92	94.85	100.00	100.00
20	48.47	70.41	94.90	95.41	97.45	100.00
21	0.00	51.20	86.75	93.37	98.19	100.00
22	92.12	94.55	94.55	100.00	98.79	97.58
23	88.89	94.74	98.25	98.83	100.00	99.42
24	75.88	82.46	84.21	82.46	100.00	91.23
<b>MEAN</b>	<b>21.42</b>	<b>53.14</b>	<b>81.43</b>	<b>93.26</b>	<b>96.95</b>	<b>99.02</b>
<b>SE</b>	<b>6.07</b>	<b>6.04</b>	<b>3.09</b>	<b>1.49</b>	<b>0.69</b>	<b>0.44</b>

Percent relaxation on isolated aorta in high cholesterol-fed rats (Cholesterol+Kw group) by SNP

จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	0.85	4.27	29.91	76.92	94.02	100.00
2	0.00	2.94	26.47	77.94	89.71	100.00
3	0.00	7.07	35.35	84.85	96.97	100.00
4	0.00	6.82	44.32	87.50	97.73	100.00
5	18.18	63.64	84.42	89.61	97.40	100.00
6	12.50	73.61	91.67	95.83	98.61	100.00
7	16.25	66.25	83.75	87.50	95.00	100.00
8	0.00	0.00	52.63	84.21	89.47	100.00
9	0.00	26.42	56.60	90.57	94.34	100.00
10	62.86	81.43	91.43	94.29	100.00	98.57
11	40.43	72.34	93.62	97.87	97.87	100.00
12	19.51	57.32	65.85	91.46	97.56	100.00
13	5.97	53.73	88.06	95.52	98.51	100.00
14	0.00	92.98	96.49	99.12	100.88	100.00
15	0.00	90.70	94.19	96.51	95.35	100.00
16	73.33	93.33	96.67	96.67	100.00	100.00
17	2.97	39.60	85.15	99.01	97.03	100.00
18	17.33	76.00	100.00	100.00	100.00	97.33
19	6.25	65.00	95.00	100.00	100.00	97.50
20	82.11	93.68	97.89	98.95	98.95	100.00
21	0.00	32.63	93.68	100.00	100.00	100.00
22	0.00	42.35	89.41	96.47	100.00	95.29
23	0.00	21.67	53.33	86.67	95.00	100.00
24	1.69	6.78	40.68	74.58	86.44	93.22
25	10.81	40.54	64.86	82.43	87.84	100.00
26	35.90	74.36	87.18	92.31	100.00	100.00
27	37.50	50.00	62.50	62.50	75.00	100.00
28	4.55	43.94	72.73	86.36	92.42	100.00
29	8.51	53.19	80.85	91.49	100.00	91.49
30	20.00	26.67	33.33	80.00	86.67	100.00

31	66.13	72.58	85.48	93.55	96.77	100.00
32	61.62	69.70	79.80	89.90	96.97	100.00
33	0.78	58.14	82.17	97.67	97.67	100.00
34	27.85	70.89	77.22	91.14	97.47	100.00
35	0.00	31.16	69.57	86.96	94.20	100.00
36	0.00	11.07	73.36	95.08	99.59	100.00
37	60.00	92.00	96.00	96.00	97.33	100.00
38	0.00	5.71	25.71	62.86	88.57	100.00
39	10.71	46.43	85.71	88.10	91.67	100.00
40	4.26	55.32	75.53	94.68	100.00	100.00
41	12.03	47.72	90.46	97.51	100.00	95.85
42	11.84	43.86	92.98	96.93	98.68	100.00
43	85.53	88.16	92.11	98.68	98.68	100.00
44	20.88	32.97	92.31	98.90	100.00	95.60
45	1.28	37.18	93.59	101.92	100.00	100.00
46	0.00	16.22	45.95	59.46	78.38	100.00
47	0.00	13.73	35.29	60.78	100.00	94.12
48	0.00	73.75	92.50	97.50	100.00	95.00
49	2.59	26.72	96.55	104.31	100.00	100.00
50	0.00	11.43	37.14	62.86	60.00	100.00
<b>MEAN</b>	<b>16.86</b>	<b>47.28</b>	<b>74.15</b>	<b>89.44</b>	<b>95.18</b>	<b>99.08</b>
<b>SE</b>	<b>3.44</b>	<b>4.04</b>	<b>3.24</b>	<b>1.62</b>	<b>1.06</b>	<b>0.29</b>

Body weight of Rabbits Control group( g )

Week	Baseline ( kg )	2	3	4	5	6	7	8	9	10	11	12
RAC1	3.55	3.77	3.85	4.00	3.95	4.10	4.50	4.30	4.45	4.40	4.60	4.65
RAC2	3.62	3.67	3.70	3.80	3.77	4.00	4.05	4.10	4.05	4.10	4.10	4.15
RAC3	3.72	3.87	3.90	3.95	4.05	4.25	4.30	4.35	4.40	4.45	4.50	4.52
RAC4	3.75	3.75	3.77	3.77	3.80	3.85	4.05	4.05	4.15	4.15	4.20	4.20
RAC5	3.32	3.50	3.45	3.40	3.40	3.52	3.60	3.60	3.65	3.65	3.70	3.65
MEAN	3.59	3.71	3.73	3.78	3.79	3.94	4.10	4.08	4.14	4.15	4.22	4.23
SD	0.17	0.14	0.18	0.24	0.25	0.28	0.34	0.30	0.32	0.32	0.36	0.39
SE	0.08	0.06	0.08	0.11	0.11	0.12	0.15	0.13	0.14	0.14	0.16	0.17

Body weight of Rabbits Ovariectomized group( g )

