

April 11. 2003 (Friday) 11:20~11:50

우묵사스레피의 항암효과 및 작용기전

좌장 : 진창배 (KIST)

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Anti-cancer Effects and Action Mechanism of *Eurya emarginata*

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Effects of extracts of plants on the growth of HL-60 cells

식물명	Inhibition (%)	식물명	Inhibition (%)
다정금나무(잎)	0	개민들레(뿌리)	18
다정금나무(열매)	19	석위뿌리	22
쇠우뚝(잎)	3	복수초	92
쇠우뚝(줄기)	9	비름	40
쇠우뚝(뿌리)	13	산수국	11
삼백초	68	으름덩굴	36
사스레피	0	싸리나무	1
굴거리	0	광대나물	79
예덕나무	42	까마중	80
촉백나무	51	살갈퀴	23
왕모람	11	미역취	46
겨우살이(서어나무)	38	자금우	20
질경이	16	돌외	65

Effects of extracts of plants on the growth of HL-60 cells

식물명	Inhibition (%)	식물명	Inhibition (%)
쑥	21	담쟁이덩굴	5
치자	0	노랑하늘타리	54
고사리	0	으아리(잎)	26
녹나무(잎)	0	으아리(뿌리)	0
녹나무(열매)	0	청미래덩굴	2
비파나무	0	계요동	53
키위(Hay-ward; 잎)	4	마삭줄	40
키위(Hay-ward; 껍질)	59	멸구솔나무(잎)	70
키위(Golden yellow; 잎)	42	멸구솔나무(종자)	69
다래(A. arguta)	19	환삼덩굴	19
다래(A. eriantha)	57	아왜나무	64
우묵사스레피(잎)	69	까실쑥부쟁이	15
우묵사스레피(열매)	0	개민들레	39

Effects of extracts of plants on the growth of KG-1 cells

식물명	Inhibition (%)
청미래덩굴	37
계요동	43
마삭줄	23
멸구솔나무	69
환삼덩굴	10
삼백초	65
아왜나무	55
노랑하늘타리	53
우묵사스레피	53
겨우살이	38
흑백	64

Effects of extracts of plants on the growth of U937 cells

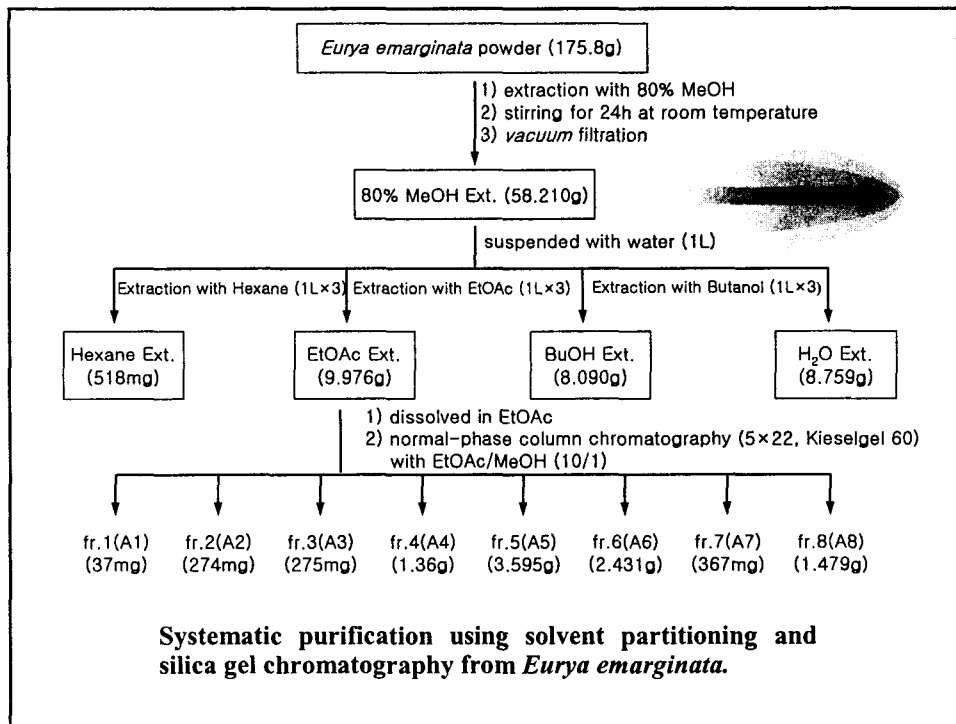
식물명	Inhibition (%)
청미래당굴	31
계요동	7
마삭줄	69
얼구술나무	80
환삼당굴	42
노랑하늘타리	62
우묵사스레피	69

