Table 1 IC_{50} values of phototoxic chemicals obtained with SOL 500 solar-simulator

Lab	Chemicals	Non-irradiation						Irradiation						PIF					average
		Experiment no.						Experiment no.						Experiment no.					
		1	2	3	4	5	Average	1	2	3	4	5	Average	1	2	3	4	5	
A	Anthracene	> 1000	> 1000	> 1000	-	-	> 1000	0.47	0.0055	0.84	-	-	0.44	> 2120	> 182708	> 1190	-	-	> 62006
	Bithionol	6.6	6.9	6.3	-	-	6.6	0.38	0.028	0.29	-	-	0.23	17	246	21	-	-	95
	Chlorpromazine HCl	7.0	4.9	7.1	-	-	6.3	0.030	< 0.0030	0.0094	-	-	< 0.014	233	> 1637	758	-	-	> 876
	Bergapten	> 1000	> 1000	-	-	-	> 1000	84	23	-	-	-	53	> 12	> 43	-	-	-	> 28
	Amiodarone HCl	48	27	28	-	-	34	7.7	7.8	7.7	-	-	7.7	6.2	3.5	3.7	-	-	4.5
	Chlorhexidine 2HCl	27	16	21	-	-	21	22	7.8	16	-	-	15	1.2	2.0	1.3	-	-	1.5
	SDS	75	73	-	-	-	74	73	31	-	-	-	52	1.0	2.3	-	-	-	1.7
B	Anthracene	> 1000	> 1000	> 1000	> 1000	-	> 1000	< 0.78	0.08371	0.067	0.028	-	< 0.24	> 1280	> 11947	> 14855	> 35649	-	> 15933
	Bithionol	a)	13	18	3.5	-	12	2.3	6.6	4.3	2.4	-	3.9	b)	2.0	4.2	1.5	-	2.6
	Chlorpromazine HCl	7.5	10	9.9	5.8	-	8.3	< 0.78	4.5	0.85	0.55	-	< 1.7	> 9.6	2.2	12	11	-	> 8.7
	Bergapten	> 1000	> 1000	> 1000	> 1000	-	> 1000	< 0.78	> 2.5	> 2.5	a)	-	a)	> 1280	a)	a)	a)	-	a)
	Amiodarone HCl	116	48	51	-	-	72	3.0	7.8	4.5	-	-	5.1	39	6.2	11	-	-	19
	Chlorhexidine 2HCl	11	12	21	5.7	-	12	8.2	12	19	4.6	-	11	1.3	1.0	1.1	1.2	-	1.2
	SDS	b)	44	47	-	-	46	41	41	43	-	-	42	b)	1.1	1.1	-	-	1.1
C	Anthracene	> 1000	> 1000	-	-	-	> 1000	< 0.0078	< 0.0078	-	-	-	< 0.0078	> 128205	> 128205	-	-	-	> 128205
	Bithionol	7.2	4.4	-	-	-	5.8	0.080	0.50	-	-	-	0.29	90	9	-	-	-	49
	Chlorpromazine HCl	5.3	6.2	-	-	-	5.7	0.22	0.12	-	-	-	0.17	24	53	-	-	-	38
	Bergapten	53	22	-	-	-	38	< 0.0078	< 0.0078	-	-	-	< 0.0078	> 6795	> 2821	-	-	-	> 4808
	Amiodarone HCl	46	33	56	-	-	45	5.4	6.0	2.3	-	-	4.6	8.5	5.5	24	-	-	13
	Chlorhexidine 2HCl[b]	13	15	9.7	69	60	33	4.1	7.7	2.8	33	13	12	3.3	1.9	3.5	2.1	4.8	3.1
	SDS	19	31	30	17	-	24	17	37	34	15	-	26	1.1	0.84	0.86	-	-	0.93
D	Anthracene	> 1000	> 1000	-	-	-	> 1000	0.070	0.024	-	-	-	0.047	> 14249	> 41558	-	-	-	> 27903
	Bithionol	3.2	3.6	3.9	-	-	3.6	0.46	0.28	0.26	-	-	0.33	7.0	13	15	-	-	12
	Chlorpromazine HCl	18	9.8	10	4.6	3.1	9.2	0.17	0.34	0.33	0.21	0.19	0.25	106	29	32	21	17	41
	Bergapten	> 1000	> 1000	-	-	-	> 1000	2.3	0.29	-	-	-	1.3	> 433	> 3478	-	-	-	> 1956
	Amiodarone HCl	23	16	21	-	-	20	2.6	2.0	2.0	-	-	2.2	8.9	7.9	11	-	-	9.2
	Chlorhexidine 2HCl	11	16	15	-	-	14	6.5	6.5	5.5	-	-	6.1	1.7	2.5	2.8	-	-	2.3
	SDS	34	38	39	-	-	37	15	37	38	-	-	30	2.3	1.0	1.0	-	-	1.5

a: IC50 value was not able to determine from the result
b: DMSO was used as the vehicle in the exp. no. 4 and 5.
Lab A: n=12 for control, n=4 for chemicals
Lab B: n=6 or 2 for control, n=2 for chemicals
Lab C: n=8 for control, n=5 for chemicals
Lab D: n=4 for control, n=4 for chemicals

Table 2 IC50 values of chlorpromazine HCl obtained with various light sources

Lab	Non-irradiation Experiment no.						Solar simulator	Irradiation Experiment no.						PIF Experiment no.					average
	1	2	3	4	5	Average		1	2	3	4	5	Average	1	2	3	4	5	
A	7.0	4.9	7.1	-	-	6.3	SOL 500	0.030	< 0.0030	0.0094	-	-	< 0.014	233	> 1633	758			> 876
							WACOM	0.27	0.050	0.023	-	-	0.12	25	98	315			146
B	7.5	10	9.9	5.8	-	8.3	SOL 500	< 0.78	4.5	0.85	0.55	-	< 1.7	> 9.6	2.3	12	11		> 8.7
	6.0	6.8	11	5.9	-	7.4	Trans Illuminator	< 0.78	3.7	0.69	0.54	-	< 1.4	> 7.7	1.9	15	11		> 8.9
C	5.3	6.2	-	-	-	5.7	SOL 500	0.22	0.12	-	-	-	0.17	24	53				38
	3.4	9.0	4.8	-	-	5.8	WACOM	0.50	1.0	0.043	-	-	0.52	6.8	8.8	112			43
D	18	9.8	10	4.6	3.1	9.2	SOL 500	0.17	0.34	0.33	0.21	0.19	0.25	106	29	32	21	17	41
	4.6	3.1	-	-	-	3.8	SERIC	0.24	0.17	-	-	-	0.20	19	19				19
							ATLAS	0.56	0.40	-	-	-	0.48	8.1	7.9				8.0

