

Table S1. Analysis of variance (ANOVA) of regression models for each studied response

ANOVA source	Sum of squares	df	F	<i>p</i>-value	R²	R² adjusted
TPC						
Linear	579.709	2	1.97954	0.184	0.26	0.13
Quadratic	1495.964	3	34.77545	0.000061*	0.95	0.91
Special Cubic	24.207	1	1.87223	0.213517	0.96	0.92
Cubic	61.460	3	2.82121	0.171027	0.99	0.96
DPPH						
Linear	84.271	2	0.37181	0.697829	0.06	0.00
Quadratic	1202.992	3	73.59425	0.000004*	0.97	0.95
Special Cubic	6.235	1	1.16828	0.315581	0.97	0.95
Cubic	21.424	3	1.79301	0.287819	0.99	0.96
ABTS						
Linear	3891.78	2	1.93591	0.190396	0.26	0.13
Quadratic	10249.81	3	33.87333	0.000068*	0.95	0.91
Special Cubic	118.00	1	1.19900	0.309761	0.95	0.91
Cubic	552.47	3	5.39896	0.068494	0.99	0.97
FRAP						
Linear	121.926	2	0.23230	0.796499	0.04	0.00
Quadratic	2673.444	3	33.42698	0.000071*	0.93	0.88
Special Cubic	42.447	1	1.73935	0.228727	0.94	0.89
Cubic	131.593	3	4.47184	0.090979	0.99	0.96
CUPRAC						
Linear	522.043	2	0.67032	0.531256	0.11	0.00
Quadratic	3742.558	3	18.45322	0.000593*	0.89	0.82
Special Cubic	30.672	1	0.42086	0.537203	0.89	0.80
Cubic	442.713	3	8.75143	0.031293*	0.98	0.95
TAC						
Linear	3536.08	2	0.54770	0.593264	0.09	0.00
Quadratic	32772.60	3	31.93539	0.000084*	0.93	0.89
Special Cubic	12.30	1	0.03161	0.863932	0.93	0.87
Cubic	1924.69	3	3.20947	0.144728	0.98	0.93

*Significant at $p < 0.05$.