Effects of extracts of plants on the growth of K562 cells

식물명	Inhibition (%)
계요동	22
마삭줄	7
얼구술나무	10
환삼당굴	4
아왜나무	52
우묵사스레피	33

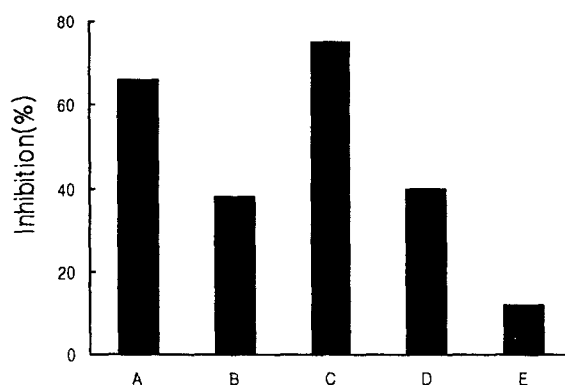
Eurya emarginata (Thunb.) Makino

우묵사스레피 (차나무과)

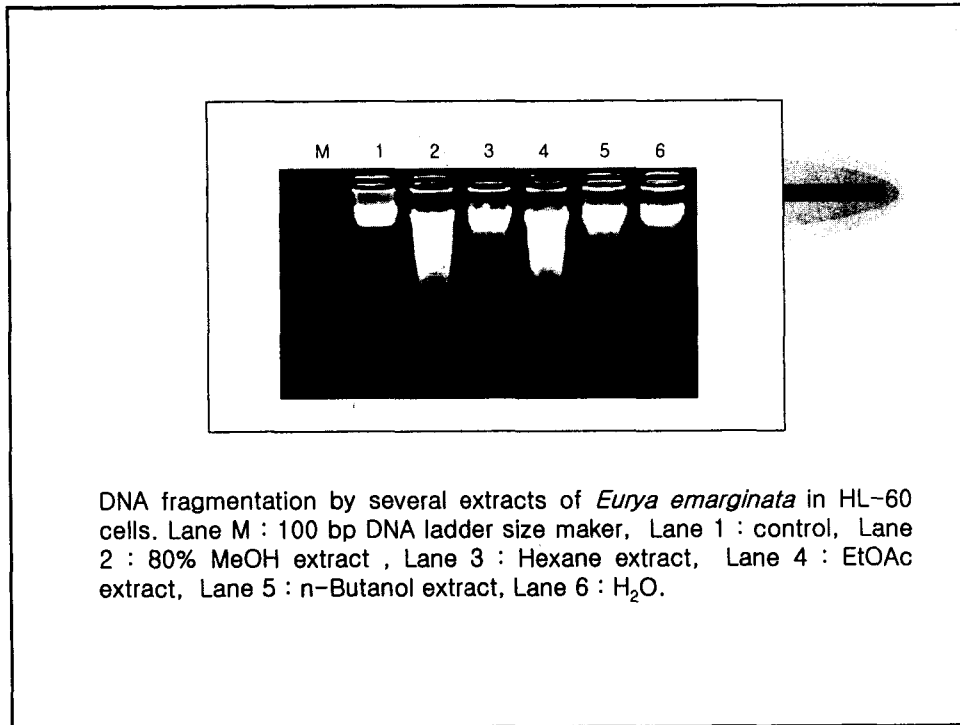
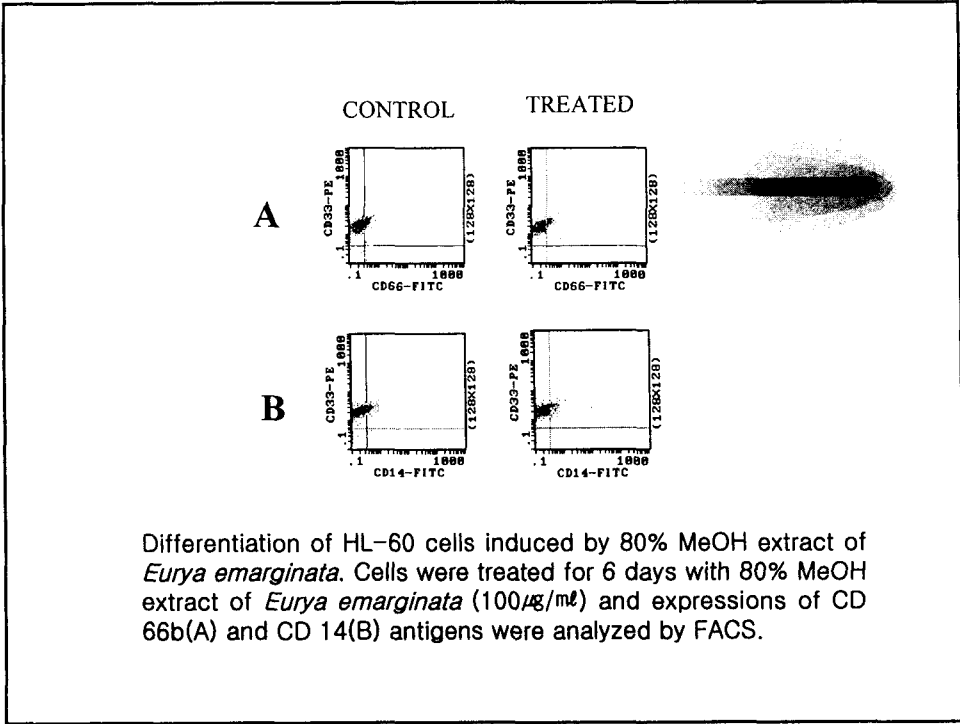