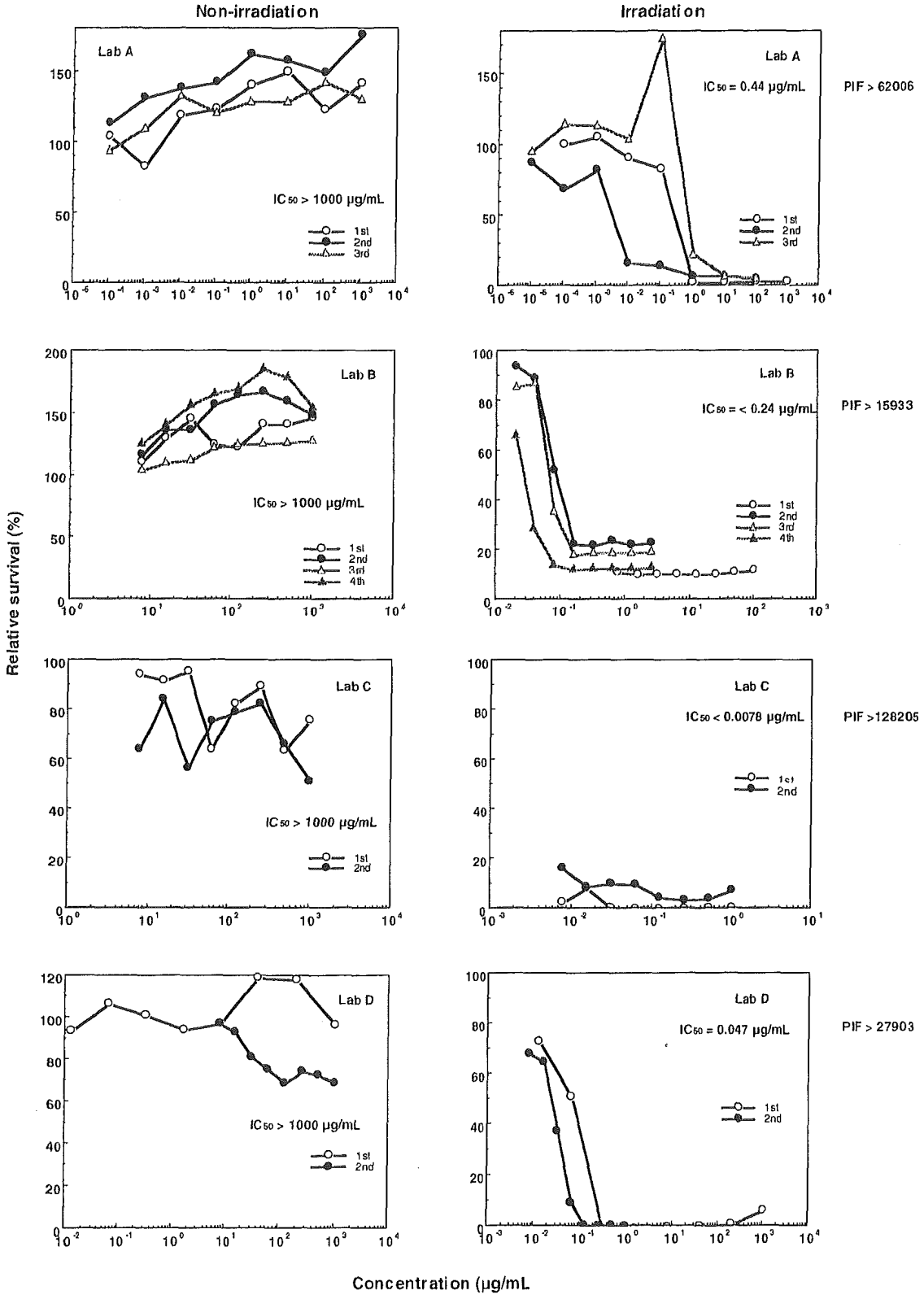

Fig. 1-a Results of phototoxicity tests with anthracene

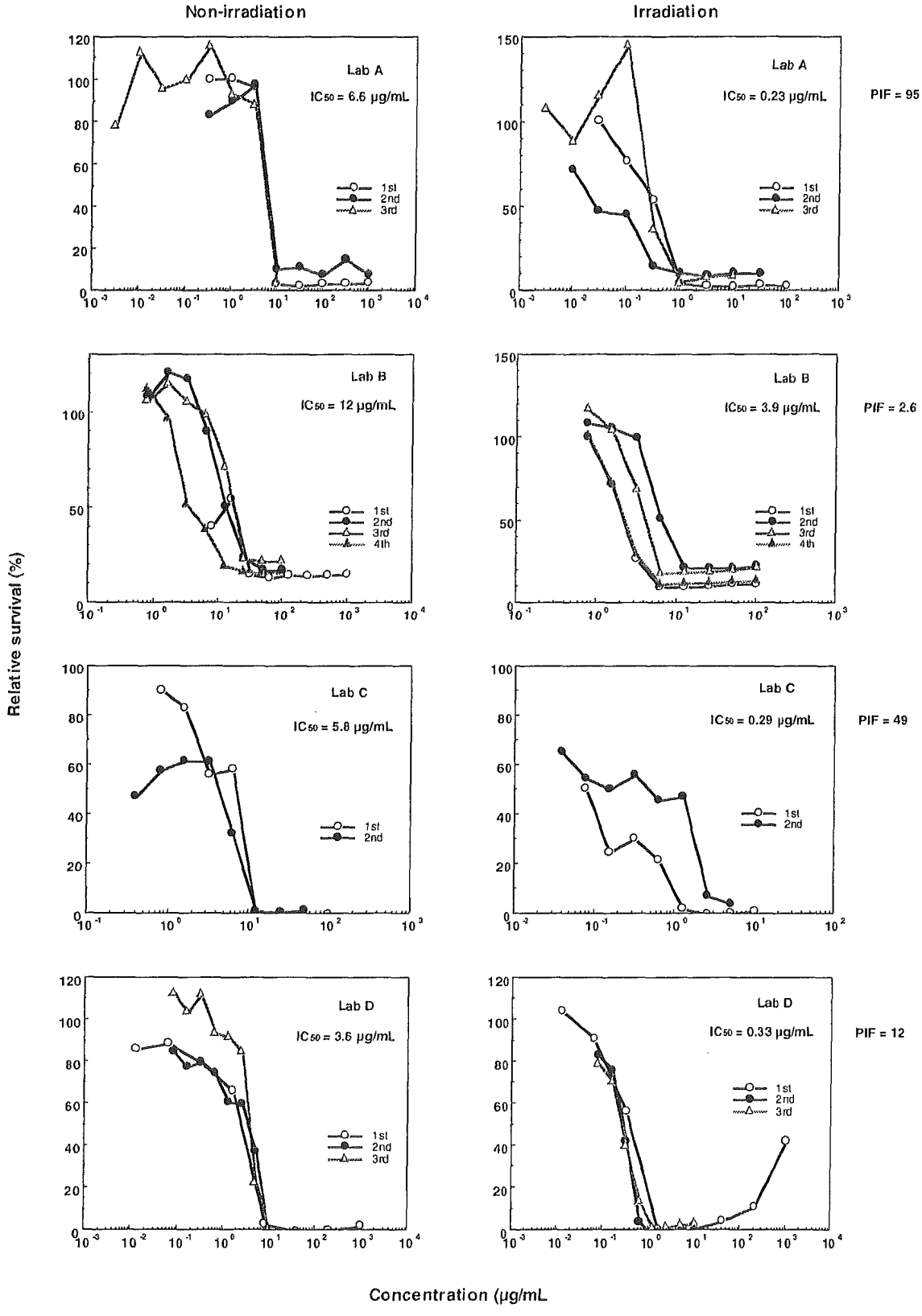

