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APPENDIX

APPENDIX
TABLES OF EXPERIMENTAL RESULTS

Table 2 The percentage of H460 cell viability was determined by MTT assay after treatment with various concentrations of DF-A (0-100 μM) for 24 h (concentration-dependency).

DF-A (μM)	Cell viability (%)
0	100.00 ± 0.00
0.5	99.90 ± 0.29
1	99.67 ± 0.26
2.5	96.06 ± 0.38
5	93.24 ± 1.03
10	77.84 ± 0.12*
25	62.33 ± 0.92*
50	50.60 ± 1.37*
100	9.33 ± 0.74*

Values are means of 3 independent triplicate experiments ± SE. * $p<0.05$ versus non-treated control. Determined by One-way ANOVA.

Table 3 The percentage of HaCat cell viability was determined by MTT assay after treatment with various concentrations of DF-A (0-100 μM) for 24 h (concentration-dependency).

DF-A (μM)	Cell viability (%)
0	100.00 ± 2.47
0.5	98.09 ± 1.11
1	96.12 ± 0.87
2.5	91.38 ± 0.33
5	91.83 ± 1.31
10	91.05 ± 2.26
25	81.72 ± 0.70
50	58.14 ± 0.34*
100	20.40 ± 0.18*

Values are means of 3 independent triplicate experiments ± SE. * $p<0.05$ versus non-treated control. Determined by One-way ANOVA.

Table 4 The percentage of apoptotic H460 cells was determined by MTT assay after treatment with various concentrations of DF-A (0-100 μM) for 24 h (concentration-dependency).

DF-A (μM)	Apoptotic cells (%)
0	0.00 ± 0.00
0.5	1.12 ± 0.29
1	0.84 ± 0.26
2.5	3.90 ± 0.38
5	6.58 ± 1.03
10	21.72 ± 20.90*
25	34.49 ± 0.92*
50	45.20 ± 2.77*
100	88.14 ± 0.74*

Values are means of 3 independent triplicate experiments ± SE. * $p<0.05$ versus non-treated control. Determined by One-way ANOVA.

Table 5 The percentage of apoptotic HaCat cells was determined by MTT assay after treatment with various concentrations of DF-A (0-100 μM) for 24 h (concentration-dependency).

DF-A (μM)	Apoptotic cells (%)
0	0.00 ± 0.708
0.5	1.90 ± 0.33
1	3.87 ± 0.38
2.5	8.61 ± 0.37
5	8.16 ± 0.40
10	8.94 ± 0.49
25	18.27 ± 0.58
50	41.85 ± 0.84*
100	75.59 ± 0.76*

Values are means of 3 independent triplicate experiments ± SE. * $p<0.05$ versus non-treated control. Determined by One-way ANOVA.

Table 6 The percentage of H460 cell viability was determined by MTT assay after treatment with various non-concentrations of DF-A (0-5 μM) for 0, 6, 9, 12 or 24 h (time- and concentration- dependency).

Time (h)	DF-A (μM)				
	0	0.5	1	2.5	5
0	100.00 ± 0.18	100.00 ± 0.15	100.00 ± 0.22	100.00 ± 0.59	100.00 ± 0.22
6	72.19 ± 1.00	67.24 ± 0.77	65.03 ± 0.71	55.09 ± 0.50	34.43 ±0.62*
9	69.30 ± 1.00	60.62 ± 0.78	59.88 ± 0.67	47.49 ± 0.76*	38.66 ±0.61*
12	64.18 ± 0.93	57.20 ± 0.74	51.92 ± 0.83	44.80 ± 0.63*	36.44 ±0.58*
24	56.19 ± 0.68	43.32 ± 0.70	39.89 ± 0.64	36.93 ± 0.61*	26.06 ± 0.32*

Values are means of 3 independent triplicate experiments ± SE. *$p<0.05$ versus non-treated control at time 0. Determined by One-way ANOVA.