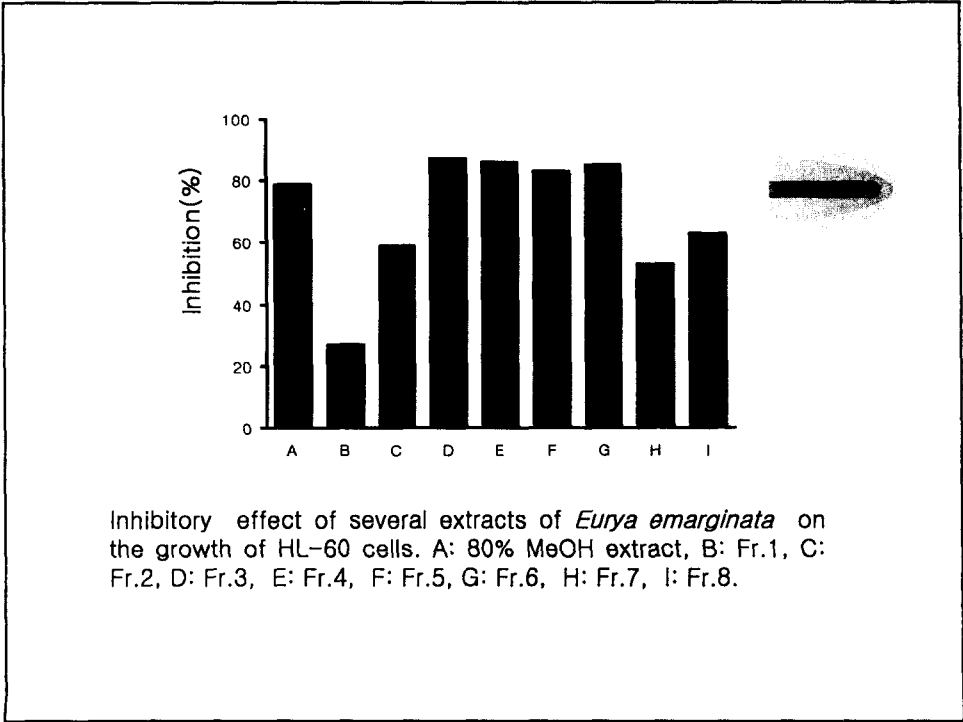
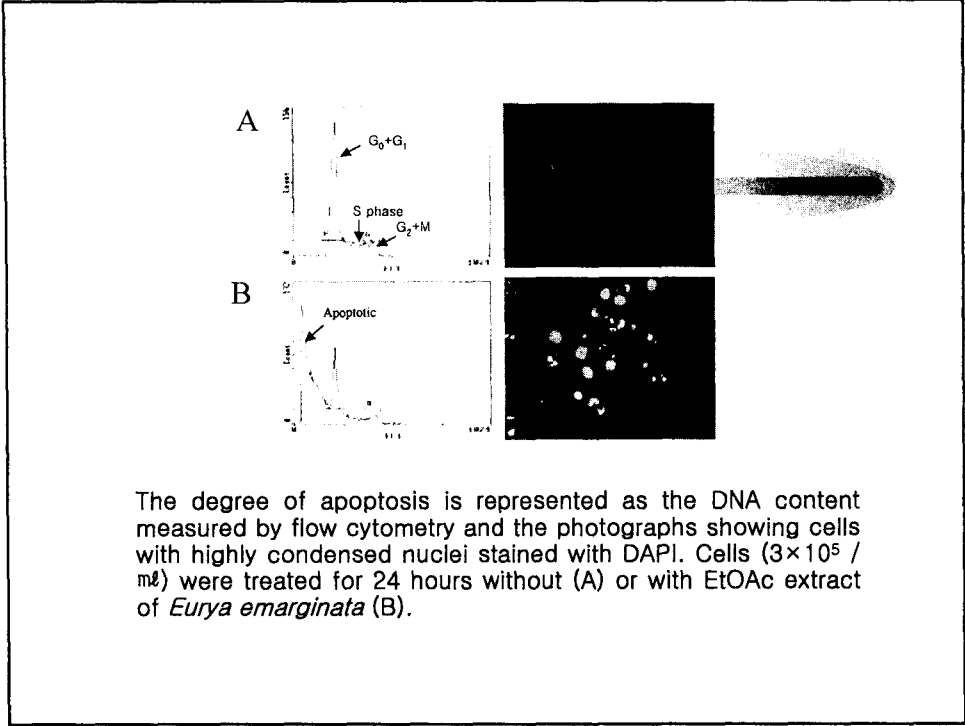
Inhibitory effect of several extracts of *Eurya emarginata* on the growth of tumor cell lines