Fig. 1-b Results of phototoxicity tests with bithionol

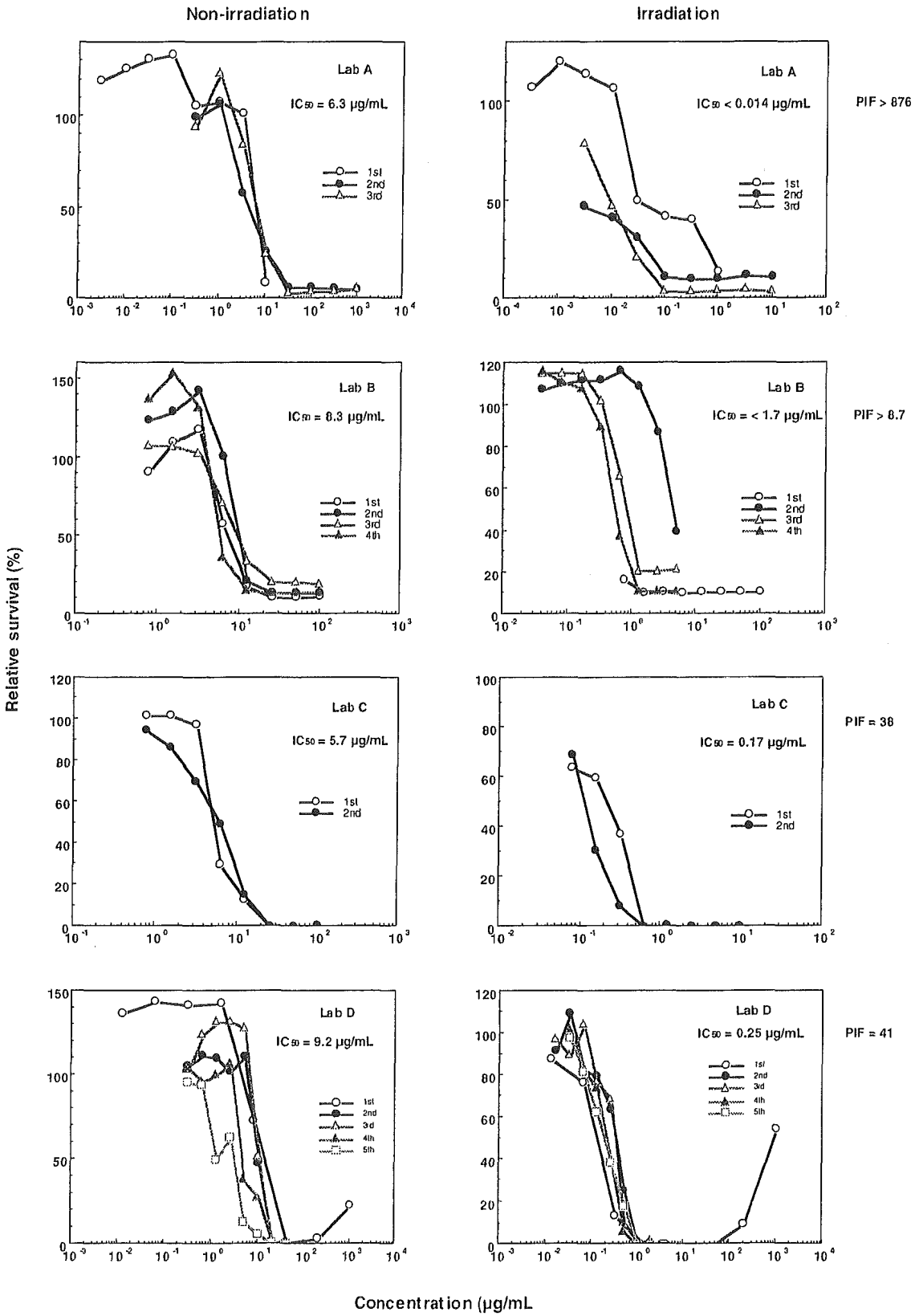

Fig. 1-c Results of phototoxicity tests of chlorpromazine HCl

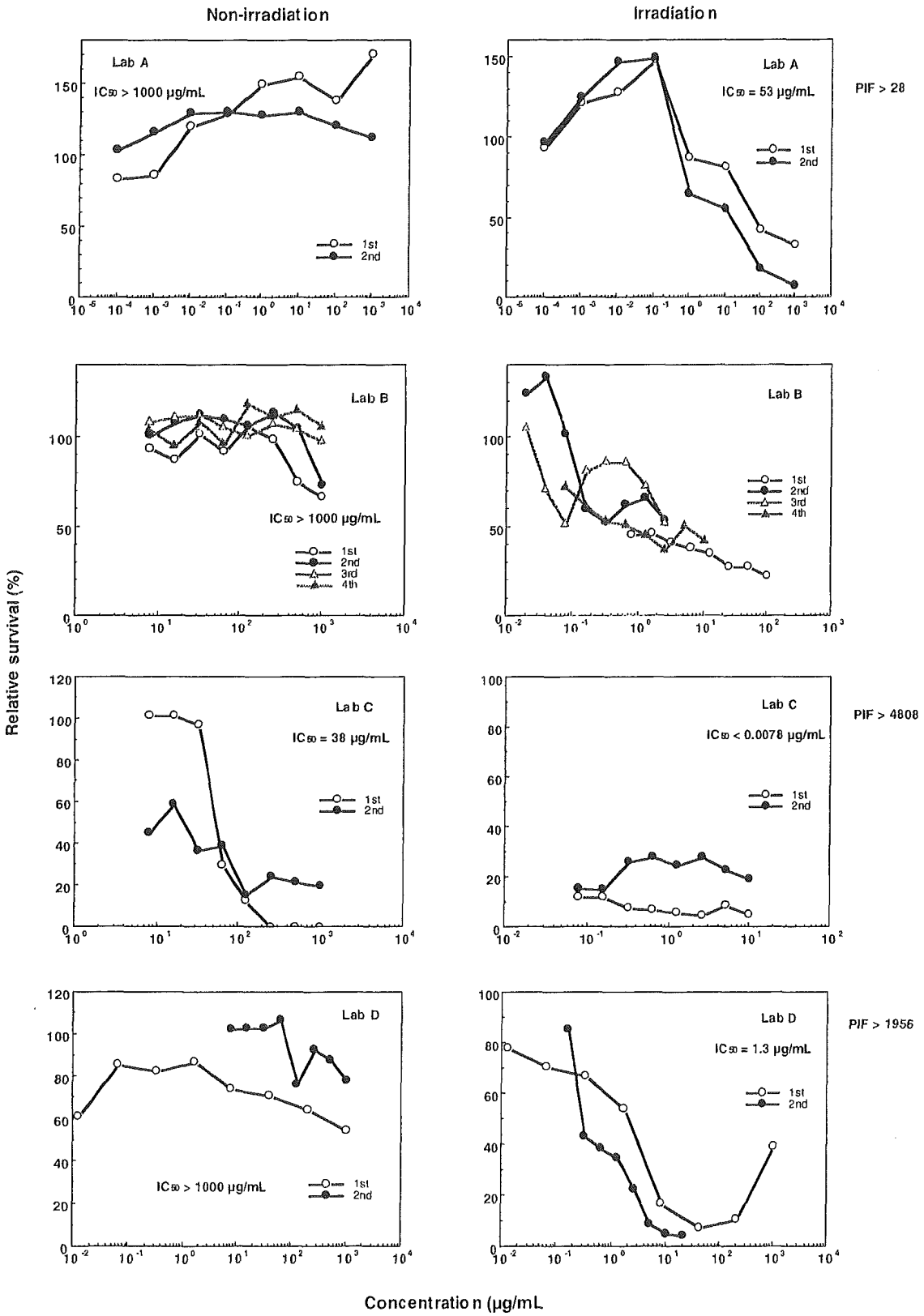

