



**Figure S1. Effect of protopine on HepG2 cell viability.** Cell viability of protopine on HepG2 cells. HepG2 cells were incubated for 24 h with various concentrations 0-50µM protopine. Results are expressed in percentage of non-treated control. Data are expressed as the mean  $\pm$  SD of three times experiments. \*\* $p < 0.01$  and \*\*\* $p < 0.001$  compared to non-treated.

**Table S1. Antibody used for western blot analysis**

Name	Company	Source	Molecular Weight(kDa)	Dilution for WB
$\beta$ -actin	sc-47778	Mouse	45	1:3000
I- $\kappa$ B	4812S	Rabbit	39	1:1000
p- I- $\kappa$ B	2859S	Rabbit	39	1:1000
NF- $\kappa$ B	8242S	Rabbit	65	1:1000
COX-2	sc-376861	Mouse	72	1:1000
MMP-9	sc-13520	Mouse	92	1:1000
ERK	4695S	Rabbit	42	1:1000
p-ERK	4370S	Rabbit	42	1:1000
JNK	9252S	Rabbit	48	1:1000
p-JNK	4668S	Rabbit	48	1:1000
p38	9212s	Rabbit	40	1:1000
p-p38	4511S	Rabbit	40	1:1000

**Table S2. PCR primers used for quantitative real-time PCR**

Gene		Sequence (5'~3')	Annealing Temperature(°C)
MMP-9 (Human)	Forward	GCTGCCTGTCGGTGAGAT TGG	65.3
MMP-9 (Human)	Reverse	TGGTCCTGGTGCTCCTGG TG	64.6
GAPDH (Human)	Forward	AGCCTTCTCCATGGTCGT GA	60.5
GAPDH (Human)	Reverse	CGGAGTCAACGGATTGG TC	60.5