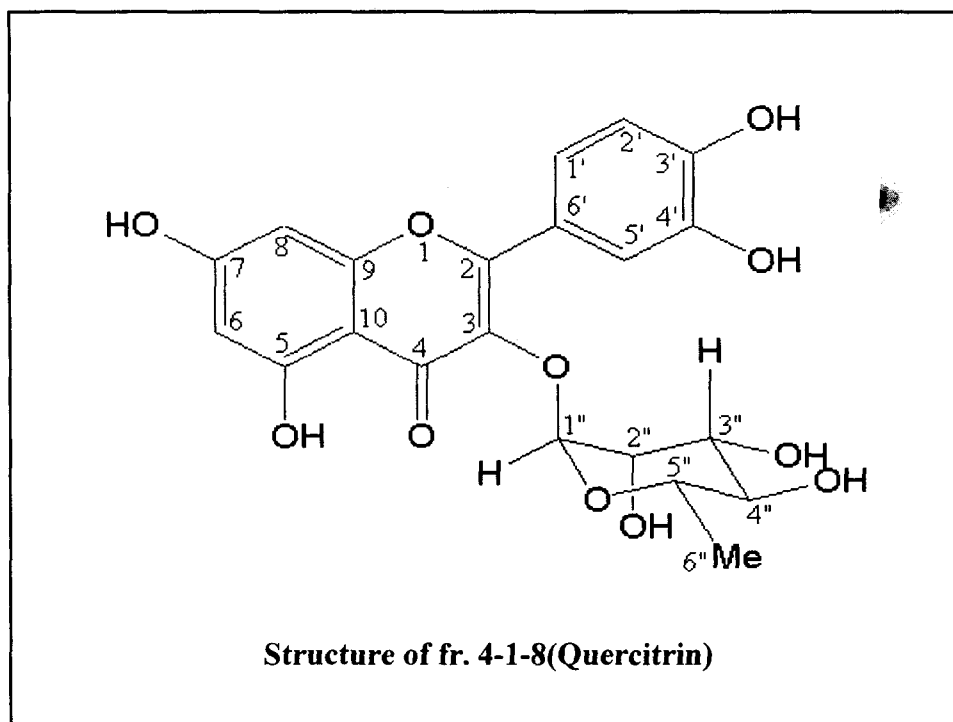
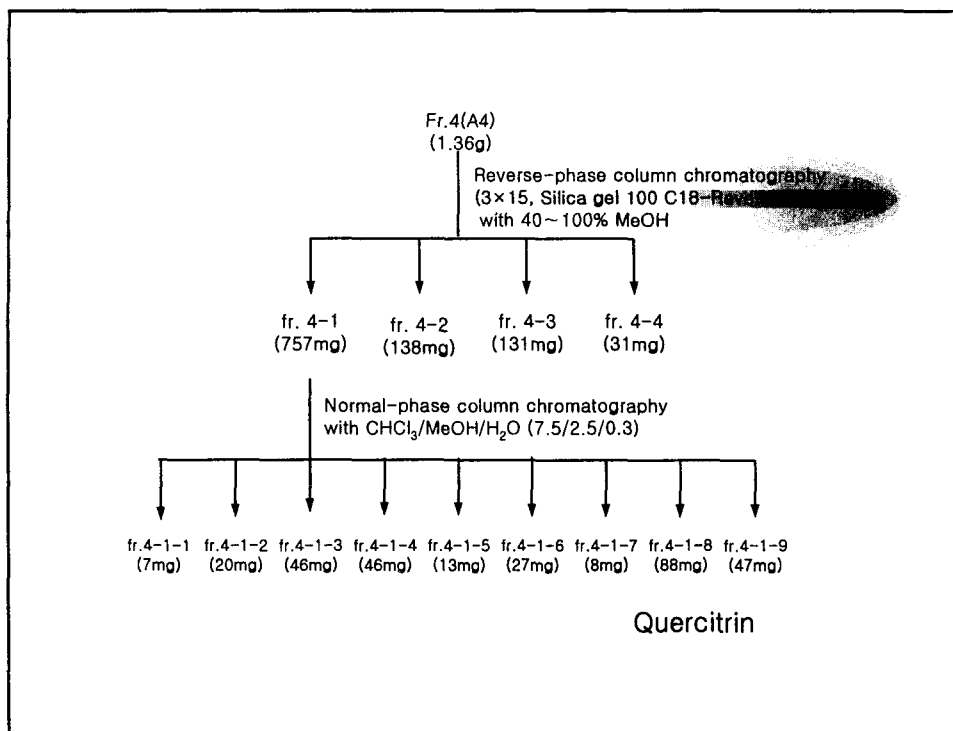
Cell line	Inhibition rate(%)				
	80% MeOH	Hexane	EtOAc	n-Butanol	H ₂ O
HEL-299	-	-	-	-	-
CCD-25Lu	-	-	-	-	-
HL-60	66.04	38.15	76.05	40.09	12.13
KG-1	63.83	43.89	63.92	65.59	21.15
U937	69.33	1.94	71.69	69.27	57.28
K562	24.04	12.29	35.78	14.75	18.64
JurKat	66.12	13.04	66.33	58.79	44.67
MCF-7	2.40	-	-	-	-
MCT-15	22.14	38.24	2.14	11.43	8.65
SK-OV-3	7.74	16.20	-	-	-
A498	6.20	1.76	3.90	22.71	-
SUN-16	11.07	27.62	12.38	22.85	10.82
SNU-C5	19.12	7.50	30.47	9.46	2.88
MIA PaCa-2	1.92	13.02	9.32	7.85	-
A431	5.89	14.26	7.09	8.15	10.99
Hep-G2	2.24	1.66	4.60	1.20	2.89
SKN-SH	29.91	64.22	23.98	4.88	1.67
A549	2.96	-	1.29	3.80	11.94