Fig. 1-d Results of phototoxicity tests of bergapten

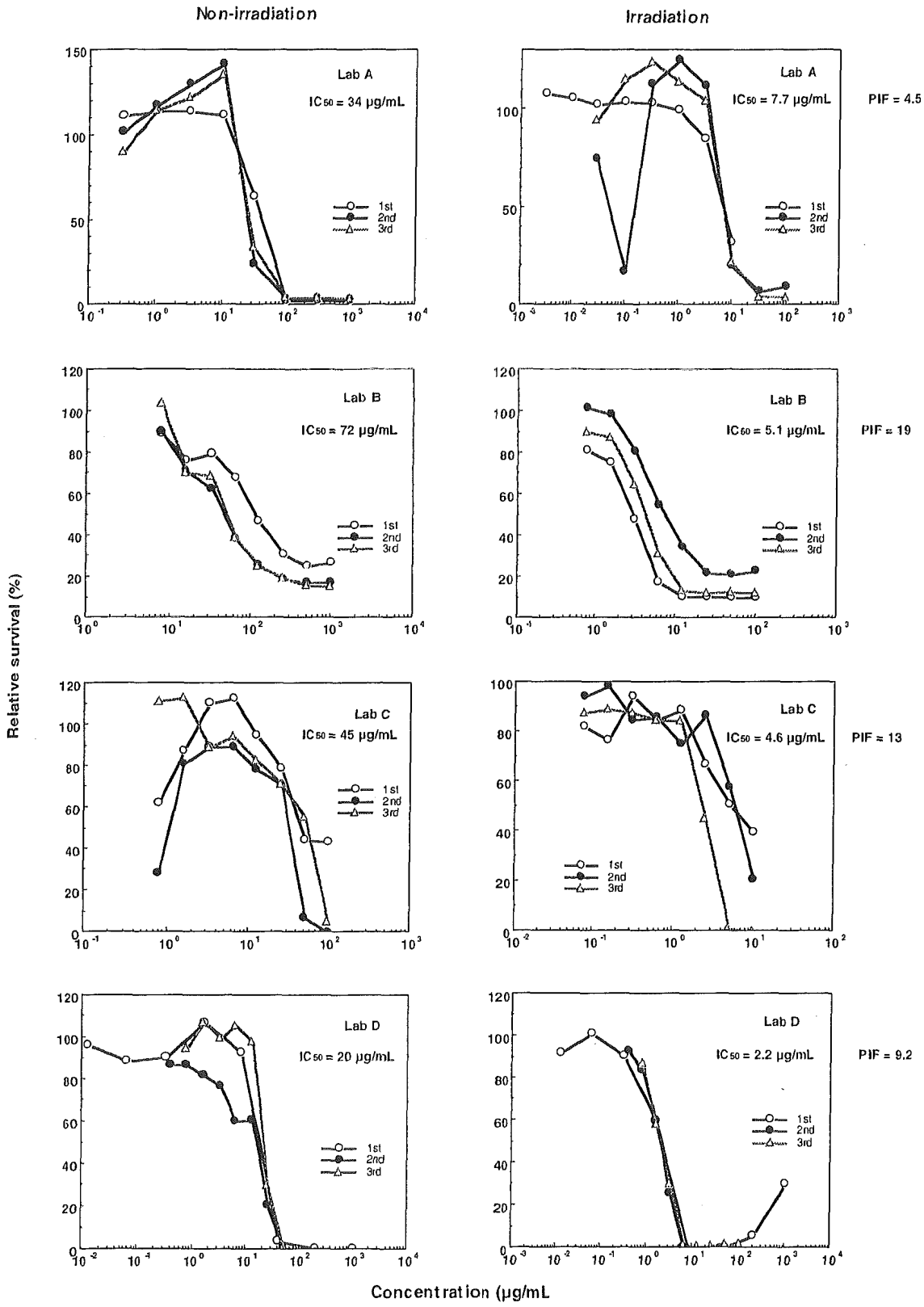

Fig. 1-e Results of phototoxicity tests with amiodarone HCl