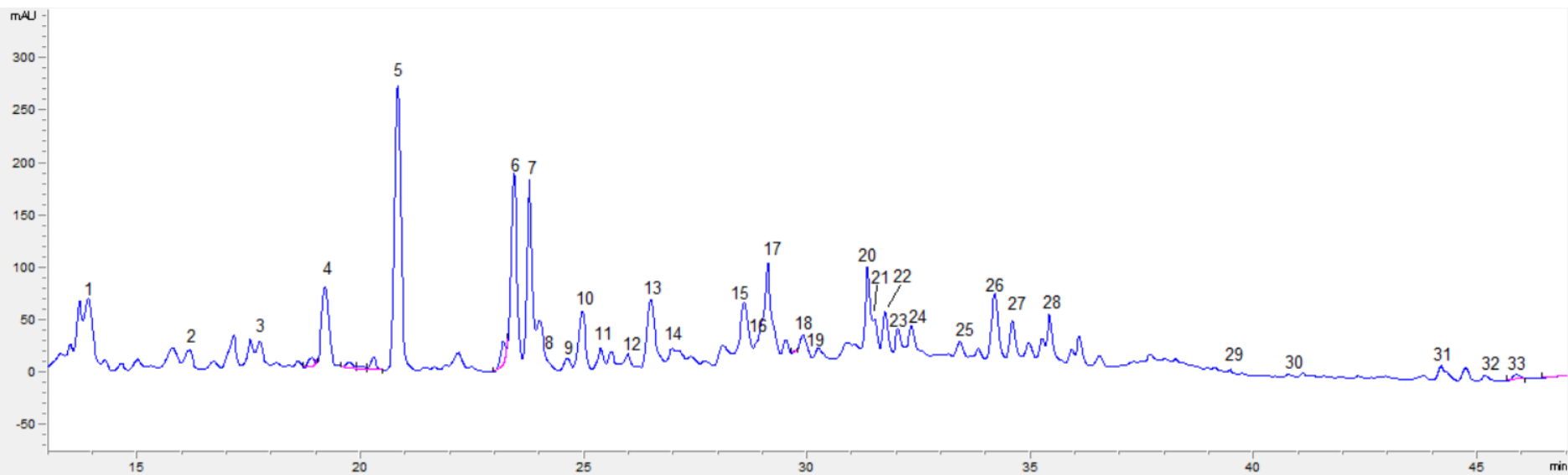
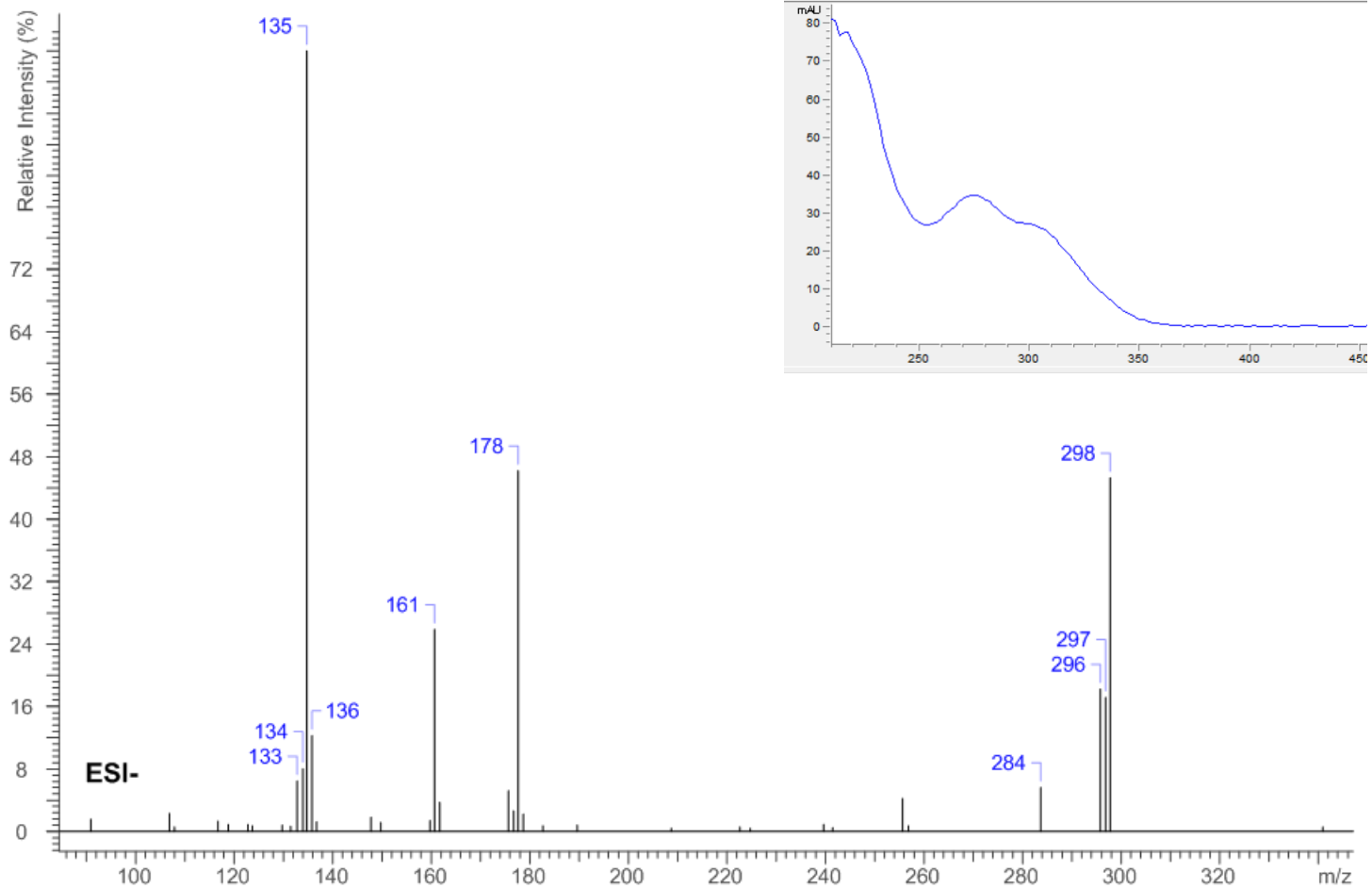
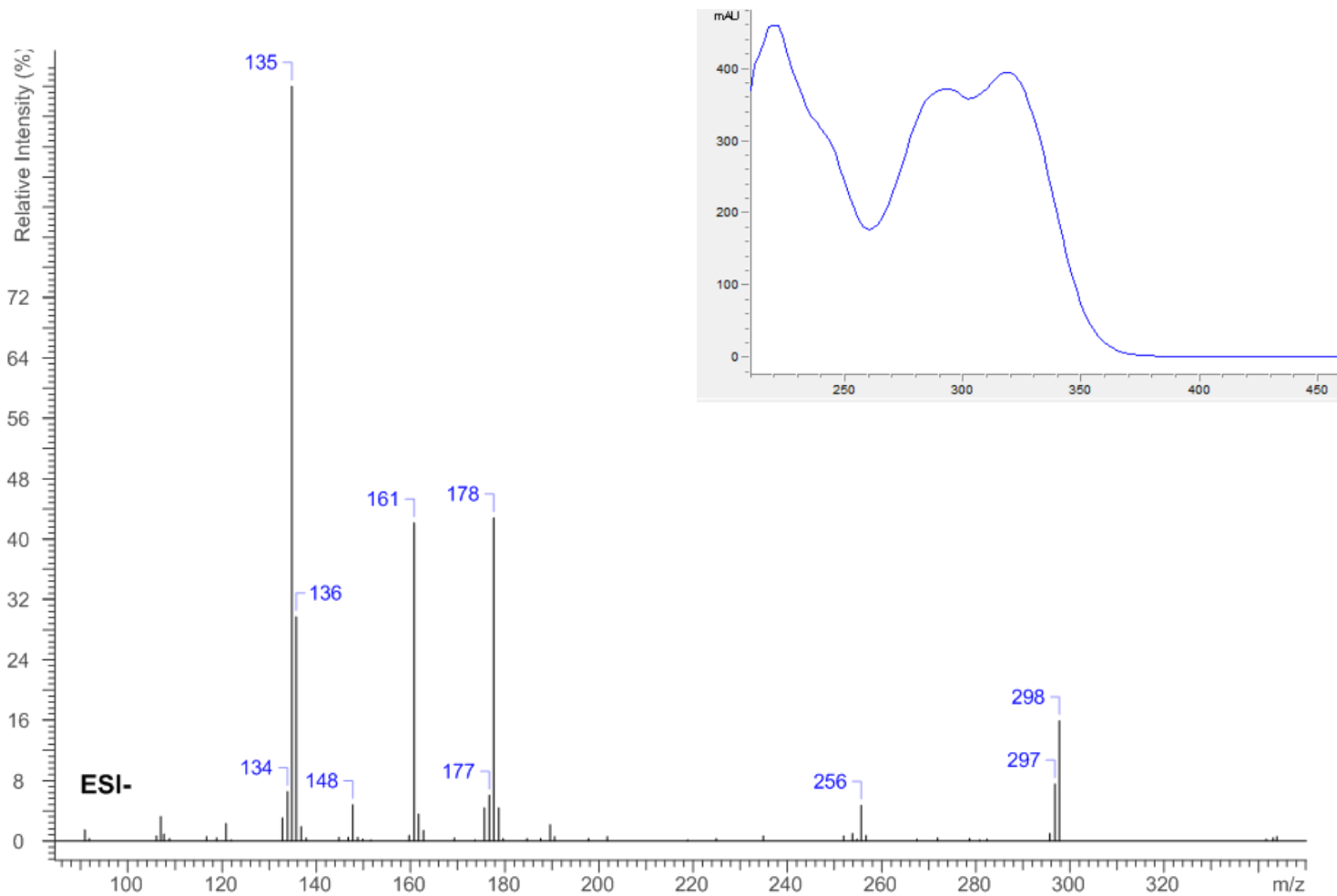