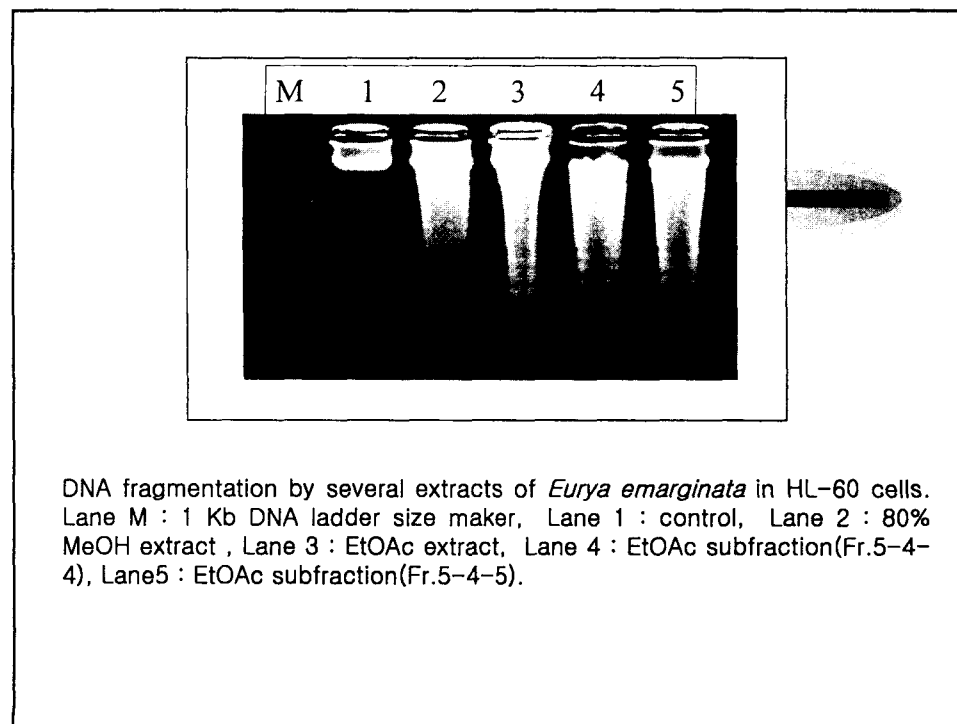
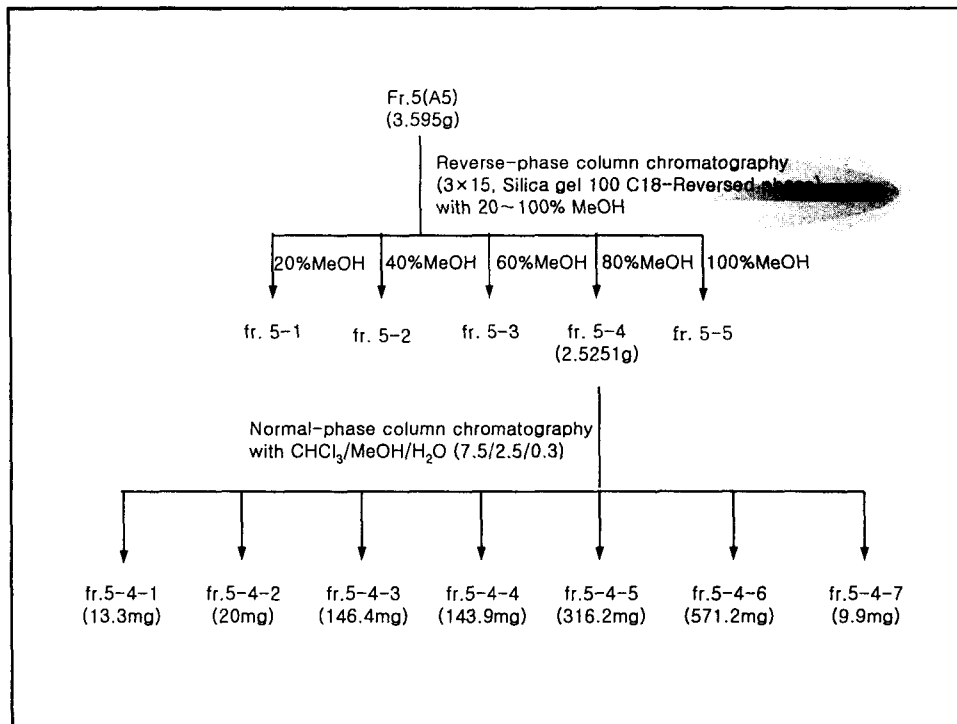