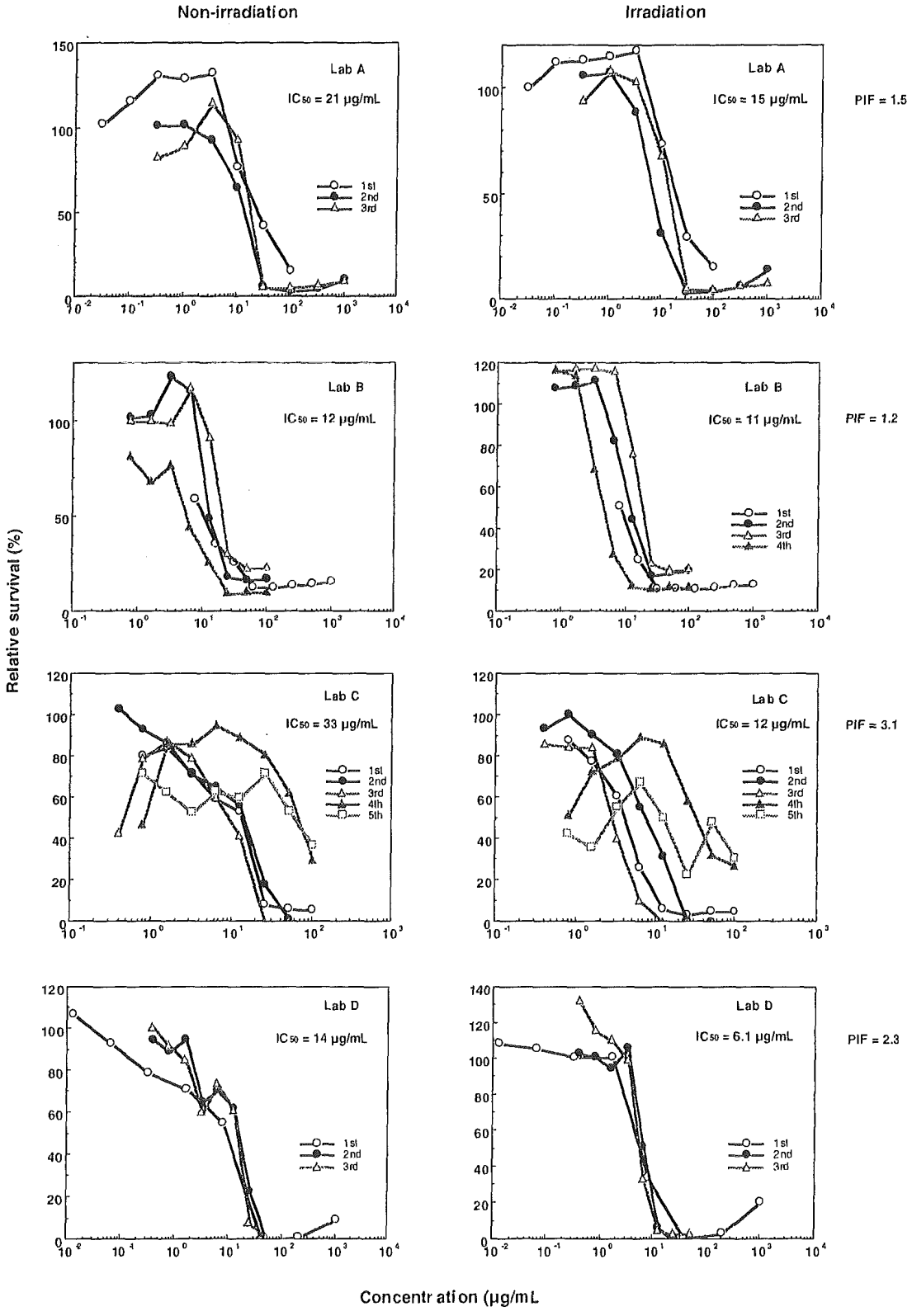

Fig. 1-f Result of phototoxicity tests of chlorhexidine 2HCl

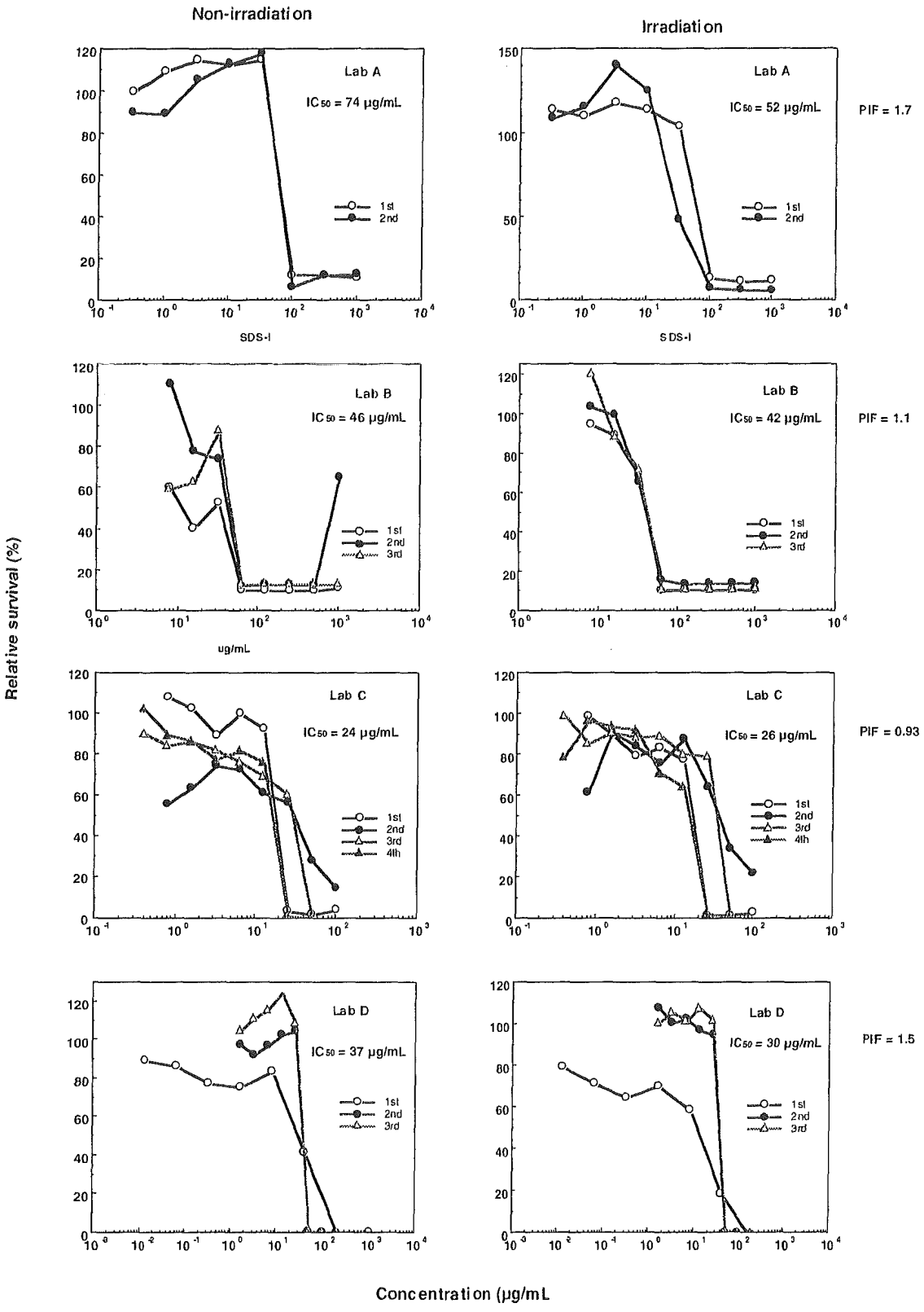

