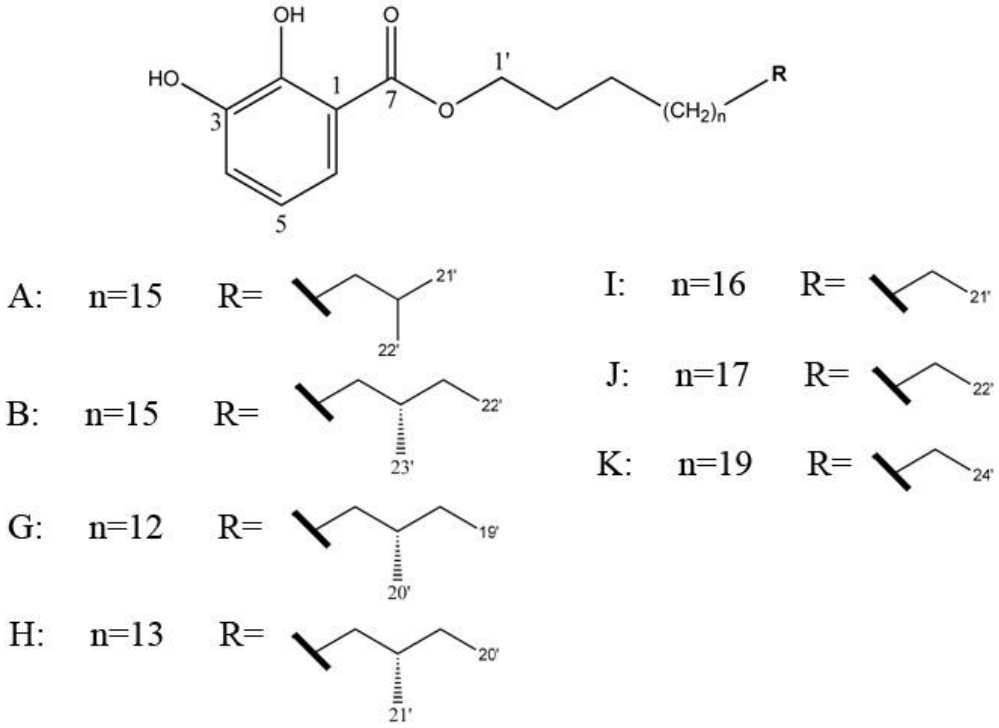
Supplementary Material

Supplementary Material 1: Structures of gentisides A, B, G, H, I, J and K



Supplementary Material 2: The actual and coded values of the independent variables

independent variables	coded values		
	-1	0	1
extraction temperature (X_1: ℃)	65	75	85
extraction time (X_2: h)	2	3	4
solvent-material ratio (X_3: mL/g)	8	10	12

Supplementary Material 3: Linearity and Precision of Gentiside A, B, G, H, I, J and K

Analytes.	Regression Equation	Correlation Coefficient (R^2)	Linear ranges ($mg \cdot mL^{-1}$)
gentiside A	Y=735.88x+0.9700	0.9994	0.500-0.010
gentiside B	Y=446.81x-2.2227	0.9976	0.500-0.010
gentiside G	Y=419.66x-0.1712	0.9988	0.500-0.010
gentiside H	Y=655.49x+2.2037	0.9989	1.000-0.010
gentiside I	Y=630.77x+1.2064	0.9987	0.500-0.010
gentiside J	Y=417.80x+2.1768	0.9985	1.000-0.010
gentiside K	Y=130.69x-0.1592	0.9995	0.500-0.010

Supplementary Material 4: RSD values of precision, stability and repeatability in HPLC methodology validation experiment

Analytes.	Precisions RSD (%)		Stability RSD (%)	Reproducibility RSD (%)
	Intra-day	Inter-day		
gentiside A	0.95	1.85	2.38	2.56
gentiside B	1.21	1.93	2.57	2.17
gentiside G	0.77	1.39	1.74	1.57
gentiside H	0.99	1.64	1.99	1.70
gentiside I	1.35	2.14	2.77	2.33
gentiside J	0.57	0.93	1.07	1.49
gentiside K	2.06	2.58	2.58	2.79