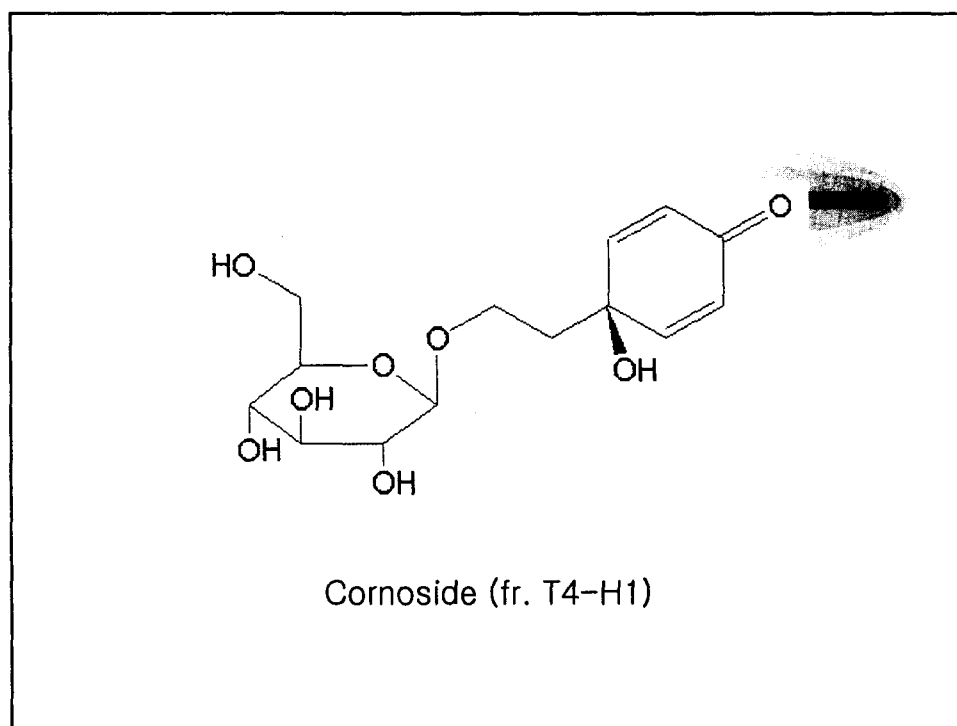
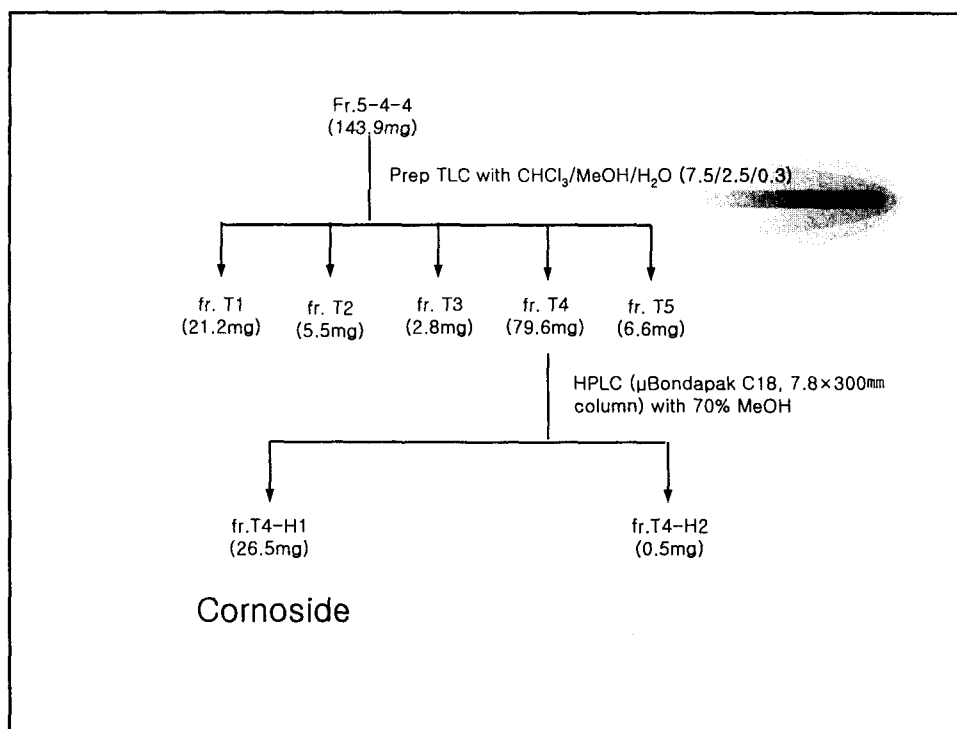
Inhibitory effect of several extracts of *Eurya emarginata* on the growth of HL-60 cells. A: 80% MeOH extract, B: Hexane extract, C: n-Butanol extract, D: EtOAc extract, E: Residue.