Week	Baseline ( kg )	2	3	4	5	6	7	8	9	10	11	12
RAO1	3.15	3.65	4.02	4.05	4.00	4.15	4.15	4.20	4.20	4.20	4.15	4.20
RAO2	2.55	3.15	3.50	3.55	3.65	3.66	3.65	3.66	3.60	3.65	3.75	3.70
RAO3	4.35	4.30	4.20	4.10	4.20	4.27	4.30	4.30	4.30	4.30	4.50	4.50
RAO4	2.96	3.52	3.60	3.62	3.65	3.63	3.65	3.70	3.67	3.70	3.80	4.35
RAO5	3.04	3.60	3.80	3.90	4.00	4.07	4.05	4.10	4.15	4.20	4.30	4.10
MEAN	3.21	3.64	3.82	3.84	3.90	3.96	3.96	3.99	3.98	4.01	4.10	4.17
SD	0.68	0.42	0.29	0.25	0.24	0.29	0.30	0.29	0.32	0.31	0.32	0.30
SE	0.30	0.19	0.13	0.11	0.11	0.13	0.13	0.13	0.14	0.14	0.14	0.14

Body weight of Rabbits Ovariectomized+Estrogen group( g )

Week	Baseline ( kg )	2	3	4	5	6	7	8	9	10	11	12
RAE1	3.85	4.00	4.10	4.12	4.15	4.50	4.50	4.40	4.45	4.45	4.50	4.60
RAE2	4.22	4.27	4.31	4.39	4.42	4.50	4.50	4.50	4.45	4.45	4.50	4.55
RAE3	3.65	3.60	3.45	3.48	3.48	3.50	3.50	3.50	3.50	3.35	3.40	3.45
RAE4	3.90	3.95	3.95	3.95	3.95	4.05	4.05	4.00	3.90	4.00	4.00	4.05
RAE5	4.22	4.25	4.32	4.45	4.40	4.50	4.60	4.65	4.60	4.70	4.50	4.45
MEAN	3.97	4.01	4.03	4.08	4.08	4.21	4.23	4.21	4.18	4.19	4.18	4.22
SD	0.25	0.27	0.36	0.39	0.39	0.44	0.46	0.46	0.46	0.53	0.49	0.48
SE	0.11	0.12	0.16	0.17	0.17	0.20	0.21	0.21	0.21	0.24	0.22	0.22

Body weight of Rabbits Ovariectomized+Kw group( g )

Week	Baseline ( kg )	2	3	4	5	6	7	8	9	10	11	12
RAK1	3.17	3.45	3.80	4.20	4.20	4.20	4.30	4.30	4.30	4.25	4.27	4.25
RAK2	3.00	3.50	3.50	3.54	3.60	3.60	3.75	3.85	3.95	3.95	3.95	3.92
RAK3	4.10	4.15	4.20	3.80	3.75	3.80	3.78	3.80	3.85	3.95	3.90	4.00
RAK4	3.89	3.95	3.98	4.04	4.15	4.15	4.25	4.35	4.33	4.30	4.50	4.45
RAK5	3.80	4.05	4.20	4.25	4.32	4.30	4.40	4.42	4.45	4.48	4.50	4.58
MEAN	3.59	3.82	3.94	3.97	4.00	4.01	4.10	4.14	4.18	4.19	4.22	4.24
SD	0.48	0.32	0.30	0.30	0.31	0.30	0.31	0.29	0.26	0.23	0.29	0.28
SE	0.21	0.14	0.13	0.13	0.14	0.13	0.14	0.13	0.12	0.10	0.13	0.13

Biochemistry parameter of rabbits (control group)

Baseline	Total-Ch	HDL-C	LDL-C	HDL/LDL ratio	Tg	SGOT	SGPT	ALK.PHOS
RAC1	44.00	26.60	25.00	1.06	64.00	11.00	40.00	93.00
RAC2	61.00	36.80	21.00	1.75	45.00	11.00	31.00	90.00
RAC3	63.00	41.80	37.00	1.13	36.00	21.00	23.00	57.00
RAC4	53.00	42.10	23.00	1.83	24.00	10.00	30.00	59.00
RAC5	40.00	32.20	11.00	2.93	21.00	8.00	29.00	47.00
MEAN	52.20	35.90	23.40	1.74	38.00	12.20	30.60	69.20
SD	10.13	6.60	9.32	0.75	17.42	5.07	6.11	20.89
SE	4.53	2.95	4.17	0.34	7.79	2.27	2.73	9.34

4 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL ratio	Tg	SGOT	SGPT	ALK.PHOS
RAC1	49.00	34.50	11.00	3.14	65.00	13.00	37.00	128.00
RAC2	46.00	31.50	16.00	1.97	47.00	30.00	67.00	59.00
RAC3	79.00	51.80	14.00	3.70	34.00	20.00	24.00	55.00
RAC4	69.00	52.70	-	-	35.00	9.00	16.00	46.00
RAC5	48.00	34.30	27.00	1.27	48.00	12.00	22.00	35.00
MEAN	58.20	40.96	17.00	2.52	45.80	16.80	33.20	64.60
SD	14.89	10.38	6.98	1.10	12.56	8.41	20.39	36.62
SE	6.66	4.64	3.49	0.55	5.62	3.76	9.12	16.38

8 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL ratio	Tg	SGOT	SGPT	ALK.PHOS
RAC1	55.00	36.00	9.00	4.00	81.00	15.00	34.00	82.00
RAC2	61.00	42.70	11.00	3.88	51.00	22.00	44.00	56.00
RAC3	86.00	61.20	15.00	4.08	69.00	21.00	18.00	45.00
RAC4	69.00	52.60	12.00	4.38	24.00	15.00	32.00	43.00
RAC5	46.00	37.40	8.00	4.68	50.00	13.00	27.00	36.00
MEAN	63.40	45.98	11.00	4.20	55.00	17.20	31.00	52.40
SD	15.18	10.72	2.74	0.32	21.64	4.02	9.54	18.04
SE	6.79	4.79	1.22	0.14	9.68	1.80	4.27	8.07