Table 7 The percentage of apoptotic H460 cells was determined by MTT assay after treatment with various non-concentrations of DF-A (0-5 μM) for 24 h (concentration-dependency).

DF-A (μM)	Apoptotic cells (%)
0	29.80 ± 0.68
0.5	37.67 ± 0.70
1	43.10 ± 0.64
2.5	57.06 ± 0.61
5	78.93 ± 0.32

Values are means of 3 independent triplicate experiments ± SE. *$p<0.05$ versus non-treated control. Determined by One-way ANOVA.

Table 8 The percentage of HaCat cell viability was determined by MTT assay after treatment with various non-concentrations of DF-A (0-5 μM) for 0, 6, 9, 12 or 24 h (time- and concentration- dependency).

Time (h)	DF-A (μM)				
	0	0.5	1	2.5	5
0	100 ± 0.23	100 ± 0.33	100 ± 0.10	101.88 ± 0.46	100 ± 0.32
6	12.10 ± 0.22	12.41 ± 0.16	13.99 ± 0.12	14.48 ± 0.20	14.86 ± 0.23
9	13.93 ± 0.13	13.75 ± 0.05	16.18 ± 0.03	15.02 ± 0.14	17.52 ± 0.23
12	14.47 ± 0.12	13.96 ± 0.09	16.01 ± 0.06	15.94 ± 0.17	14.93 ± 0.32
24	12.25 ± 0.21	12.14 ± 0.14	13.49 ± 0.09	12.92 ± 0.13	14.69 ± 0.22

Values are means of 3 independent triplicate experiments ± SE. *$p<0.05$ versus non-treated control at time 0. Determined by One-way ANOVA.

Table 9 The percentage of relative sub G_0 fraction of H460 cells was determined by PI staining and flow cytometry after treatment with various non-concentrations of DF-A (0-5 μM) for 24 h (concentration- dependency).

DF-A (μM)	Sub G_0 fraction (%)
0	19.17 ± 0.26
0.5	19.40 ± 0.49
1	21.68 ± 0.92
2.5	24.47 ± 0.74
5	35.15 ± 0.58*

Values are means of 3 independent triplicate experiments ± SE. * $p<0.05$ versus non-treated control. Determined by One-way ANOVA.

Table 10 The percentage of Colony size of H460 cells was determined by image analyzer after treatment with various non-concentrations of DF-A (0-5 μM) for 2 weeks (concentration- dependency).

DF-A (μM)	Colony size (%)
0	100.00 ± 1.71
0.5	98.72 ± 1.70
1	72.39 ± 0.96*
2.5	61.07 ± 1.97*
5	19.25 ± 0.77*

Values are means of 3 independent triplicate experiments ± SE. *p<0.05 versus non-treated control. Determined by One-way ANOVA.

Table 11 The percentage of Colony number of H460 cells was determined by image analyzer after treatment with various non-concentrations of DF-A (0-5 μM) for 2 weeks (concentration- dependency).

DF-A (μM)	Colony size (%)
0	100.00 ± 2.00
0.5	94.17 ± 2.30
1	86.83 ± 3.85
2.5	54.43 ± 1.57*
5	37.97 ± 1.36*

Values are means of 3 independent triplicate experiments ± SE. *p<0.05 versus non-treated control. Determined by One-way ANOVA.

Table 12 The relative protein of pAkt/Akt was determined by Western blot analysis after untreated or treated cells with DF-A 5 μM for 0, 6, 12 or 24 h (time-dependency).

	Relative protein level	
	DF-A (μM)	
Time (h)	0	5
0	1.00 ± 0.00	1.00 ± 0.00
6	1.00 ± 0.03	0.85 ± 0.09
12	1.00 ± 0.08	0.41 ± 0.05*
24	1.00 ± 0.01	0.50 ± 0.03*

The protein signals were quantified by densitometry and mean data from independent experiments were normalized to the results. Values are means of 3 independent triplicate experiments ± SE. *$p<0.05$ versus untreated control at each indicated time. Determined by One-way ANOVA.