Figure S1. HPLC chromatogram detected at 280nm for the extracted compounds from defatted hemp seeds in the run 10

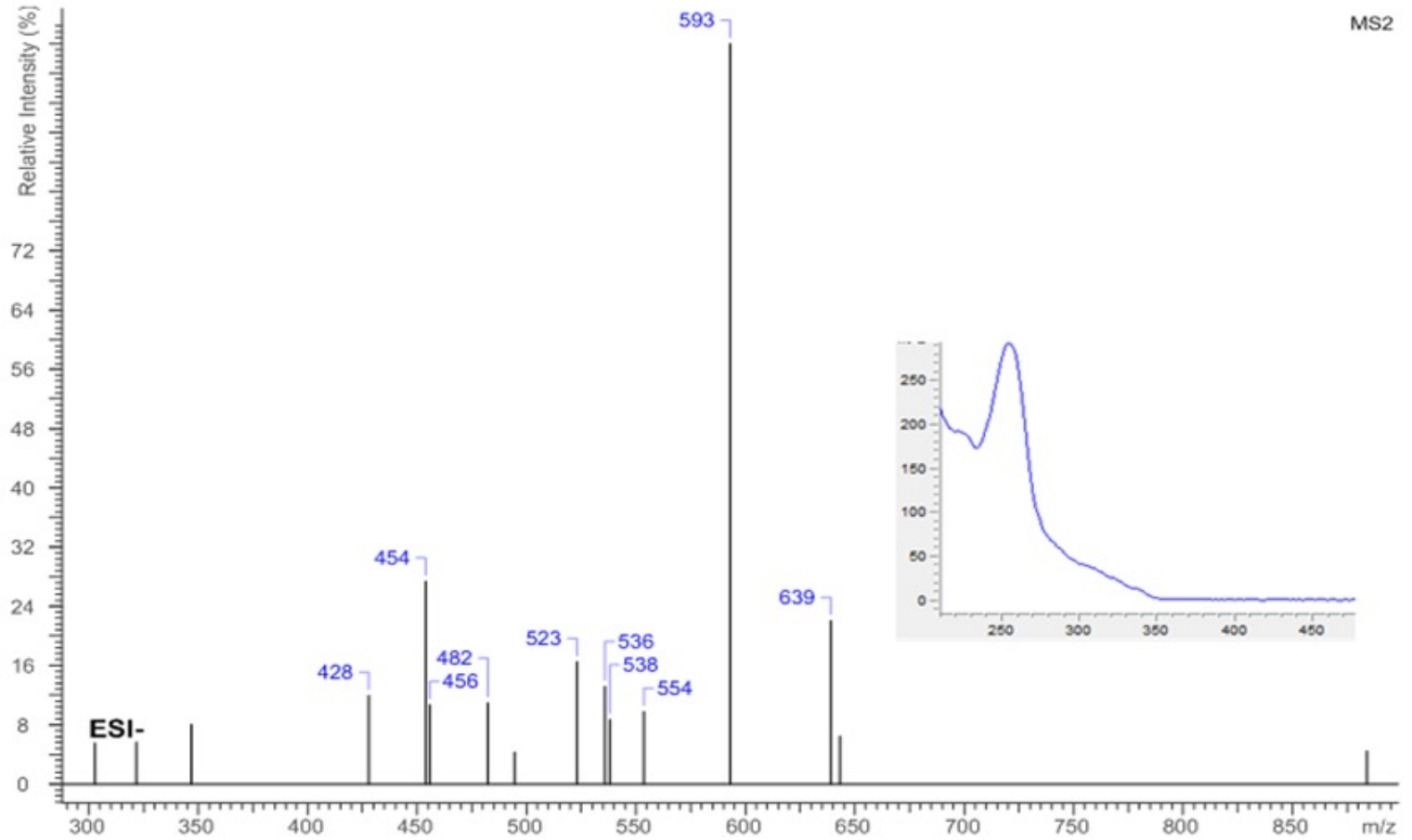
N-trans-caffeoyltyramine isomer



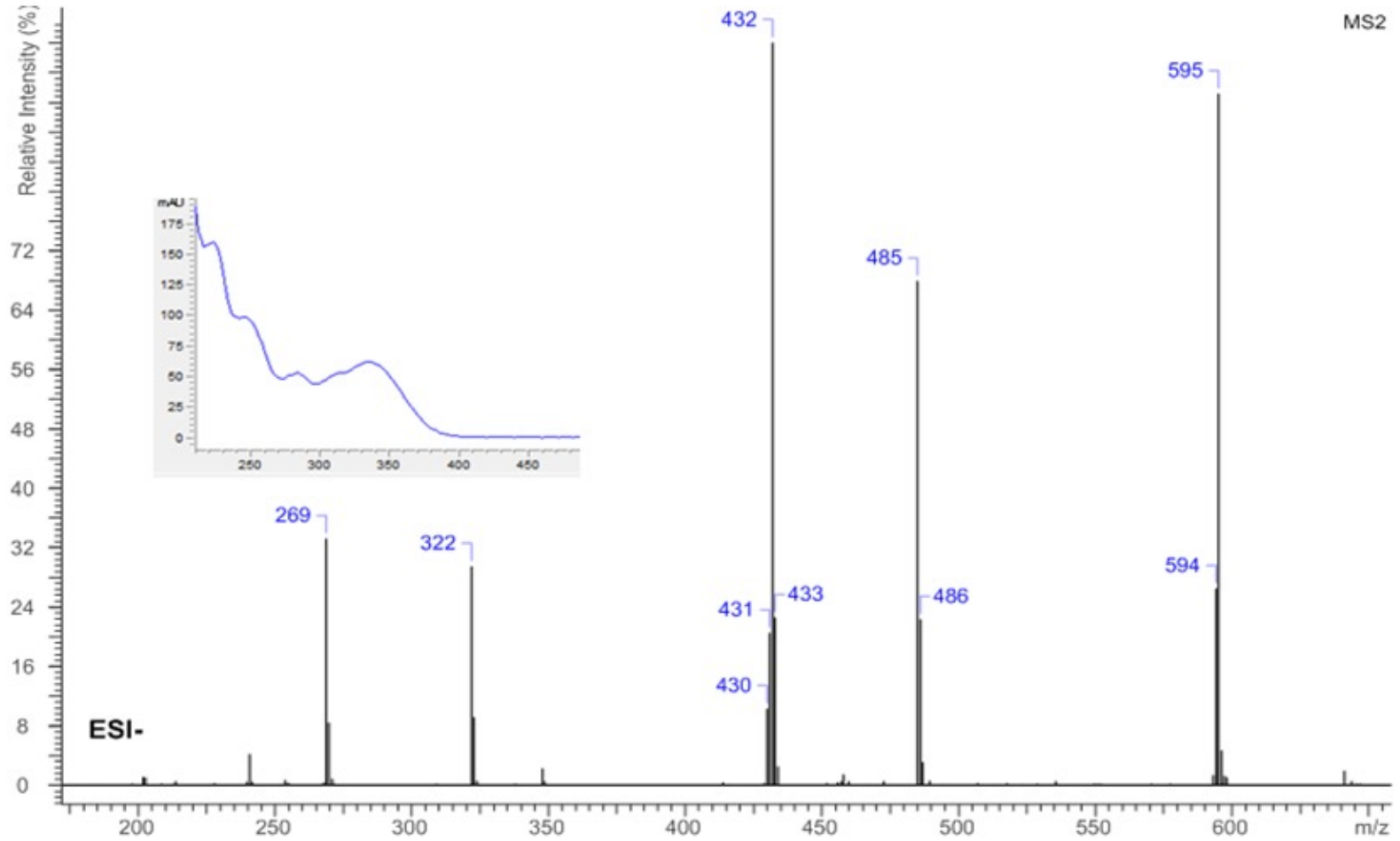