Fig. 1-g Result of phototoxicity tests of SDS

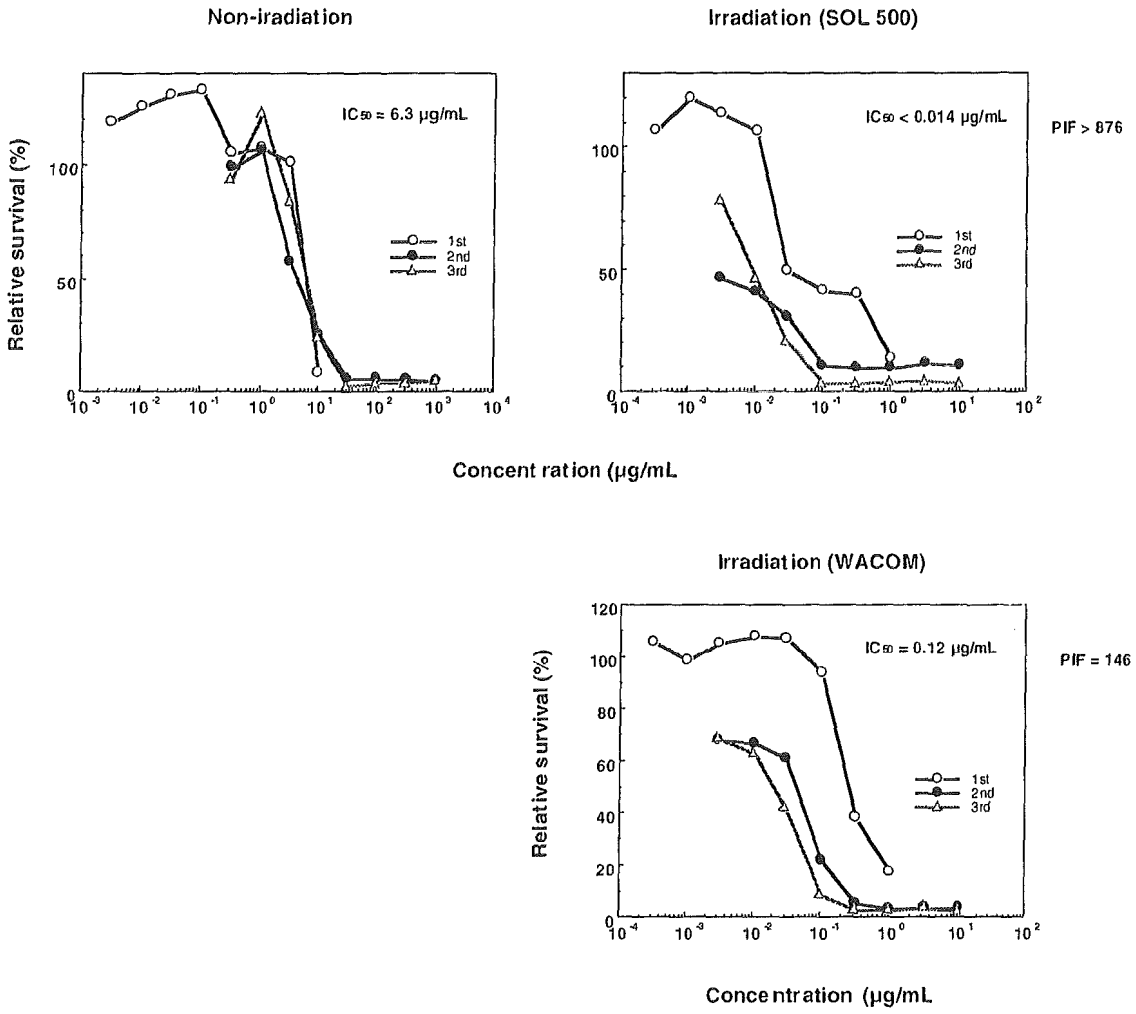

Fig. 2-a Results of phototoxicity tests from two solar simulators with CPZ by Lab A