12 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL ratio	Tg	SGOT	SGPT	ALK.PHOS
RAC1	51.00	34.10	11.00	3.10	59.00	48.00	40.00	72.00
RAC2	74.00	48.50	12.00	4.04	53.00	60.00	69.00	92.00
RAC3	70.00	50.30	15.00	3.35	56.00	39.00	27.00	39.00
RAC4	80.00	55.80	15.00	3.72	39.00	42.00	32.00	35.00
RAC5	54.00	38.70	11.00	3.52	50.00	30.00	28.00	30.00
MEAN	65.80	45.48	12.80	3.55	51.40	43.80	39.20	53.60
SD	12.70	8.86	2.05	0.36	7.70	11.14	17.43	27.06
SE	5.68	3.96	0.92	0.16	3.44	4.98	7.79	12.10



## Biochemistry parameter of rabbits (ovariectomized group)

Baseline	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAO1	51.00	-	19.00	-	45.00	35.00	35.00	-
RAO2	67.00	-	15.00	-	46.00	20.00	41.00	-
RAO3	53.00	39.00	12.00	3.25	103.00	22.00	90.00	52.00
RAO4	21.00	25.00	2.00	12.50	55.00	24.00	50.00	58.00
RAO5	97.00	65.00	38.00	1.71	93.00	16.00	19.00	75.00
MEAN	57.80	43.00	17.20	5.82	68.40	23.40	47.00	61.67
SD	27.59	20.30	13.22	5.84	27.53	7.13	26.56	11.93
SE	12.34	9.08	5.91	2.61	12.31	3.19	11.88	5.34

4 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAO1	61.00	51.00	24.00	2.13	56.00	22.00	41.00	31.00
RAO2	74.00	59.00	17.00	3.47	58.00	30.00	42.00	49.00
RAO3	46.00	37.00	10.00	3.70	99.00	27.00	37.00	41.00
RAO4	18.00	19.00	2.00	9.50	76.00	31.00	45.00	57.00
RAO5	57.00	51.00	8.00	6.38	52.00	20.00	27.00	69.00
MEAN	51.20	43.40	12.20	5.03	68.20	26.00	38.40	49.40
SD	21.09	15.77	8.50	2.93	19.52	4.85	6.99	14.59
SE	9.43	7.05	3.80	1.31	8.73	2.17	3.12	6.52

8 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAO1	58.00	45.30	11.00	4.12	47.00	17.00	28.00	25.00
RAO2	82.00	59.60	18.00	3.31	51.00	20.00	37.00	64.00
RAO3	63.00	32.50	12.00	2.71	149.00	16.00	44.00	34.00
RAO4	-	-	-	-	-	-	-	-
RAO5	65.00	49.80	6.00	8.30	57.00	26.00	21.00	70.00
MEAN	67.00	46.80	11.75	4.61	76.00	19.75	32.50	48.25
SD	10.42	11.25	4.92	2.53	48.84	4.50	10.08	22.10
SE	4.66	5.03	2.20	1.13	21.84	2.01	4.51	9.88

12 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAO1	77.00	57.40	19.00	3.02	45.00	25.00	32.00	25.00
RAO2	79.00	60.80	16.00	3.80	52.00	72.00	65.00	45.00
RAO3	60.00	33.10	5.00	6.62	171.00	13.00	34.00	36.00
RAO4	28.00	20.10	3.00	6.70	67.00	48.00	55.00	85.00
RAO5	81.00	57.10	18.00	3.17	65.00	24.00	37.00	64.00
MEAN	65.00	45.70	12.20	4.66	80.00	36.40	44.60	51.00
SD	22.30	18.09	7.60	1.85	51.68	23.63	14.60	23.78
SE	9.97	8.09	3.40	0.83	23.11	10.57	6.53	10.63

Biochemistry parameter of rabbits (ovariectomized+Estrogen group)

Baseline	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAE1	66.00	52.80	15.00	3.52	68.00	16.00	26.00	29.00
RAE2	52.00	37.80	11.00	3.44	51.00	14.00	24.00	38.00
RAE3	66.00	28.10	25.00	1.12	133.00	15.00	40.00	48.00
RAE4	41.00	33.60	17.00	1.98	30.00	13.00	43.00	48.00
RAE5	56.00	40.70	14.00	2.91	43.00	8.00	29.00	59.00
MEAN	56.20	38.60	16.40	2.59	65.00	13.20	32.40	44.40
SD	10.50	9.25	5.27	1.03	40.43	3.11	8.56	11.37
SE	4.69	4.13	2.36	0.46	18.08	1.39	3.83	5.09

4 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAE1	57.00	42.50	9.00	4.72	42.00	33.00	49.00	152.00
RAE2	53.00	33.80	11.00	3.07	37.00	16.00	19.00	33.80
RAE3	53.00	36.30	24.00	1.51	39.00	18.00	30.00	38.00
RAE4	45.00	34.40	10.00	-	26.00	28.00	37.00	41.00
RAE5	70.00	46.60	4.00	11.65	24.00	11.00	22.00	48.00
MEAN	55.60	38.72	11.60	5.24	33.60	21.20	31.40	62.56
SD	9.15	5.59	7.44	4.47	8.08	9.04	12.10	50.27
SE	4.09	2.50	3.33	2.24	3.61	4.04	5.41	22.48

8 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAE1	62.00	45.30	11.00	4.12	63.00	7.00	24.00	92.00
RAE2	51.00	37.50	10.00	3.75	33.00	12.00	14.00	31.00
RAE3	67.00	35.40	20.00	1.77	71.00	9.00	26.00	40.00
RAE4	64.00	48.10	11.00	4.37	27.00	36.00	39.00	32.00
RAE5	70.00	42.20	23.00	1.83	34.00	16.00	20.00	45.00
MEAN	62.80	41.70	15.00	3.17	45.60	16.00	24.60	48.00
SD	7.26	5.28	6.04	1.27	19.92	11.68	9.26	25.27
SE	3.25	2.36	2.70	0.57	8.91	5.22	4.14	11.30