N-trans-caffeoyltyramine



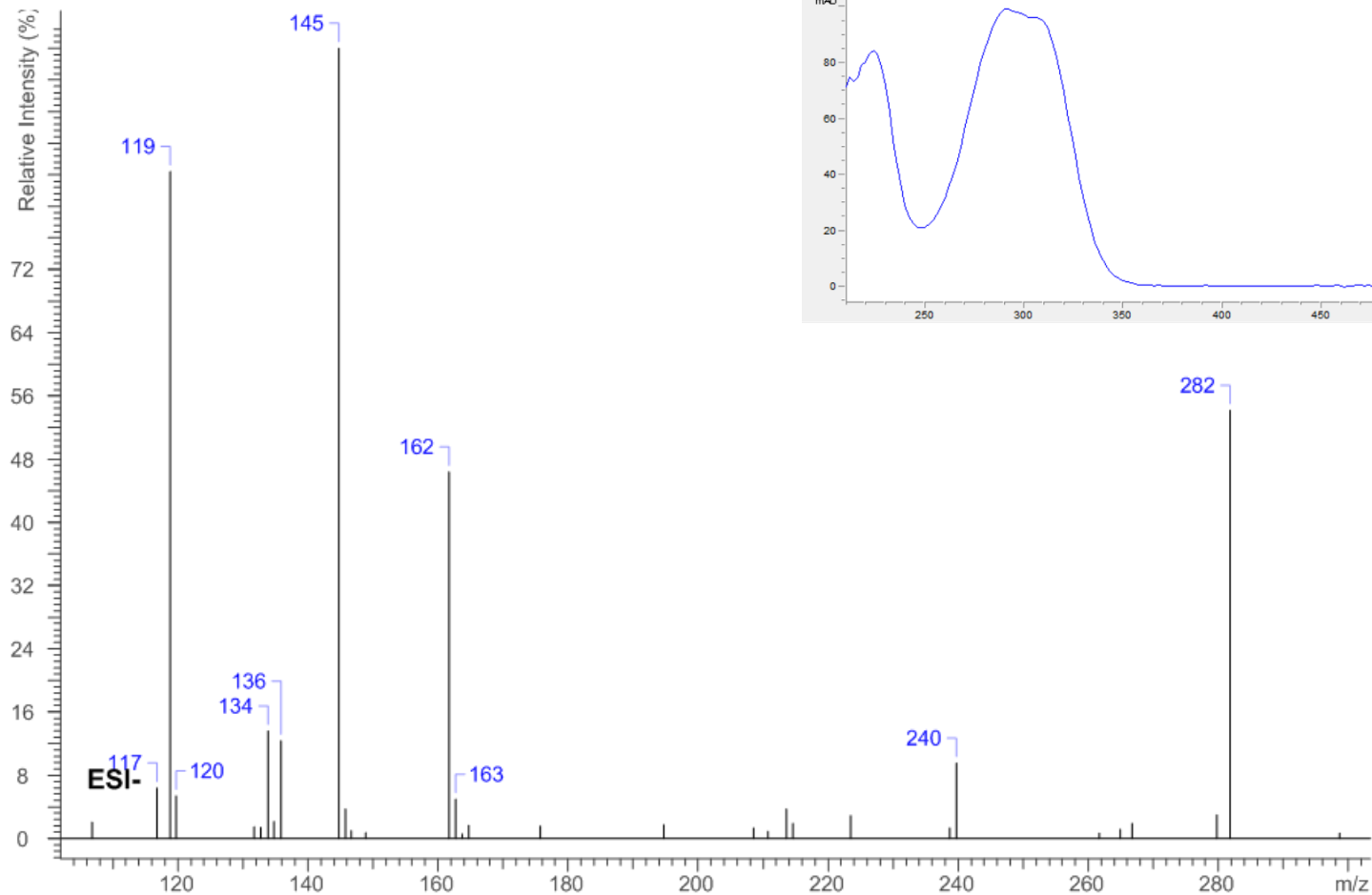
Cannabisin A



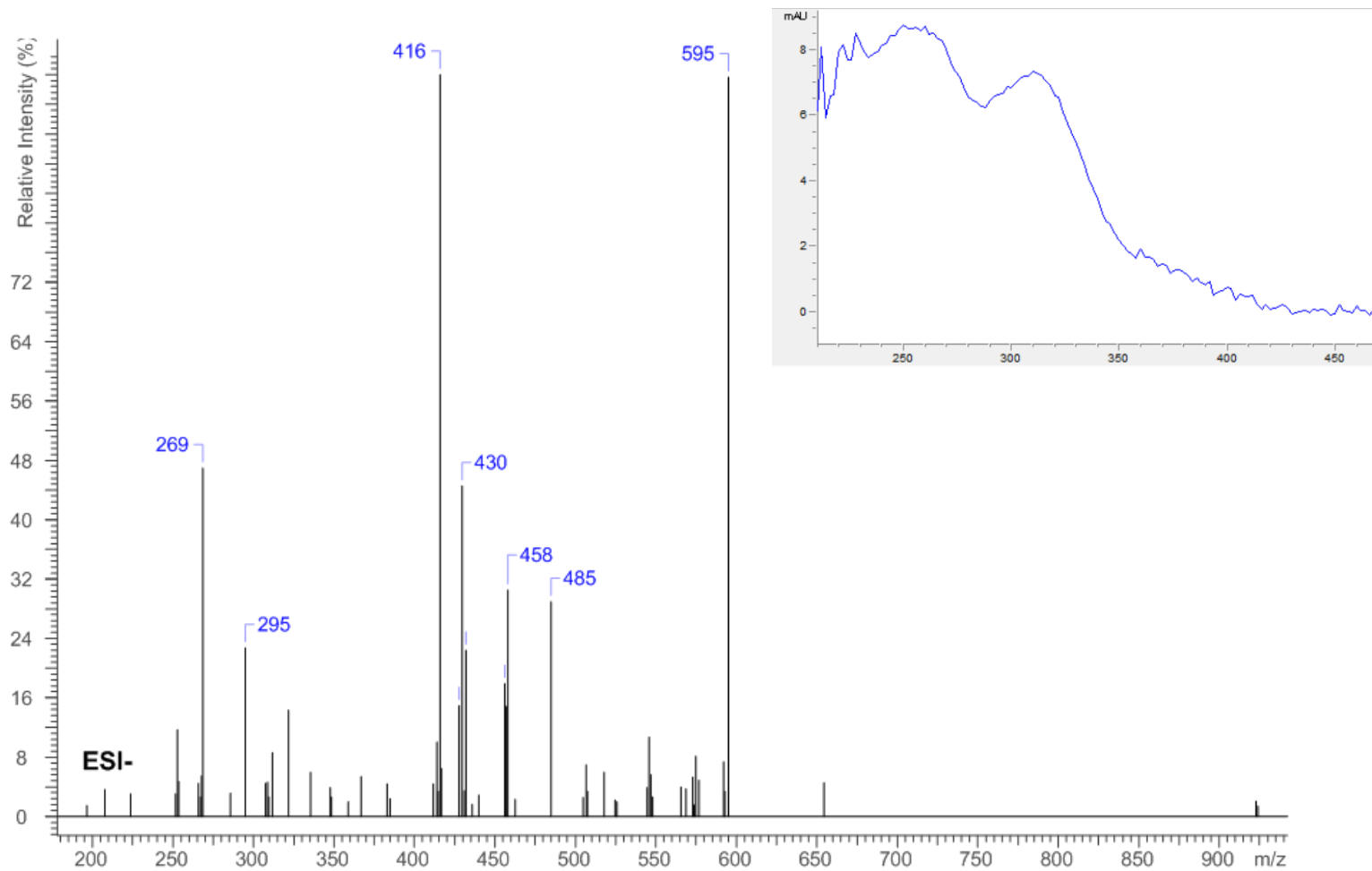
