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## APPENDIX



## APPENDIX

## TABLES OF EXPERIMENTAL RESULTS

**Table 2** The percentage of H460 cell viability determined by MTT assay after treatment with various concentrations of TCS (0-10  $\mu$ M) for 24 h

The concentrations of TCS ( $\mu$ M)	Cell viability (%) (Mean $\pm$ SE)
0	100.00 $\pm$ 0.00
1	101.87 $\pm$ 0.27
2.5	99.70 $\pm$ 1.03
5	100.36 $\pm$ 2.52
7.5	97.20 $\pm$ 3.59
10	74.94 $\pm$ 0.32*

Data present the experimental values and means of three independent experiments  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 3** The percentage of apoptotic cells determined by Hoechst33342/PI staining assay after treatment with various concentrations of TCS (0-10  $\mu$ M) for 24 h

The concentrations of TCS ( $\mu$ M)	Cell apoptosis (%) (Mean $\pm$ SE)
0	1.00 $\pm$ 0.15
1	1.31 $\pm$ 0.50
2.5	1.41 $\pm$ 0.51
5	1.07 $\pm$ 0.30
7.5	1.03 $\pm$ 0.19
10	26.82 $\pm$ 0.96*

Data present the experimental values and means of three independent experiments  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 4** The percentage of H460 cell viability determined by MTT assay after treatment with various non-concentrations of TCS (0-7.5  $\mu$ M) for 0, 3, 6, 9, 12 or 24 h in detached condition

Time (h)	TCS ( $\mu$ M)			
	0	2.5	5	7.5
0	100.00 $\pm$ 0.00	100.00 $\pm$ 0.00	100.00 $\pm$ 0.00	100.00 $\pm$ 0.00
3	68.82 $\pm$ 2.32	66.91 $\pm$ 4.76	69.50 $\pm$ 1.60	63.45 $\pm$ 1.87
6	60.25 $\pm$ 3.75	65.53 $\pm$ 2.92	65.08 $\pm$ 2.05	34.43 $\pm$ 3.42
9	51.89 $\pm$ 2.36	52.26 $\pm$ 3.53	54.93 $\pm$ 2.79	49.95 $\pm$ 3.09
12	49.35 $\pm$ 3.03	52.41 $\pm$ 4.50	54.21 $\pm$ 2.51	52.98 $\pm$ 3.33
24	47.98 $\pm$ 2.34	45.95 $\pm$ 1.61	47.63 $\pm$ 3.53	43.04 $\pm$ 04.19

Data present the experimental values and means of three independent experiments  $\pm$  SEM.



**Table 5** The percentage of AR cell viability determined by PrestoBlue assay after treatment with various concentrations of TCS (0-7.5  $\mu\text{M}$ ) for 12, 24 and 48 h

Time (h)	TCS ( $\mu\text{M}$ )			
	0	2.5	5	7.5
12	100.00 $\pm$ 0.00	103.87 $\pm$ 1.75	102.92 $\pm$ 1.59	103.36 $\pm$ 2.84
24	100.00 $\pm$ 0.00	98.27 $\pm$ 0.81	93.56 $\pm$ 2.13	93.71 $\pm$ 3.65
48	100.00 $\pm$ 0.00	99.62 $\pm$ 2.81	99.11 $\pm$ 2.40	95.42 $\pm$ 2.46

Data present the experimental values and means of three independent experiments  $\pm$  SEM.



**Table 6** The percentage of aggregate size of AR cells determined by image analyzer after treatment with various concentrations of TCS (0-7.5  $\mu\text{M}$ ) for 24 h in detached condition

The concentrations of TCS ( $\mu\text{M}$ )	Aggregate size (%) (Mean $\pm$ SE)
0	100.00 $\pm$ 0.00
2.5	63.23 $\pm$ 0.58*
5	41.45 $\pm$ 0.40*
7.5	37.63 $\pm$ 0.60*

Data present the experimental values and means of three independent experiments  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.