Table 13 The relative protein of Mcl-1 was determined by Western blot analysis after untreated or treated cells with DF-A 5 μM for 0, 6, 12 or 24 h (time-dependency).

	Relative protein level	
	DF-A (μM)	
Time (h)	0	5
0	1.00 ± 0.00	1.00 ± 0.00
6	0.92 ± 0.04	0.81 ± 0.02
12	0.61 ± 0.07	0.56 ± 0.03
24	0.59 ± 0.01	0.50 ± 0.08

The protein signals were quantified by densitometry and mean data from independent experiments were normalized to the results. Values are means of 3 independent triplicate experiments ± SE. *$p<0.05$ versus untreated control at each indicated time. Determined by One-way ANOVA.

Table 14 The relative protein of Bax was determined by Western blot analysis after untreated or treated cells with DF-A 5 μM for 0, 6, 12 or 24 h (time-dependency).

	Relative protein level	
	DF-A (μM)	
Time (h)	0	5
0	1.00 ± 0.00	1.00 ± 0.00
6	1.00 ± 0.02	1.00 ± 0.01
12	1.00 ± 0.08	0.95 ± 0.02
24	1.00 ± 0.05	1.00 ± 0.07

The protein signals were quantified by densitometry and mean data from independent experiments were normalized to the results. Values are means of 3 independent triplicate experiments ± SE. *$p<0.05$ versus untreated control at each indicated time. Determined by One-way ANOVA.

Table 15 The relative protein of Cav-1 was determined by Western blot analysis after untreated or treated cells with DF-A 5 μM for 0, 6, 12 or 24 h (time-dependency).

	Relative protein level	
	DF-A (μM)	
Time (h)	0	5
0	1.00 ± 0.00	1.00 ± 0.00
6	0.92 ± 0.08	1.00 ± 0.02
12	0.91 ± 0.01	0.20 ± 0.05
24	0.92 ± 0.05	0.11 ± 0.03

The protein signals were quantified by densitometry and mean data from independent experiments were normalized to the results. Values are means of 3 independent triplicate experiments ± SE. *p<0.05 versus untreated control at each indicated time. Determined by One-way ANOVA.

Table 16 The relative protein of Bcl-2 was determined by Western blot analysis after untreated or treated cells with DF-A 5 μM for 0, 6, 12 or 24 h (time-dependency).

	Relative protein level	
	DF-A (μM)	
Time (h)	0	5
0	1.00 ± 0.00	1.00 ± 0.00
6	1.00 ± 0.09	0.65 ± 0.05
12	1.00 ± 0.02	0.63 ± 0.01
24	0.70 ± 0.05	0.41 ± 0.06

The protein signals were quantified by densitometry and mean data from independent experiments were normalized to the results. Values are means of 3 independent triplicate experiments ± SE. *$p<0.05$ versus untreated control at each indicated time. Determined by One-way ANOVA.

Table 17 The percentage of H460 cells proliferation was determined by MTT assay after treatment with various non-concentrations of DF-A (0-5 μM) for 0-72 h at various time points.

Time (h)	Relative cell proliferation				
	0	0.5	1	2.5	5
24	100.00 ± 0.34	95.55 ± 2.02	97.53 ± 0.95	100.64 ± 1.67	97.24 ± 3.00
48	100.00 ± 0.19	97.32 ± 1.18	95.23 ± 2.04	95.36 ± 2.39	96.32 ± 3.21
72	100.00 ± 0.98	99.75 ± 0.63	101.59 ± 0.88	97.72 ± 0.19	96.70 ± 1.10

Values are means ± SE from 3 independent experiments. *p<0.05 versus untreated control at each indicated time. Determined by One-way ANOVA.

Table 18 Relative cell migration (wound closure) of H460 cells was determined by wound healing assay after treatment with various non-concentrations of DF-A (0-5 μM) for 24 h.