12 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAE1	69.00	47.30	17.00	2.78	40.00	31.00	19.00	31.00
RAE2	48.00	29.80	18.00	1.66	93.00	16.00	31.00	78.00
RAE3	55.00	29.50	12.00	2.46	116.00	63.00	49.00	40.00
RAE4	70.00	47.00	12.00	3.92	54.10	47.00	58.00	35.00
RAE5	65.00	44.50	14.00	3.18	51.00	28.00	22.00	34.00
MEAN	61.40	39.62	14.60	2.80	70.82	37.00	35.80	43.60
SD	9.56	9.17	2.79	0.84	32.23	18.26	17.05	19.50
SE	4.27	4.10	1.25	0.38	14.41	8.17	7.62	8.72

## Biochemistry parameter of rabbits (ovariectomized+Kw group)

Baseline	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAK1	174.00	-	118.00	-	41.00	33.00	27.00	-
RAK2	72.00	-	30.00	-	89.00	15.00	39.00	-
RAK3	25.00	23.00	4.00	5.75	45.00	19.00	53.00	26.00
RAK4	49.00	43.00	10.00	4.30	40.00	17.00	55.00	58.00
RAK5	170.00	81.60	104.00	0.78	44.00	5.00	10.00	52.00
MEAN	98.00	49.20	53.20	3.61	51.80	17.80	36.80	45.33
SD	69.58	29.79	53.86	2.55	20.90	10.06	18.79	17.01
SE	31.12	17.20	24.09	1.47	9.35	4.50	8.40	9.82

4 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAK1	77.00	58.00	-	-	47.00	27.00	44.00	56.00
RAK2	61.00	44.00	19.00	2.32	44.00	19.00	46.00	65.00
RAK3	39.00	35.00	2.00	17.50	60.00	25.00	46.00	32.00
RAK4	42.00	37.00	2.00	-	60.00	33.00	66.00	57.00
RAK5	84.00	60.20	28.00	2.15	28.00	5.00	16.00	50.00
MEAN	60.60	46.84	12.75	7.32	47.80	21.80	43.60	52.00
SD	20.18	11.71	12.95	8.81	13.27	10.64	17.85	12.39
SE	9.03	5.24	6.47	5.09	5.94	4.76	7.98	5.54

8 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAK1	78.00	48.30	23.00	2.10	56.00	22.00	26.00	37.00
RAK2	58.00	42.20	14.00	3.01	46.00	11.00	38.00	48.00
RAK3	36.00	29.70	2.00	14.85	46.00	15.00	42.00	32.00
RAK4	40.00	30.00	4.00	7.50	57.00	28.00	44.00	55.00
RAK5	87.00	70.30	21.00	3.35	46.00	6.00	13.00	44.00
MEAN	59.80	44.10	12.80	6.16	50.20	16.40	32.60	43.20
SD	22.54	16.69	9.58	5.28	5.76	8.73	12.99	9.04
SE	10.08	7.46	4.28	2.36	2.58	3.91	5.81	4.04

12 Week	Total-Ch	HDL-C	LDL-C	HDL/LDL	Tg	SGOT	SGPT	ALK.PHOS
RAK1	71.00	41.80	25.00	1.67	65.00	29.00	45.00	35.00
RAK2	54.00	40.10	12.00	3.34	55.00	28.00	46.00	58.00
RAK3	40.00	31.40	7.00	4.49	61.00	74.00	92.00	36.00
RAK4	38.00	30.30	6.00	5.05	70.00	26.00	42.00	45.00
RAK5	179.00	69.20	121.00	0.57	57.00	31.00	28.00	39.00
MEAN	76.40	42.56	34.20	3.02	61.60	37.60	50.60	42.60
SD	58.86	15.74	49.11	1.88	6.07	20.43	24.24	9.45
SE	26.32	7.04	21.96	0.84	2.71	9.14	10.84	4.23

Percent contraction on isolated aorta in rabbits (Control group) by NA

จำนวน ทดลองที่ (n)	% Contraction					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	0.65	1.29	44.66	100.00	120.39	120.39
2	1.75	6.43	35.67	100.00	109.94	109.94
3	1.04	2.07	28.50	100.00	131.61	133.16
4	0.76	3.82	8.40	100.00	117.56	119.08
5	1.01	9.60	48.99	100.00	139.90	139.90
6	1.35	10.14	48.65	100.00	133.78	135.14
7	5.26	18.42	61.84	100.00	114.47	115.13
8	0.70	11.27	52.11	100.00	117.61	120.42
9	15.34	23.93	64.42	100.00	115.34	117.18
10	1.62	7.03	49.19	100.00	118.92	121.08
11	1.45	2.18	46.91	100.00	109.45	110.18
12	1.40	5.12	51.63	100.00	118.60	119.07
13	0.72	3.94	53.41	100.00	121.51	121.86
14	3.26	13.36	56.35	100.00	124.43	126.71
15	1.67	5.69	48.49	100.00	125.08	127.09
16	1.37	4.44	36.18	100.00	134.47	136.52
17	0.68	1.35	37.84	100.00	129.05	130.74
18	1.02	3.55	52.79	100.00	122.84	123.86
19	0.83	19.83	67.36	100.00	108.68	111.57
20	1.58	34.39	83.79	100.00	100.00	100.40
21	7.04	25.82	64.79	100.00	107.98	109.86
22	2.99	22.26	73.09	100.00	103.65	105.65
23	0.97	15.53	77.18	100.00	101.94	104.37
24	1.33	13.33	98.00	100.00	132.00	138.67
25	1.36	10.45	78.18	100.00	101.36	102.73
26	1.62	16.76	82.16	100.00	101.08	101.62
<b>MEAN</b>	2.26	11.23	55.79	100.00	117.76	119.32
<b>SE</b>	0.60	1.71	3.80	0.00	2.26	2.33