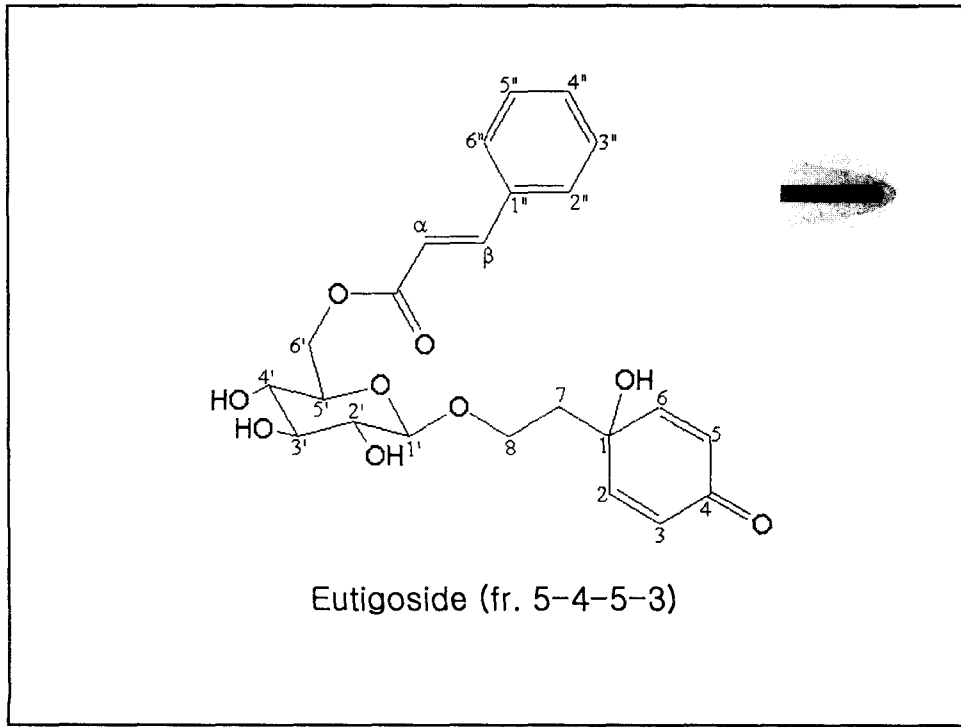
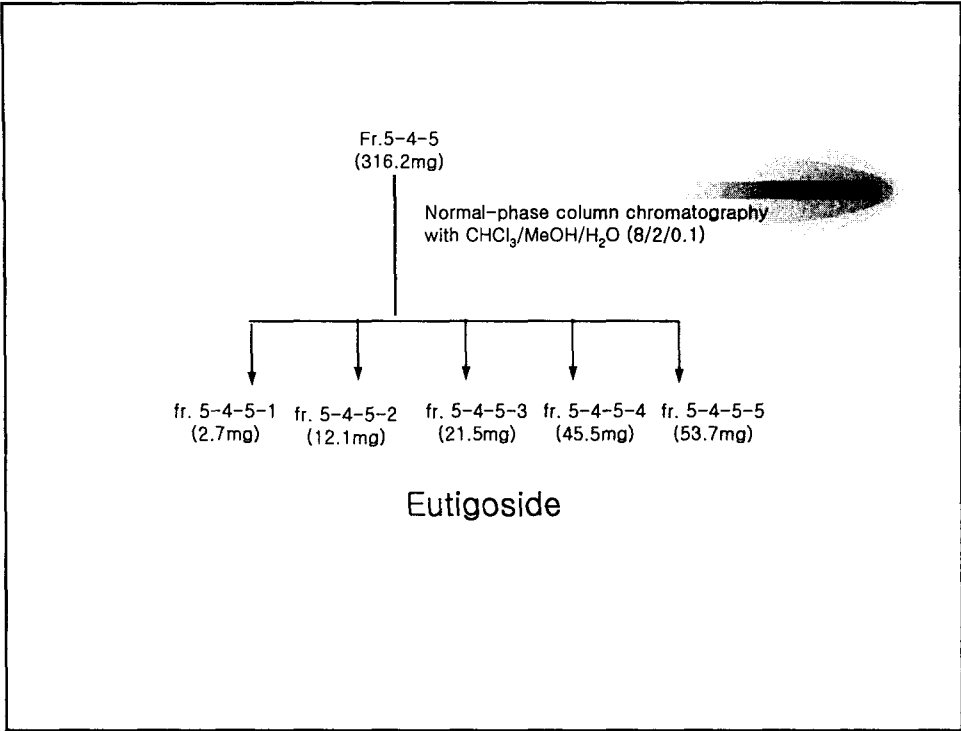