Cannabisin B



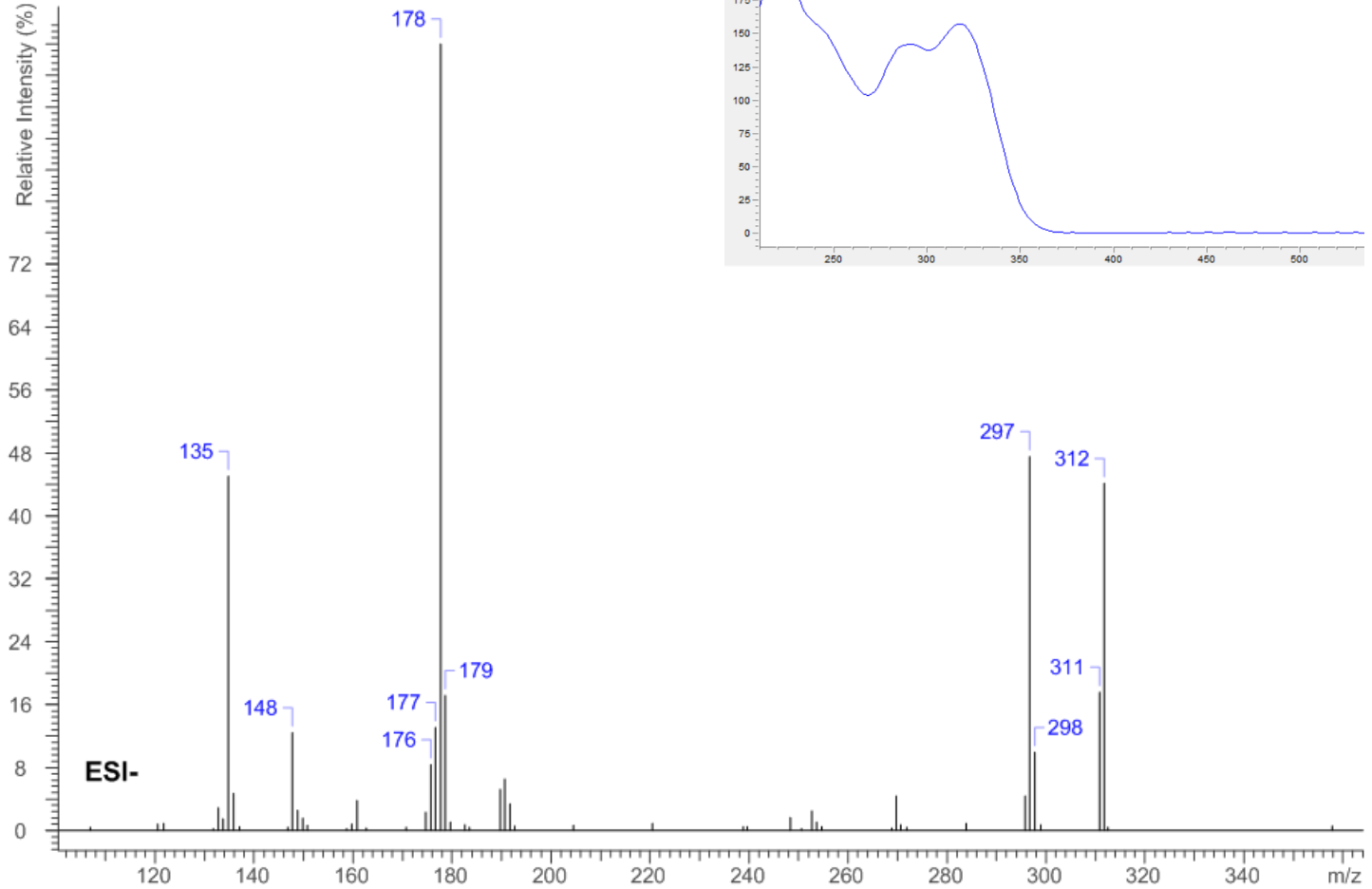
Coumaroyltyramine



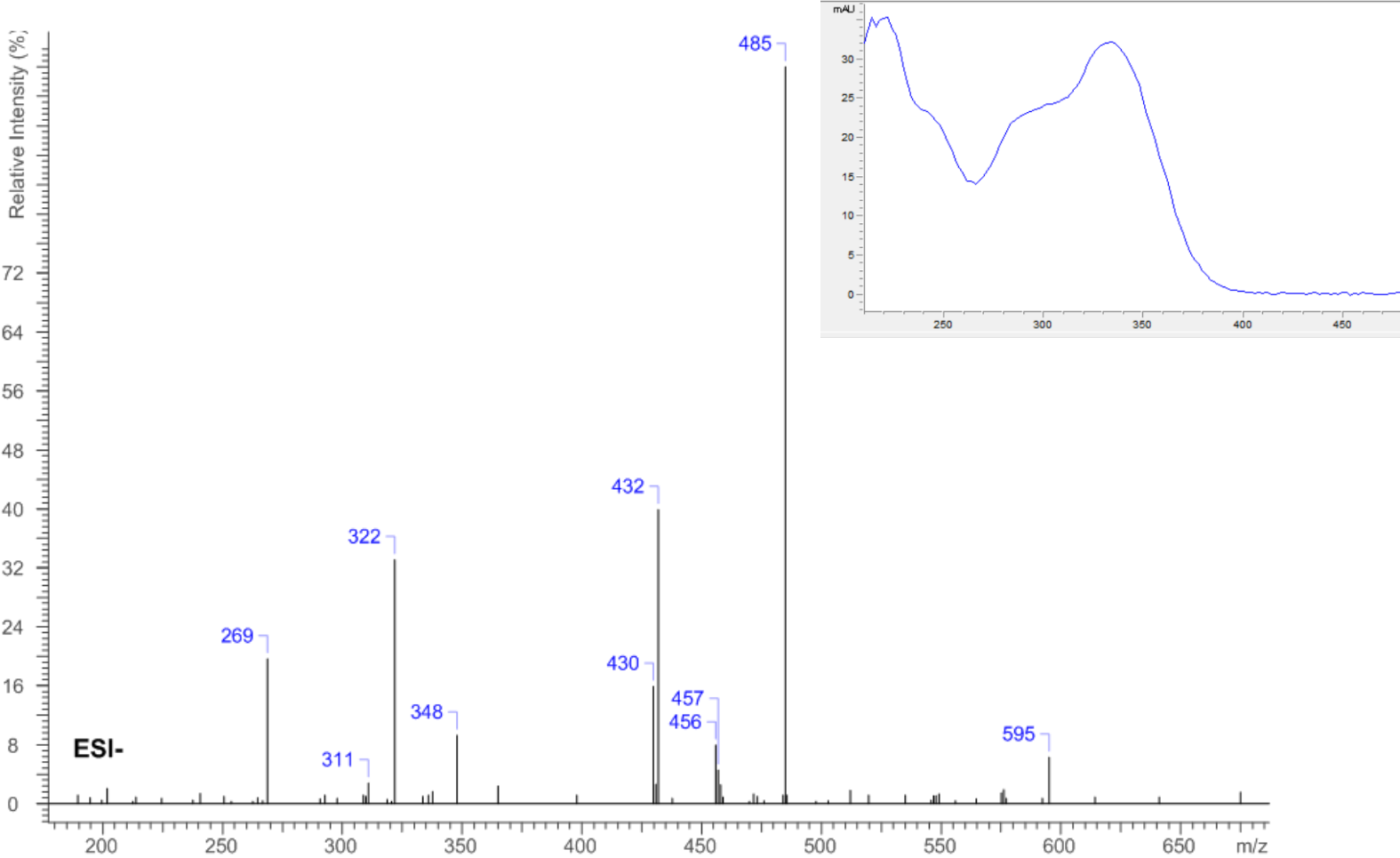