## Percent contraction on isolated aorta in ovariectomized rabbits (OVX group) by NA

จำนวน ทดลองที่ (n)	% Contraction					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	6.79	28.70	62.35	100.00	116.67	123.77
2	8.70	28.17	66.08	100.00	111.06	118.29
3	5.79	30.79	71.28	100.00	114.67	117.98
4	4.65	13.02	53.49	100.00	118.60	133.02
5	9.84	31.38	56.12	100.00	107.18	107.71
6	3.64	10.25	80.41	100.00	106.61	107.97
7	0.54	1.63	40.11	100.00	108.71	108.89
8	2.59	35.93	77.78	100.00	103.70	104.07
9	3.30	31.32	67.03	100.00	106.04	110.44
10	3.01	18.05	49.62	100.00	111.28	100.00
11	6.15	38.27	73.80	100.00	107.52	109.57
12	3.62	27.15	69.68	100.00	107.69	109.05
13	3.98	11.55	57.77	100.00	117.13	112.35
14	13.45	20.69	65.86	100.00	101.03	110.34
15	2.79	8.36	55.42	100.00	116.41	117.65
16	0.75	1.49	50.00	100.00	114.18	116.42
17	2.06	2.88	38.68	100.00	129.63	135.80
18	1.05	2.11	33.68	100.00	123.16	124.21
19	2.25	5.86	31.98	100.00	130.63	135.14
20	1.14	12.17	26.62	100.00	123.95	125.10
21	0.27	6.15	31.02	100.00	134.49	139.57
22	1.52	3.54	31.31	100.00	126.77	130.30
23	1.27	5.06	25.95	100.00	124.68	132.28
<b>MEAN</b>	3.88	16.28	52.87	100.00	115.73	118.69
<b>SE</b>	0.69	2.60	3.63	0.00	1.96	2.38

Percent contraction on isolated aorta in ovariectomized rabbits (OVX+Estrogen group) by NA

จำนวน ทดลองที่ (n)	% Contraction					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	5.83	21.68	66.34	100.00	106.47	105.18
2	1.54	19.44	68.21	100.00	104.63	107.72
3	10.16	21.54	66.26	100.00	102.03	98.78
4	1.07	13.90	65.24	100.00	107.49	106.95
5	1.65	33.06	67.36	100.00	104.96	107.85
6	1.08	8.19	51.51	100.00	117.03	118.10
7	1.80	5.17	57.53	100.00	112.36	116.40
8	3.59	15.19	54.64	100.00	115.82	124.26
9	1.53	19.54	64.37	100.00	113.41	115.71
10	1.73	34.26	65.05	100.00	114.88	111.42
11	3.01	17.59	61.81	100.00	125.93	132.18
12	6.99	27.04	70.40	100.00	114.22	126.57
13	3.37	36.24	72.75	100.00	119.38	123.03
14	15.93	20.37	65.19	100.00	128.89	130.00
<b>MEAN</b>	<b>4.23</b>	<b>20.94</b>	<b>64.05</b>	<b>100.00</b>	<b>113.39</b>	<b>116.01</b>
<b>SE</b>	<b>1.14</b>	<b>2.46</b>	<b>1.58</b>	<b>0.00</b>	<b>2.12</b>	<b>2.72</b>

## Percent contraction on isolated aorta in ovariectomized rabbits (OVX+ KW group) by NA

จำนวน ทดลองที่ (n)	% Contraction					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	17.95	59.54	90.31	100.00	109.97	110.83
2	11.28	82.74	82.74	100.00	101.33	103.98
3	0.00	84.91	100.00	100.00	110.26	111.07
4	4.56	85.55	85.55	100.00	107.98	109.13
5	0.87	1.30	32.61	100.00	142.17	144.78
6	1.70	13.07	40.34	100.00	124.43	128.98
7	0.25	3.77	44.97	100.00	127.39	128.14
8	0.96	1.92	40.38	100.00	124.52	125.96
9	0.56	2.25	34.27	100.00	125.28	126.40
10	1.03	2.56	22.05	100.00	123.08	127.18
11	9.33	19.03	31.72	100.00	119.78	133.96
12	0.57	1.98	38.24	100.00	130.31	131.44
13	1.01	4.52	26.13	100.00	126.13	135.68
14	0.60	1.81	8.16	100.00	133.53	134.74
15	0.36	1.44	22.74	100.00	125.63	126.71
16	0.97	1.46	30.58	100.00	122.82	129.13
17	0.95	17.46	58.41	100.00	105.40	107.30
18	5.93	28.06	73.12	100.00	107.11	107.11
19	6.04	33.58	71.32	100.00	104.91	105.28
20	5.62	38.13	79.38	100.00	101.88	100.63
21	3.52	35.18	76.38	100.00	104.02	104.52
22	3.53	24.78	51.88	100.00	118.00	120.62
MEAN	4.59	29.61	26.89	0.00	11.80	13.22
SE	1.00	6.46	5.87	0.00	2.58	2.89

Percent relaxation on isolated aorta in rabbits (Control group) by Ach

จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	20.74	48.40	67.02	79.79	76.60	57.45
2	26.52	54.55	66.67	78.79	67.42	53.03
3	23.44	53.91	64.06	79.69	66.41	52.34
4	25.21	55.46	66.39	80.67	71.43	54.62
5	23.83	45.53	86.38	95.74	90.21	81.70
6	22.94	45.45	87.01	96.54	92.21	84.85
7	28.69	57.38	66.39	78.69	70.49	46.72
8	24.57	53.18	59.54	78.32	69.94	46.82
9	23.40	45.53	52.77	75.74	64.68	47.66
10	27.69	55.90	61.54	88.21	85.13	50.26
11	27.69	31.54	72.69	70.00	42.31	22.69
12	19.49	44.07	58.47	79.66	71.19	66.95
<b>MEAN</b>	<b>24.52</b>	<b>49.24</b>	<b>67.41</b>	<b>81.82</b>	<b>72.33</b>	<b>55.42</b>
<b>SE</b>	<b>0.81</b>	<b>2.13</b>	<b>2.99</b>	<b>2.26</b>	<b>3.82</b>	<b>4.78</b>



Percent relaxation on isolated aorta in ovariectomized rabbits (OVX group) by Ach

จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	8.16	30.61	70.41	87.76	90.82	76.02
2	13.70	39.94	84.55	88.92	89.80	93.59
3	4.35	36.23	65.22	84.78	80.43	59.42
4	3.10	16.02	36.95	43.41	38.50	25.58
5	14.65	19.05	33.15	47.80	42.12	32.05
6	12.13	16.91	19.85	34.93	47.79	52.21
7	0.00	1.01	6.42	36.49	61.49	62.50
8	14.48	17.51	35.02	46.80	65.66	69.36
9	3.36	9.24	17.65	38.66	59.66	100.00
10	6.28	14.35	26.46	34.08	46.64	46.64
11	2.33	6.33	19.00	52.00	71.00	87.67
12	5.48	10.50	31.05	55.25	67.12	72.15
13	8.73	10.32	19.05	35.71	38.10	42.86
14	10.39	14.84	24.93	41.84	45.70	37.98
15	9.14	24.95	39.62	57.33	61.52	48.19
16	7.42	15.51	28.50	47.89	56.32	43.34
17	5.28	10.98	20.33	34.96	42.68	30.89
18	0.00	4.68	15.20	37.43	45.03	40.35
19	10.09	12.34	30.84	47.48	43.93	24.30
20	3.47	10.89	25.74	40.10	44.55	37.62
21	8.57	10.20	12.65	22.86	33.88	36.33
22	16.67	28.57	19.05	40.48	48.81	35.71
23	9.29	15.24	18.96	30.86	42.01	40.52
24	6.11	9.92	10.69	17.56	25.95	23.66
25	1.88	9.72	18.18	21.00	26.02	23.20
26	7.98	9.69	15.10	18.80	27.35	23.65
27	8.50	10.54	19.96	29.21	31.79	29.57
28	2.81	8.03	20.08	20.48	25.70	27.31
29	9.96	12.26	19.92	21.46	22.22	29.12
30	12.77	13.83	21.63	39.01	2.62	36.88

31	11.05	20.72	32.87	35.64	30.11	34.53
32	6.58	7.24	26.97	27.63	20.39	28.95
<b>MEAN</b>	7.65	14.94	27.69	41.21	47.05	45.38
<b>SE</b>	0.77	1.55	3.00	3.24	3.34	3.78

Percent relaxation on isolated aorta in ovariectomized rabbits (OVX +Estrogen group) by Ach

จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	17.86	60.00	83.57	95.71	95.71	92.86
2	17.12	46.85	69.82	81.98	73.87	71.17
3	14.48	40.00	51.03	58.62	37.93	46.90
4	17.13	34.81	53.59	59.94	35.64	15.47
5	16.84	73.68	81.05	85.26	80.00	76.84
6	14.81	49.07	83.33	90.74	85.19	75.00
7	13.04	28.02	61.84	67.63	60.39	44.93
8	17.89	41.87	63.82	63.82	53.25	47.15
9	13.55	42.06	82.71	71.03	73.83	55.61
10	16.10	61.02	72.46	60.59	53.81	44.49
11	12.60	22.83	78.74	96.85	67.72	68.50
12	15.69	48.04	50.00	53.92	51.96	19.61
13	18.18	60.23	71.59	98.86	57.95	30.68
<b>MEAN</b>	<b>15.79</b>	<b>46.81</b>	<b>69.50</b>	<b>75.77</b>	<b>63.64</b>	<b>53.02</b>
<b>SE</b>	<b>0.53</b>	<b>3.96</b>	<b>3.45</b>	<b>4.54</b>	<b>4.95</b>	<b>6.43</b>

Percent relaxation on isolated aorta in ovariectomized rabbits (OVX+Kw group) by Ach

จำนวน ทดลองที่ (n)	% Contraction					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	16.74	25.52	42.26	94.98	71.97	79.50
2	9.40	19.23	44.02	59.83	60.68	53.85
3	0.00	16.25	41.25	85.00	67.50	77.50
4	0.00	1.74	71.74	73.04	83.91	48.70
5	0.00	11.16	48.66	62.95	65.18	45.54
6	2.60	9.09	14.94	66.88	61.04	45.45
7	15.14	16.09	21.14	82.97	91.80	70.98
8	4.69	13.28	39.84	67.19	57.03	61.72
9	0.00	22.81	82.46	94.74	82.46	73.68
10	0.00	15.84	65.35	81.19	66.34	60.40
11	1.47	20.59	52.94	73.53	45.59	67.65
12	4.00	32.00	62.67	72.00	42.67	68.00
13	5.56	8.33	12.50	76.39	44.44	62.50
<b>MEAN</b>	<b>4.58</b>	<b>16.30</b>	<b>46.13</b>	<b>76.21</b>	<b>64.66</b>	<b>62.73</b>
<b>SE</b>	<b>1.61</b>	<b>2.21</b>	<b>5.93</b>	<b>3.09</b>	<b>4.26</b>	<b>3.22</b>

Percent relaxation on isolated aorta in rabbits ( Control group) by SNP

จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9} \text{ M}$	$1 \times 10^{-8} \text{ M}$	$1 \times 10^{-7} \text{ M}$	$1 \times 10^{-6} \text{ M}$	$1 \times 10^{-5} \text{ M}$	$1 \times 10^{-4} \text{ M}$
1	31.38	40.96	70.48	100.27	106.38	106.65
2	27.76	39.15	65.48	89.32	100.36	106.05
3	23.33	18.33	49.44	62.78	76.67	86.11
4	14.29	19.05	42.33	66.14	82.54	92.59
5	13.76	17.46	37.57	53.44	85.71	104.76
6	2.16	7.19	36.69	53.24	91.37	123.02
7	10.75	15.42	27.57	47.20	76.17	92.52
8	17.89	18.70	33.33	48.78	77.24	108.13
9	2.49	10.95	30.85	69.15	93.53	100.50
10	5.37	16.59	41.46	75.12	101.95	110.24
11	6.42	14.34	34.34	73.21	90.94	97.74
12	8.06	12.10	33.87	70.97	103.23	110.48
13	3.10	8.53	18.60	55.04	87.60	124.03
14	7.96	15.04	29.65	74.34	104.42	121.24
15	2.80	10.49	18.88	53.85	86.01	119.58
16	4.20	9.24	21.85	59.66	91.60	136.13
17	5.91	13.98	88.71	56.45	79.03	89.78
18	3.13	10.27	21.88	45.54	74.55	81.25
19	7.36	15.95	38.65	61.35	90.80	106.75
20	5.82	12.17	32.28	51.85	73.02	82.54
21	44.40	54.87	72.56	94.22	99.64	109.39
22	34.39	49.82	61.40	81.40	91.58	89.47
23	35.00	50.63	61.25	89.38	101.88	107.50
24	33.69	62.77	83.69	98.58	107.09	115.60
25	29.34	61.16	81.40	90.91	97.93	105.37
26	37.96	73.36	102.92	119.34	126.64	126.64
27	18.54	47.02	76.82	89.40	101.32	106.62
28	4.61	15.67	26.73	42.40	58.99	104.61
29	2.60	19.33	39.78	62.45	85.50	102.60
30	8.40	30.00	43.60	53.20	58.40	105.20