**Table 7** The percentage of aggregate number of AR cells determined by image analyzer after treatment with various concentrations of TCS (0-7.5  $\mu\text{M}$ ) for 24 h in detached condition

The concentrations of TCS ( $\mu\text{M}$ )	Aggregate number (%) (Mean $\pm$ SE)
0	100.00 $\pm$ 0.00
2.5	28.95 $\pm$ 0.58*
5	8.77 $\pm$ 0.38*
7.5	7.02 $\pm$ 0.33*

Data present the experimental values and means of three independent experiments  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 8** The relative protein of N-cadherin determined by western blot analysis after AR cells were treated with TCS (0-7.5  $\mu$ M) for 24 h in detached condition

The concentrations of TCS ( $\mu$ M)	Relative N-cadherin level (Mean $\pm$ SE)
0	1.00 $\pm$ 0.00
2.5	1.39 $\pm$ 0.23
5	2.04 $\pm$ 0.22*
7.5	2.41 $\pm$ 0.18*

Mean data from independent experiments are normalized to the level of  $\beta$ -actin protein. Values are means of three independent triplicate samples  $\pm$  SEM \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 9** The relative protein of E-cadherin determined by western blot analysis after AR cells were treated with TCS (0-7.5  $\mu\text{M}$ ) for 24 h in detached condition

The concentrations of TCS ( $\mu\text{M}$ )	Relative E-cadherin level (Mean $\pm$ SE)
0	1.00 $\pm$ 0.00
2.5	1.00 $\pm$ 0.09
5	0.60 $\pm$ 0.04*
7.5	0.34 $\pm$ 0.09*

Mean data from independent experiments are normalized to the level of  $\beta$ -actin protein. Values are means of three independent triplicate samples  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 10** The relative protein of vimentin determined by western blot analysis after AR cells were treated with TCS (0-7.5  $\mu$ M) for 24 h in detached condition

The concentrations of TCS ( $\mu$ M)	Relative vimentin level (Mean $\pm$ SE)
0	1.00 $\pm$ 0.00
2.5	1.21 $\pm$ 0.02*
5	1.26 $\pm$ 0.03*
7.5	1.35 $\pm$ 0.04*

Mean data from independent experiments are normalized to the level of  $\beta$ -actin protein. Values are means of three independent triplicate samples  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 11** The relative protein of slug determined by western blot analysis after AR cells were treated with TCS (0-7.5  $\mu\text{M}$ ) for 24 h in detached condition

The concentrations of TCS ( $\mu\text{M}$ )	Relative slug level (Mean $\pm$ SE)
0	1.00 $\pm$ 0.00
2.5	1.23 $\pm$ 0.13
5	1.30 $\pm$ 0.12
7.5	1.47 $\pm$ 0.10*

Mean data from independent experiments are normalized to the level of  $\beta$ -actin protein. Values are means of three independent triplicate samples  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 12** The relative protein of snail determined by western blot analysis after AR cells were treated with TCS (0-7.5  $\mu$ M) for 24 h in detached condition

The concentrations of TCS ( $\mu$ M)	Relative snail level (Mean $\pm$ SE)
0	1.00 $\pm$ 0.00
2.5	1.06 $\pm$ 0.02
5	1.24 $\pm$ 0.04*
7.5	1.36 $\pm$ 0.08*

Mean data from independent experiments are normalized to the level of  $\beta$ -actin protein. Values are means of three independent triplicate samples  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 13** The percentage of colony number of AR cells determined by image analyzer after treatment with various concentrations of TCS (0-7.5  $\mu$ M) for 10 days in colony formation assay

The concentrations of TCS ( $\mu$ M)	Colony number (%) (Mean $\pm$ SE)
0	100.00 $\pm$ 0.00
2.5	111.11 $\pm$ 2.41
5	125.77 $\pm$ 2.71*
7.5	151.66 $\pm$ 6.36*

Data present the experimental values and means of three independent experiments  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 14** The percentage of colony size of AR cells determined by image analyzer after treatment with various concentrations of TCS (0-7.5  $\mu\text{M}$ ) for 10 days in colony formation assay

The concentrations of TCS ( $\mu\text{M}$ )	Colony size (%) (Mean $\pm$ SE)
0	100.00 $\pm$ 0.00
2.5	91.10 $\pm$ 2.37
5	60.77 $\pm$ 2.37*
7.5	56.87 $\pm$ 2.87*

Data present the experimental values and means of three independent experiments  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.