Cannabisin B isomer1



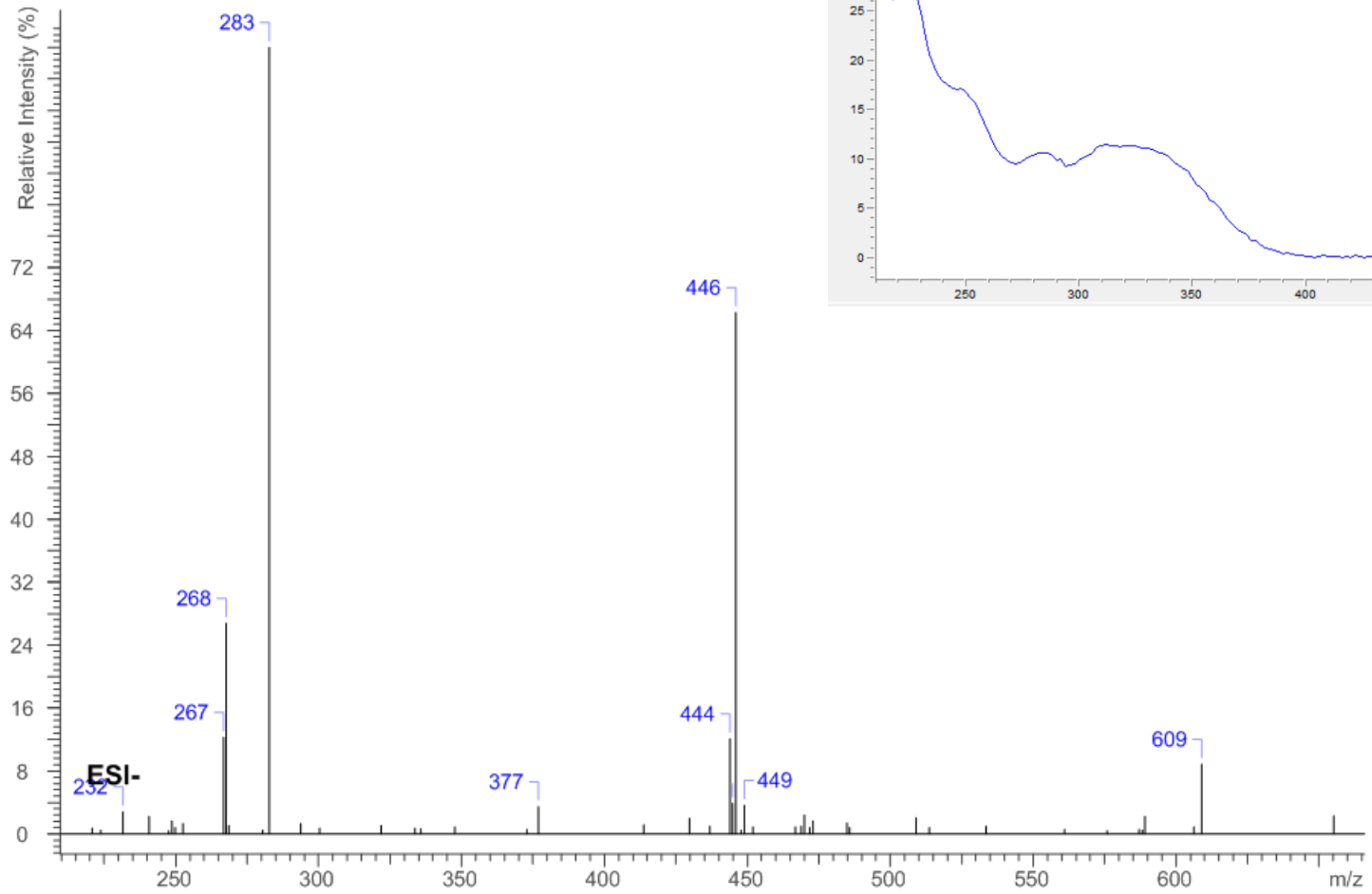
N-Feruloyltyramine



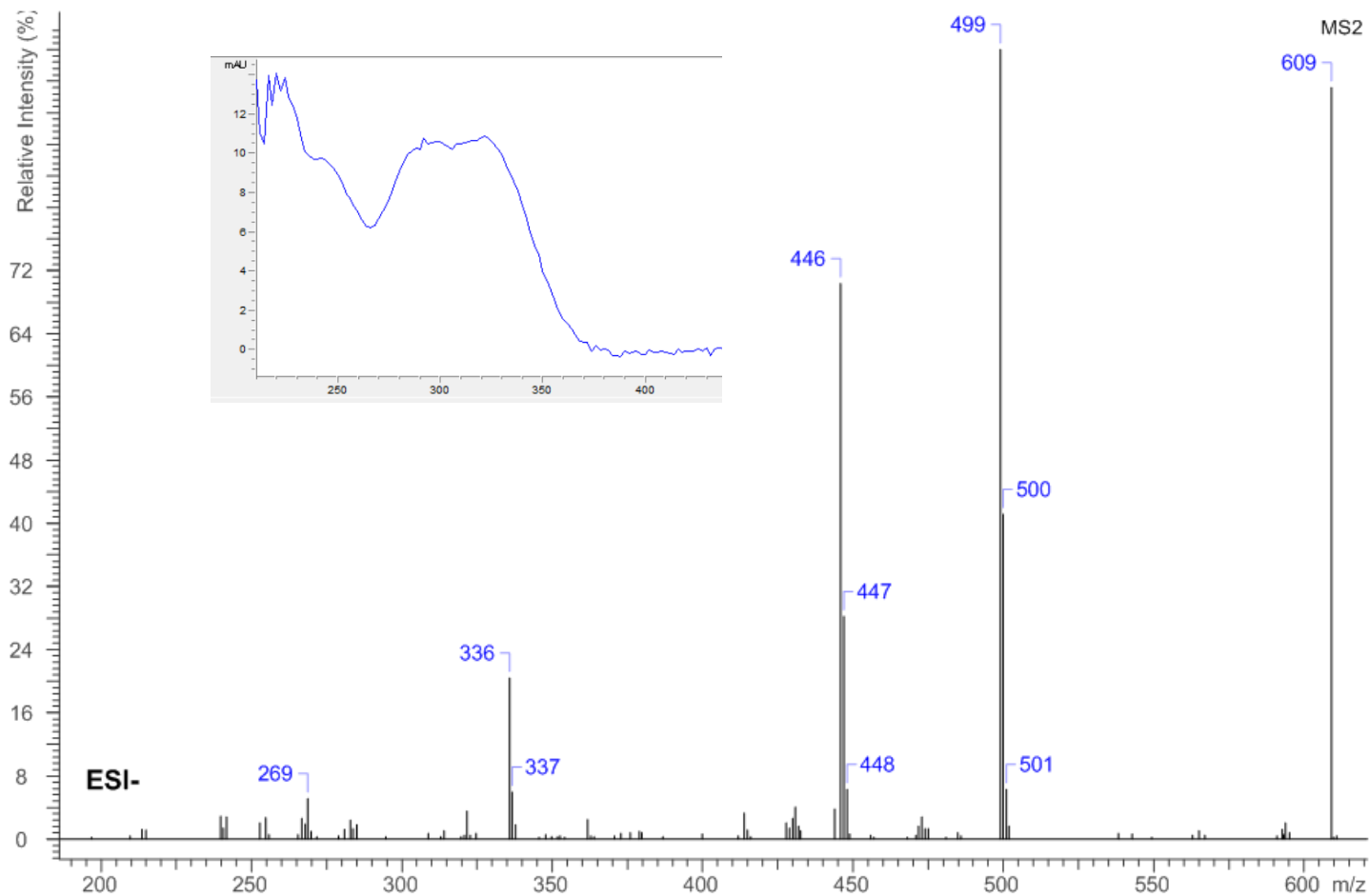
