Supplementary Materials

Bioassay-guided discovery of potential partial extracts with cytotoxic effects on liver cancer cells from Vietnamese medicinal herbs

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Table S1. Total flavonoids content (TFC) values of methanol, ethyl acetate, water, *n*-hexane, and 90% methanol extracts from *Luvunga scandens* leaves, *Hyptis suaveolens* roots, and *Solanum torvum* leaves were determined by using the aluminum-flavonoid complex colorimetric method. The absorbance was measured at 510 nm. TFC value is expressed as milligrams of rutin equivalents per gram of dry weight of extract (mg RE/g extract). Values are presented as mean ± SD (n = 3).

Extract	***Luvunga scandens* leaves**	***Hyptis suaveolens* roots**	***Solanum torvum* leaves**
Methanol	53.03 ± 5.35	68.71 ± 4.58	90.78 ± 9.34
Ethyl acetate	233.46 ± 17.34	312.23 ± 22.82	104.56 ± 11.73
Water	28.73 ± 3.36	249.67 ± 23.71	46.61 ± 2.93
n-Hexane	354.89 ± 32.55	168.54 ± 12.28	230.64 ± 16.74
90% Methanol	129.24 ± 18.67	259.75 ± 6.96	26.21 ± 3.08

Table S2. The antioxidant activity IC_{50} values of methanol, ethyl acetate, water, *n*-hexane, and 90% methanol extracts from *Luvunga scandens* leaves, *Hyptis suaveolens* roots, and *Solanum torvum* leaves were determined by using DPPH assay. The IC_{50} value describes the concentration of the extractions that can scavenge free radicals by 50% (mg/L). Values are presented as mean ± SD (n = 3).

Extract	***Luvunga scandens* leaves**	***Hyptis suaveolens* roots**	***Solanum torvum* leaves**
Methanol	337.88 ± 16.47	24.46 ± 0.54	586.28 ± 43.02
Ethyl acetate	905.59 ± 60.52	23.11 ± 1.18	2250.02 ± 225.04
Water	933.12 ± 53.15	27.83 ± 1.84	1286.23 ± 426.68
n-Hexane	7356.69 ± 1148.10	548.90 ± 15.07	3805.76 ± 559.19
90% Methanol	956.54 ± 100.21	13.27 ± 0.68	ND

ND: not detected, the 90% methanol partial extract of *Solanum torvum* leaves did not exhibit the antioxidant capacity.

Table S3. The cytotoxicity effect on Huh-7 cells CC_{50} values of methanol, ethyl acetate, water, *n*-hexane, and 90% methanol extracts from *Luvunga scandens* leaves, *Hyptis suaveolens* roots, and *Solanum torvum* leaves were determined by using resazurin assay. The CC_{50} was defined as the concentration (μg/mL) of the extracts that reduced the Huh-7 HCC cells viability by 50%. Values are presented as mean ± SD (n = 3).

Extract	***Luvunga scandens* leaves**	***Hyptis suaveolens* roots**	***Solanum torvum* leaves**
Methanol	36.5 ± 2.9	13.7 ± 0.7	53 ± 2.2
Ethyl acetate	38.5 ± 2.1	5.9 ± 4.3	24.9 ± 6.9
Water	-	-	-
n-Hexane	-	-	-
90% Methanol	51.2 ± 1.5	6.7 ± 0.3	61.1 ± 2.0

"-"shown the extracts with the values of CC_{50} more than 100 μg/mL.