Time (h)	Relative cell migration (wound closure)				
	DF-A (μM)				
	0	0.5	1	2.5	5
24	1.00 ± 0.00	0.79 ± 0.03	0.77 ± 0.02	0.77 ± 0.03	0.70 ± 0.00*

Values are means of 3 independent triplicate experiments ± SE. *p<0.05 versus untreated control. Determined by One-way ANOVA.

Table 19 Relative cell migration (wound closure) of H460 cells was determined by wound healing assay after treatment with various non-concentrations of DF-A (0-5 μM) for 24, 48 or 72 h.

Time (h)	Relative cell migration (wound-healing)	
	DF-A (μM)	
	0	5
24	1.00 ± 0.00	0.66 ± 0.02
48	1.61 ± 0.03	1.20 ± 0.02*
72	2.36 ± 0.03	1.85 ± 0.03*

Values are means of 3 independent triplicate experiments ± SE. *p<0.05 versus untreated control. Determined by One-way ANOVA.

Table 20 The relative protein of p-FAK/FAK, Rho-GTP and Rac-GTP was determined by western blot analysis after treatment with various non-concentrations of DF-A (0-5 μM) for 24 h (concentration-dependency).

Proteins	Relative protein level				
	DF-A (μM)				
	0	0.5	1	2.5	5
p-FAK/FAK	1.00 ± 0.00	0.92 ± 0.02	0.83 ± 0.08	0.21 ± 0.03*	0.28 ± 0.03*
Rho-GTP	1.00 ± 0.00	1.00 ± 0.05	1.00 ± 0.01	1.00 ± 0.06	0.76 ± 0.05*
Rac-GTP	1.00 ± 0.00	1.00 ± 0.01	1.00 ± 0.02	1.00 ± 0.07	0.97 ± 0.03

The protein signals were quantified by densitometry and mean data from independent experiments were normalized to the results. Values are means of 3 independent triplicate experiments ± SE. *$p<0.05$ versus untreated control at each indicated time. Determined by One-way ANOVA.

Table 21 The percentage of H460 cell viability was determined by MTT assay after pre-treatment with various non-concentration of DF-A (0-5 μM) prior to cisplatin treatment.

Treatment	Cell viability (%)
Control (DF-A 0 μM)	100.00 ± 0.00
DMSO 0.5 %	97.15 ± 0.22
Cisplatin 100 μM	47.23 ± 0.38*
Cisplatin 100 μM + DMSO 0.5 %	47.44 ± 1.05
Cisplatin 100 μM + DF-A 0.5 μM	45.12 ± 0.48
Cisplatin 100 μM + DF-A 1 μM	51.68 ± 0.03
Cisplatin 100 μM + DF-A 2.5 μM	46.92 ± 0.61
Cisplatin 100 μM + DF-A 5 μM	50.20 ± 0.76

Values are means of 3 independent triplicate experiments ± SE. *$p<0.05$ versus untreated control. Determined by One-way ANOVA.

Table 22 The percentage of H460 cell viability was determined by MTT assay after pre-treatment with various non-concentration of DF-A (0-5 μM) prior to etoposide treatment.

Treatment	Cell viability (%)
Control (DF-A 0 μM)	100.00 ± 0.00
DMSO 0.5 %	98.01 ± 0.68
Etoposide 100 μM	73.46 ± 0.09*
Etoposide 100 μM + DMSO 0.5 %	70.28 ± 0.18
Etoposide 100 μM + DF-A 0.5 μM	71.22 ± 0.31
Etoposide 100 μM + DF-A 1 μM	73.63 ± 0.25
Etoposide 100 μM + DF-A 2.5 μM	72.71 ± 0.53
Etoposide 100 μM + DF-A 5 μM	71.81 ± 0.44

Values are means of 3 independent triplicate experiments ± SE. *$p<0.05$ versus untreated control. Determined by One-way ANOVA.M

VITA

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