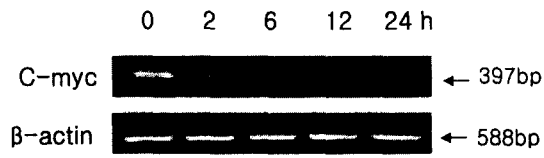




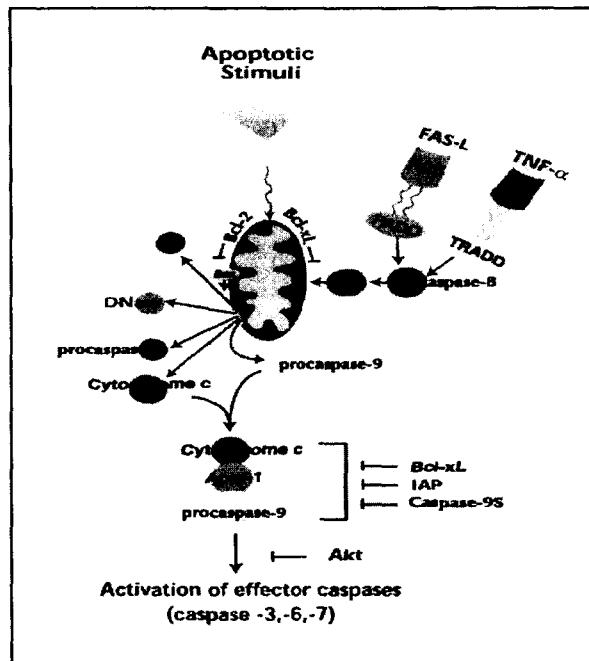


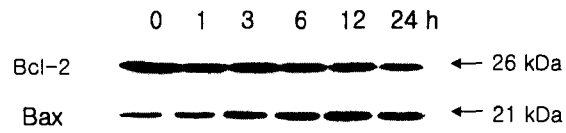




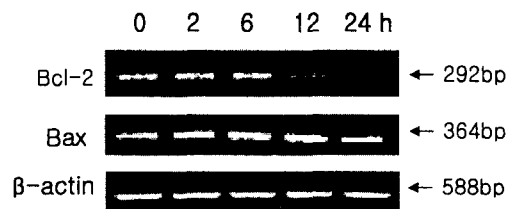


Modulation of expression of c-myc mRNA by EtOAc extract of *Eurya emarginata* in HL-60 cells.

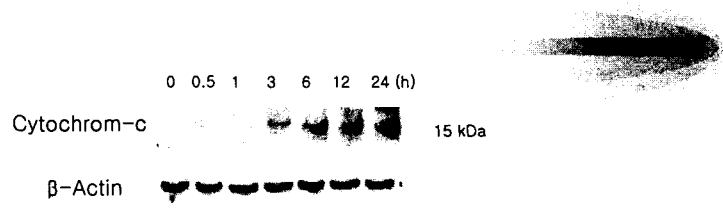




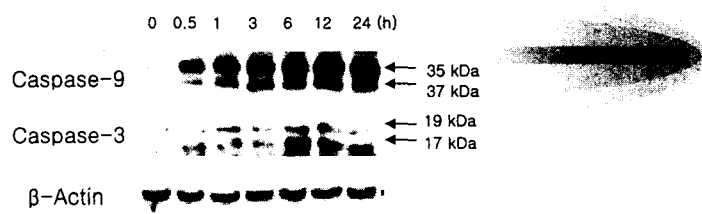
Immunoblot analysis of Bcl-2 and Bax following treatment of EtOAc subfraction (Fr. 5-4-5) of *E. emarginata*.



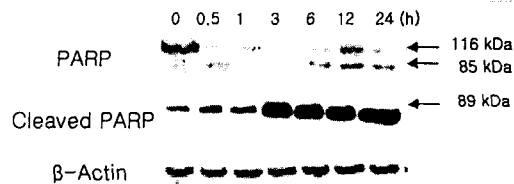
Modulation of expression of Bcl-2 and Bax mRNA by EtOAc extract of *Eurya emarginata* in HL-60 cells.



Immunoblot analysis of cytochrome-c following treatment of EtOAc subfraction (Fr. 5-4-5) of *E. emarginata*.



Immunoblot analysis of caspase-9 and caspase-3 following treatment of EtOAc subfraction (Fr. 5-4-5) of *E. emarginata*.



Expression and proteolytic cleavage pattern of poly-(ADP-ribose) polymerase (PARP) following treatment of EtOAc subfraction(EF.5-4-5) of *E. emarginata*.

Summary

1. Extracts of the leaves of *Eurya emarginata* markedly inhibited the growth of leukemia cells such as HL-60, KG-1, U937, K562, and Jurkat.
2. When HL-60 cells were treated with the extract, DNA fragmentation, morphological changes and sub-G1 hypodiploid cells were observed. The expressions of c-myc mRNA were also dramatically decreased.
3. Cornoside and Eutigoside were isolated from the leaves of *Eurya emarginata*.
4. Eutigoside induced apoptosis through down-regulation of Bcl-2 expression and activation of caspases.