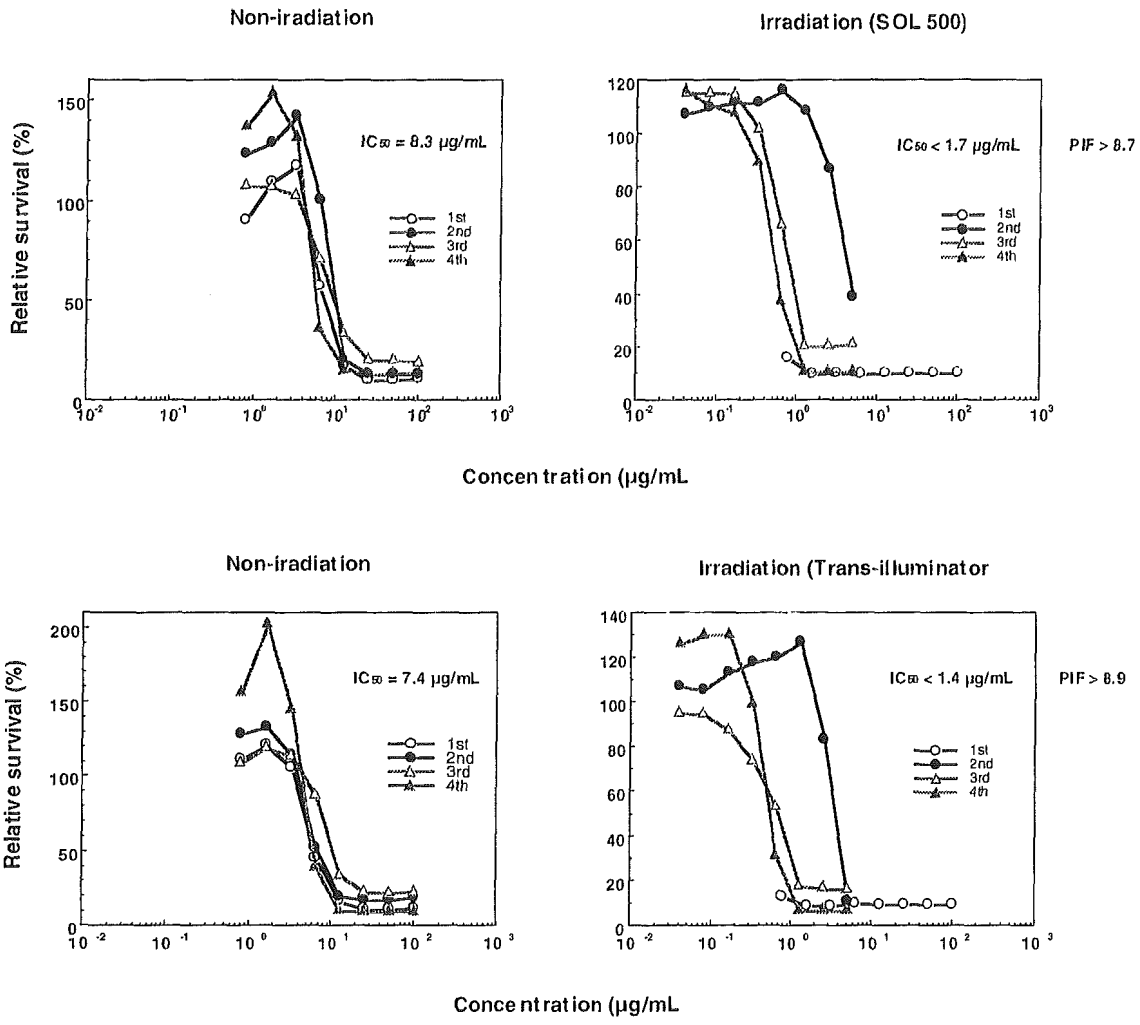

Fig. 2-b Results of phototoxicity tests from a solar simulator and a black lamp with CPZ by Lab B

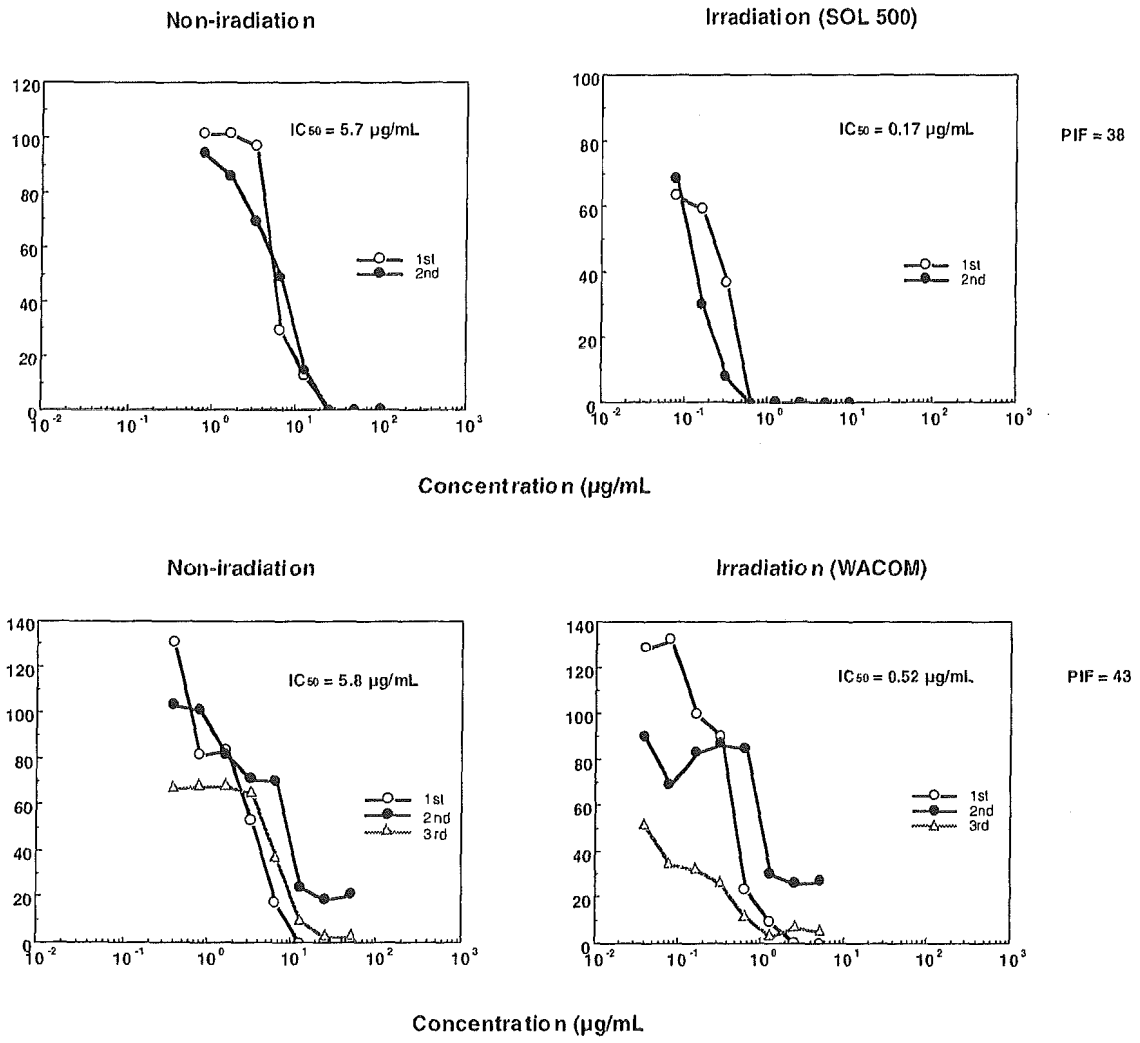

Fig. 2-c Results of phototoxicity tests from two solar simulators with CPZ by Lab C

