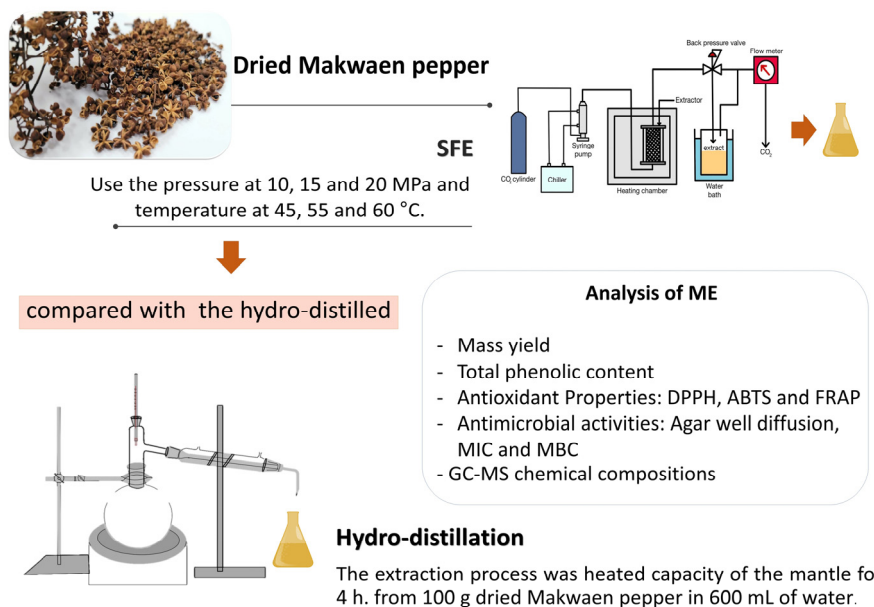


**Figure S1.** Contour plots of ME in terms of a) Yield (%) (b) Total phenolic compounds (c) DPPH, (d) ABTS, and (e) FRAP as a function of temperature and pressure.



**Figure S2.** Design of experiment for the extraction of Makwaen pepper using SFE and hydro-distillation extraction.

**Table S1.** Regression equations, coefficient of determinations ( $R^2$ ), and  $p$  values of each response of ME using SFE.

Responses	Regression equation	Adj $R^2$	$p$ -value
Yield (%)	$-17.15 + 0.41 * X_1 + 0.55 * X_2$	0.875	0.0002
Total phenols (mg GAE/mL)	$-19.83 + 0.70 * X_1 + 0.28 * X_2$	0.767	0.0030
IC <sub>50</sub> DPPH ( $\mu$ g/mL extract)	$210.02 + 0.97 * X_1 - 13.08 * X_2 - 0.06 * X_1^2 - 0.11 * X_2^2 + 0.25 * X_1 * X_2$	0.990	<0.0001
IC <sub>50</sub> ABTS ( $\mu$ g/mL extract)	$491.90 - 11.46 * X_1 - 12.26 * X_2 + 0.07 * X_1^2 + 0.05 * X_2^2 + 0.18 * X_1 * X_2$	0.998	<0.0001

$p$ -value indicates a significant difference at 95% confidence ( $p < 0.05$ ). \*\* $X_1$ = Temperature,  $X_2$ = Pressure.

**Table S2.** Pearson Correlation for total phenolic compounds with antioxidation.

	Correlations (Pearson Correlation)			
	TPC	DPPH	ABTS	FRAP
TPC	1			
DPPH	-0.654*	1		
ABTS	-0.783*	0.841*	1	
FRAP	-0.279	0.250	0.302	1

\* indicates a significant difference at 95% confidence ( $p < 0.05$ ).