**Table 15** Relative cell migration of AR cells determined by transwell migration assay after cells were pretreated with non-toxic concentrations of TCS (0-7.5  $\mu\text{M}$ ) for 24 h in detached condition and then subjected to transwell assay for 24 h

The concentrations of TCS ( $\mu\text{M}$ )	Relative migration (24 h) (Mean $\pm$ SE)
0	1.00 $\pm$ 0.00
2.5	1.19 $\pm$ 0.07
5	2.38 $\pm$ 0.06*
7.5	3.70 $\pm$ 0.13*

Data present the experimental values and means of three independent experiments  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 16** Relative cell invasion of AR cells determined by transwell invasion assay after cells were pretreated with non-toxic concentrations of TCS (0-7.5  $\mu\text{M}$ ) for 24 h in detached condition and then subjected to transwell assay for 24 h

The concentrations of TCS ( $\mu\text{M}$ )	Relative invasion (24 h) (Mean $\pm$ SE)
0	1.00 $\pm$ 0.00
2.5	1.25 $\pm$ 0.05
5	1.95 $\pm$ 0.11*
7.5	2.06 $\pm$ 0.14*

Data present the experimental values and means of three independent experiments  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 17** The relative protein of pFAK/FAK determined by western blot analysis after AR cells were pretreated with TCS (0-7.5  $\mu$ M) for 24 h in detached condition and then attached on conventional culture dishes for 4 h

The concentrations of TCS ( $\mu$ M)	Relative pFAK/FAK level (Mean $\pm$ SE)
0	1.00 $\pm$ 0.00
2.5	1.44 $\pm$ 0.04*
5	1.54 $\pm$ 0.03*
7.5	2.37 $\pm$ 0.05*

Mean data from independent experiments are normalized to the level of  $\beta$ -actin protein. Values are means of three independent triplicate samples  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 18** The relative protein of pAkt/Akt determined by western blot analysis after AR cells were pretreated with TCS (0-7.5  $\mu$ M) for 24 h in detached condition and then attached on conventional culture dishes for 4 h

The concentrations of TCS ( $\mu$ M)	Relative pAkt/Akt level (Mean $\pm$ SE)
0	1.00 $\pm$ 0.00
2.5	1.07 $\pm$ 0.02
5	1.25 $\pm$ 0.03*
7.5	1.39 $\pm$ 0.02*

Mean data from independent experiments are normalized to the level of  $\beta$ -actin protein. Values are means of three independent triplicate samples  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 19** The relative protein of Rac1-GTP determined by western blot analysis after AR cells were pretreated with TCS (0-7.5  $\mu$ M) for 24 h in detached condition and then attached on conventional culture dishes for 4 h

The concentrations of TCS ( $\mu$ M)	Relative Rac1-GTP level (Mean $\pm$ SE)
0	1.00 $\pm$ 0.00
2.5	1.01 $\pm$ 0.01
5	1.54 $\pm$ 0.06*
7.5	2.00 $\pm$ 0.10*

Mean data from independent experiments are normalized to the level of  $\beta$ -actin protein. Values are means of three independent triplicate samples  $\pm$  SEM. \*refers significant difference versus non-treated control ( $P < 0.05$ ) determined by One-way ANOVA and Tukey's test.



**Table 20** The relative protein of RhoA-GTP determined by western blot analysis after AR cells were pretreated with TCS (0-7.5  $\mu\text{M}$ ) for 24 h in detached condition and then attached on conventional culture dishes for 4 h

The concentrations of TCS ( $\mu\text{M}$ )	Relative RhoA-GTP level (Mean $\pm$ SE)
0	1.00 $\pm$ 0.00
2.5	1.02 $\pm$ 0.01
5	1.07 $\pm$ 0.02
7.5	1.06 $\pm$ 0.02

Mean data from independent experiments are normalized to the level of  $\beta$ -actin protein. Values are means of three independent triplicate samples  $\pm$  SEM.



## VITA

Miss Thidarat Winitthana was born on August 5, 1984 in Nakhornratchasima, Thailand. She graduated with a Bachelor Degree of Pharmaceutical Sciences in 2006 and Master degree of Pharmacology in 2010 from the Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand.