31	2.88	9.35	18.71	33.09	54.68	103.96
32	1.60	6.91	14.36	28.19	54.26	90.43
33	8.28	18.62	33.10	46.21	55.17	61.38
34	0.96	1.91	5.26	13.88	21.05	47.85
35	8.05	8.05	28.86	42.95	51.68	60.40
36	11.32	11.32	31.13	43.40	52.83	62.26
<b>MEAN</b>	<b>13.50</b>	<b>23.52</b>	<b>43.21</b>	<b>63.80</b>	<b>83.10</b>	<b>99.98</b>
<b>SE</b>	<b>2.09</b>	<b>3.14</b>	<b>3.93</b>	<b>3.76</b>	<b>3.55</b>	<b>3.26</b>

Percent relaxation on isolated aorta in ovariectomized rabbits (OVX group) by SNP

จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	1.80	22.97	53.60	74.77	88.74	100.00
2	10.67	34.74	63.52	85.61	95.29	100.00
3	12.04	33.66	60.93	81.33	93.37	100.00
4	4.19	22.51	50.26	72.25	91.62	100.00
5	23.78	32.00	44.44	64.00	82.00	90.44
6	17.22	25.74	39.30	57.74	76.17	85.74
7	8.40	11.20	21.60	45.60	61.20	94.00
8	5.20	5.20	24.80	24.80	65.60	94.00
9	10.40	13.76	17.11	17.11	65.10	91.28
10	0.79	4.72	13.39	13.39	63.78	99.21
11	24.21	25.79	40.08	69.84	92.46	100.00
12	18.26	28.63	35.06	70.12	82.99	89.63
13	9.04	15.76	38.24	61.24	85.01	97.67
14	8.79	18.20	32.22	50.42	69.04	89.96
15	8.05	15.41	30.65	44.18	66.44	89.04
16	8.20	16.94	28.42	46.45	66.67	85.79
17	0.00	0.00	35.94	42.19	67.19	96.88
18	4.65	4.65	32.89	48.84	70.10	88.37
MEAN	9.76	18.44	36.80	53.88	76.82	94.00
SE	1.68	2.50	3.28	4.94	2.82	1.25

Percent relaxation on isolated aorta in ovariectomized rabbits (OVX+Estrogen group) by SNP

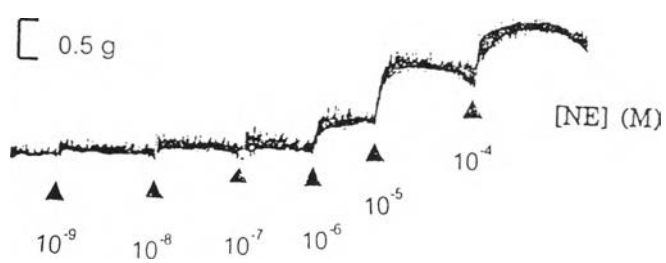
จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	0.74	38.97	22.79	51.84	76.10	89.71
2	5.62	11.24	20.22	42.70	82.58	93.26
3	8.33	15.48	36.90	57.74	70.83	86.31
4	6.15	11.73	20.67	43.02	60.89	94.41
5	28.00	43.33	62.67	74.67	84.00	90.67
6	28.13	43.75	59.90	70.83	77.60	88.54
7	25.33	46.00	59.33	80.00	83.33	93.33
8	33.63	62.83	84.96	97.35	104.87	108.85
9	24.23	51.54	71.81	83.70	85.02	103.52
10	40.55	69.69	94.49	108.27	108.27	108.27
11	15.63	36.98	61.98	75.00	81.25	91.67
12	26.60	43.59	57.69	74.36	78.53	100.00
13	12.00	23.00	40.00	54.00	63.00	85.00
14	22.51	39.64	54.73	75.96	78.52	96.16
15	9.17	29.36	44.04	59.63	66.97	84.86
16	18.56	58.08	62.87	67.07	83.83	93.41
17	13.59	56.52	59.24	63.04	74.46	96.74
18	12.16	64.86	65.54	74.32	83.78	92.57
19	4.02	49.43	50.00	54.60	79.31	95.98
20	12.32	15.58	26.81	44.93	63.41	100.36
21	3.10	6.19	49.54	68.73	83.90	102.48
22	0.00	4.11	24.66	73.97	92.24	100.46
<b>MEAN</b>	<b>15.93</b>	<b>37.36</b>	<b>51.40</b>	<b>67.99</b>	<b>80.12</b>	<b>95.30</b>
<b>SE</b>	<b>2.41</b>	<b>4.27</b>	<b>4.33</b>	<b>3.54</b>	<b>2.51</b>	<b>1.45</b>



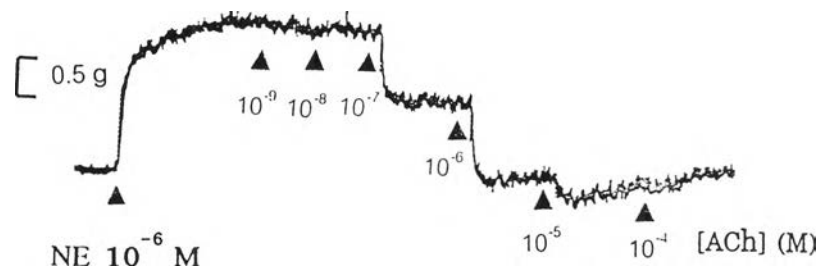
## Percent relaxation on isolated aorta in ovariectomized rabbits (OVX+Kw group) by SNP