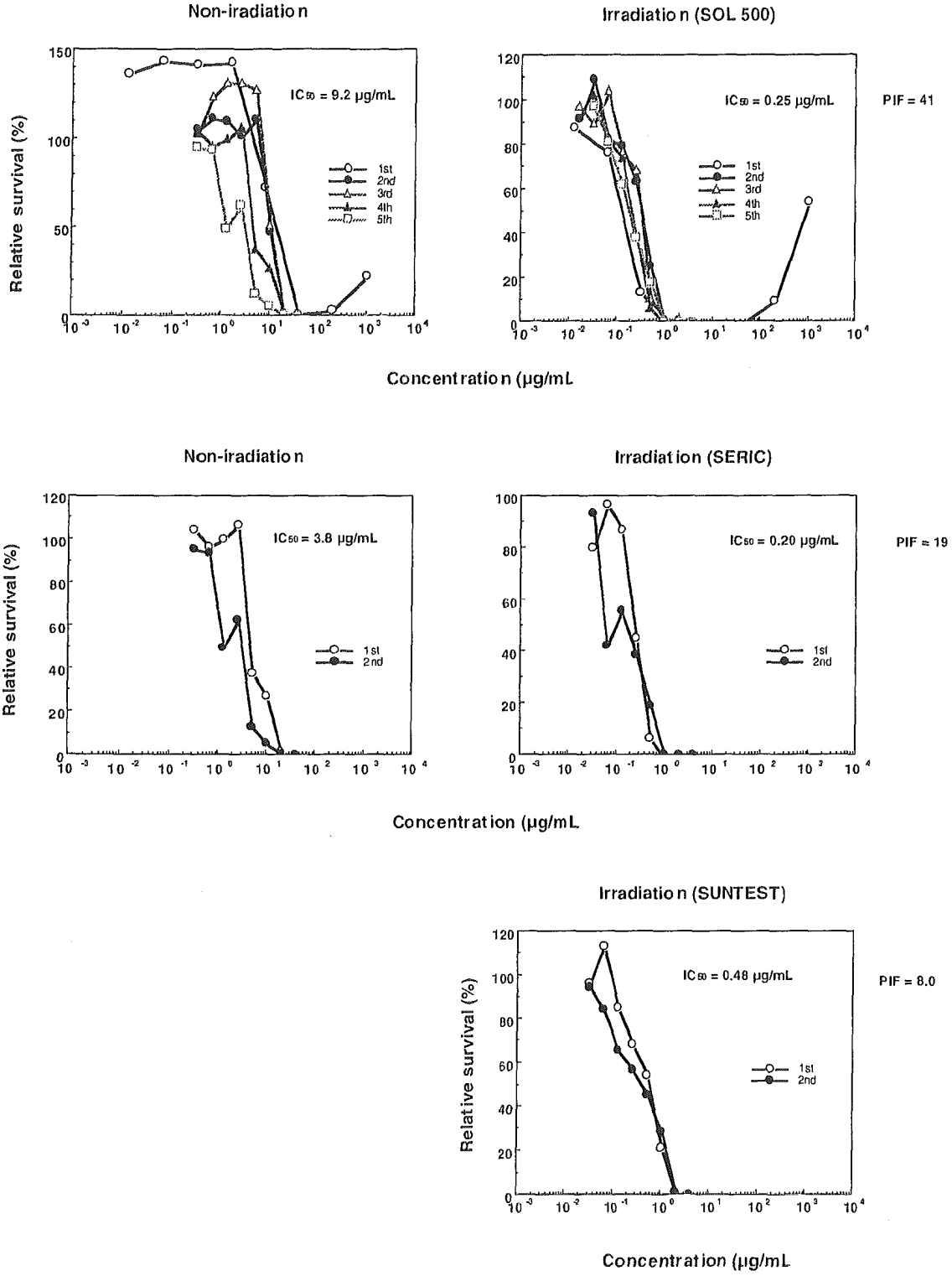

Fig. 2-d Results of phototoxicity tests from three solar simulators with CPZ by Lab D

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以降P.342－P.457は雑誌/図書等に掲載された論文となりますので下記の資料をご参照ください。

Effects of methionine on selenium embryotoxicity in cultured rat embryos. Usami M, Tabata H, Ohno Y.
Teratog Carcinog Mutagen. 2002;22(4):301-8.

Sulfation of bisphenol A abolished its estrogenicity based on proliferation and gene expression in human breast cancer MCF-7 cells. Shimizu M, Ohta K, Matsumoto Y, Fukuoka M, Ohno Y, Ozawa S.
Toxicol In Vitro. 2002 Oct;16(5):549-56.

Estrogen receptor binding assay of chemicals with a surface plasmon resonance biosensor. Usami M, Mitsunaga K, Ohno Y.
J Steroid Biochem Mol Biol. 2002 May;81(1):47-55.

ICH guidelines--implementation of the 3Rs (refinement, reduction, and replacement): incorporating best scientific practices into the regulatory process. Ohno Y.
ILAR J. 2002;43 Suppl:S95-8. Review.

動物実験代替法の現状と課題 大野 泰雄
バイオサイエンスとインダストリー(0914-8981)60巻8号
Page551-555(2002.08)

香粧品の安全性とその試験法－代替法を含めてその現状と将来-
大野 泰男 皮膚と美容 Vol.35,No.1,2003 p2-8

Effects of 17beta-estradiol and xenoestrogens on the neuronal survival in an organotypic hippocampal culture.
Sato K, Matsuki N, Ohno Y, Nakazawa K.
Neuroendocrinology. 2002 Oct;76(4):223-34.

20021027

The enhancing effect of a triethanolamine-ethanol-isopropyl myristate mixed system on the skin permeation of acidic drugs.
Fang L, Kobayashi Y, Numajiri S, Kobayashi D, Sugibayashi K, Morimoto Y.
Biol Pharm Bull. 2002 Oct;25(10):1339-44.

In vitro skin permeation of morphine hydrochloride during the finite application of penetration-enhancing system containing water, ethanol and l-menthol. Morimoto Y, Wada Y, Seki T, Sugibayashi K. Biol Pharm Bull. 2002 Jan;25(1):134-6.

Effect of squalene monohydroperoxide on cytotoxicity and cytokine release in a three-dimensional human skin model and human epidermal keratinocytes. Uchino T, Tokunaga H, Onodera H, Ando M. Biol Pharm Bull. 2002 May;25(5):605-10.

フタル酸時エチルの in vitro 経皮吸収に関する研究
徳永 裕司、鄭 然孫、内野 正、安藤 正典 粧技誌 第 35 巻,312-316,2001.

Disposition of a low dose of 14C-bisphenol A in male rats and its main biliary excretion as BPA glucuronide. Kurebayashi H, Betsui H, Ohno Y. Toxicol Sci. 2003 May;73(1):17-25. Epub 2003 Apr 15.

Disposition of a low dose of bisphenol a in male and female cynomolgus monkeys. Kurebayashi H, Harada R, Stewart RK, Numata H, Ohno Y. Toxicol Sci. 2002 Jul;68(1):32-42.

動物モデルによる新しい評価法－in virto 光細胞毒性試験について－
若栗 忍、田中 憲穂 アニテックス Vol.14 No.2 44-48 (2002)

20021027

ヒト培養肝細胞の機能　その各種機能発現】ヒト培養細胞の肝機能発現とその利用法　バイオ人工肝の多角的な応用をめざして

永森　靜志, 遠藤　仁, 金井　好克, 宮崎　正博, 本間　正充, 宮村　達男, 鈴木　哲朗, 相崎　英樹, 梅田　誠, 田中　憲穂, 佐々木　澄志, 千葉　寛, 細川　正清, 松浦　知和, 小田　裕昭, 吉田　彪

細胞(1346-7557)34 巻 13 号 Page516-523(2002.11)

ヒト培養肝細胞の機能　その各種機能発現】ヒト肝細胞樹立株を用いた毒性試験　　佐々木　澄志, 浅田　晋, 田中　憲穂, 梅田　誠

細胞(1346-7557)34 巻 13 号 Page550-553(2002.11)

酒匂川流域水系の河川水を用いた細胞毒性試験

若栗　忍、高橋　淳子、林　真、田中　憲穂　水環境学会誌　25(11),669-674 (2002)