จำนวน ทดลองที่ (n)	% Relaxation					
	$1 \times 10^{-9}$ M	$1 \times 10^{-8}$ M	$1 \times 10^{-7}$ M	$1 \times 10^{-6}$ M	$1 \times 10^{-5}$ M	$1 \times 10^{-4}$ M
1	6.37	15.69	30.39	53.43	81.37	91.67
2	4.59	4.59	-9.69	78.06	103.06	123.47
3	9.54	19.92	31.54	51.04	75.10	97.51
4	5.97	14.93	26.12	50.75	76.12	97.76
5	2.09	12.04	22.51	45.03	68.59	84.29
6	15.87	22.22	42.06	83.73	92.46	124.21
7	6.36	17.37	37.29	67.37	90.68	100.42
8	2.46	13.11	29.51	102.46	80.33	95.90
9	22.90	27.10	40.65	62.62	88.79	100.47
10	1.19	1.19	28.87	36.90	72.92	100.30
11	1.88	5.31	15.63	50.31	79.38	100.63
12	9.50	10.00	17.00	40.50	70.00	99.00
13	13.47	34.46	54.66	68.39	79.53	85.23
14	20.75	49.80	67.00	77.08	78.85	88.14
15	17.53	43.35	62.62	71.48	77.84	79.77
<b>MEAN</b>	<b>9.37</b>	<b>19.41</b>	<b>33.08</b>	<b>62.61</b>	<b>81.00</b>	<b>97.92</b>
<b>SE</b>	<b>1.84</b>	<b>3.63</b>	<b>4.99</b>	<b>4.67</b>	<b>2.38</b>	<b>3.23</b>

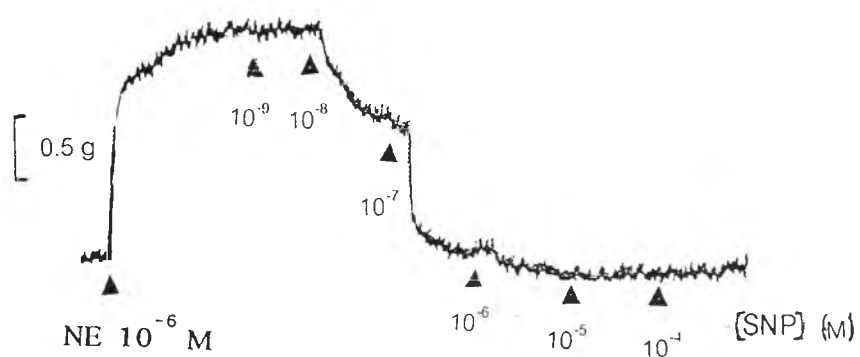
**Isometric tension changes in rat aorta (Control group).  
Noradrenaline induces smooth muscle cell contraction.**



**Isometric tension changes in rat aorta (Control group).  
Acetylcholine induces endothelium-dependent relaxation.**

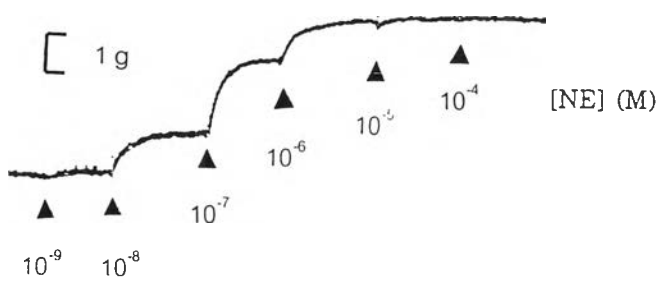


**Isometric tension changes in rat aorta (Control group).  
Sodium nitroprusside induces endothelium-independent relaxation.**

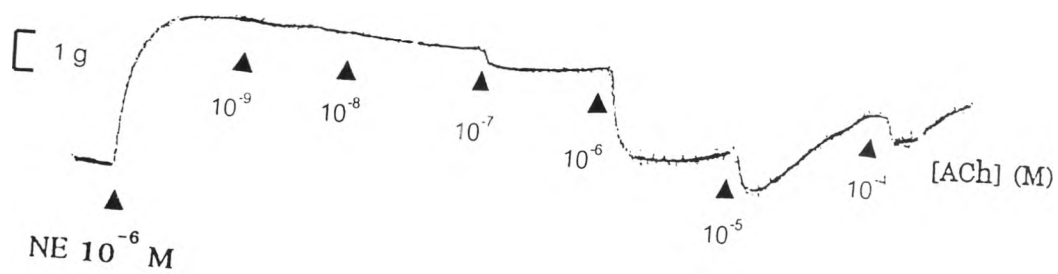


**Isometric tension changes in rabbit aorta (Control group).**

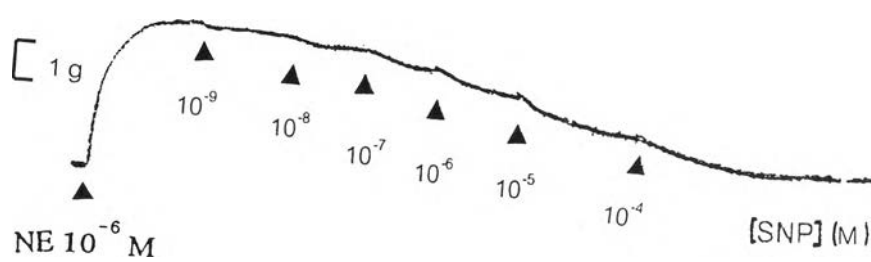
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**Isometric tension changes in rabbit aorta (Control group).  
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**Isometric tension changes in rabbit aorta (Control group).  
Sodium nitroprusside induces endothelium-independent relaxation.**



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