Cannabisin B isomer 2



Demethylgrossamide

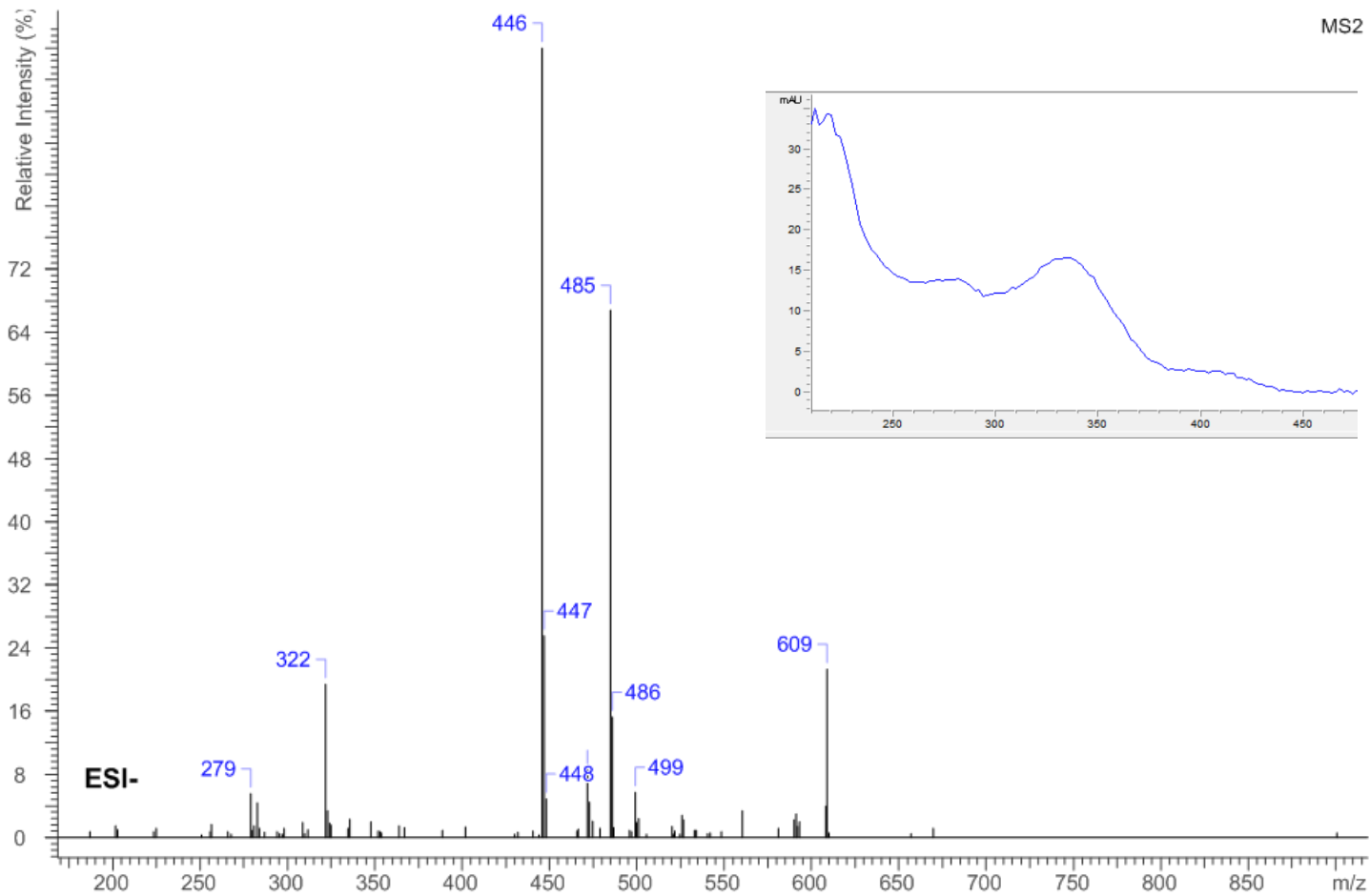


Cannabisin C

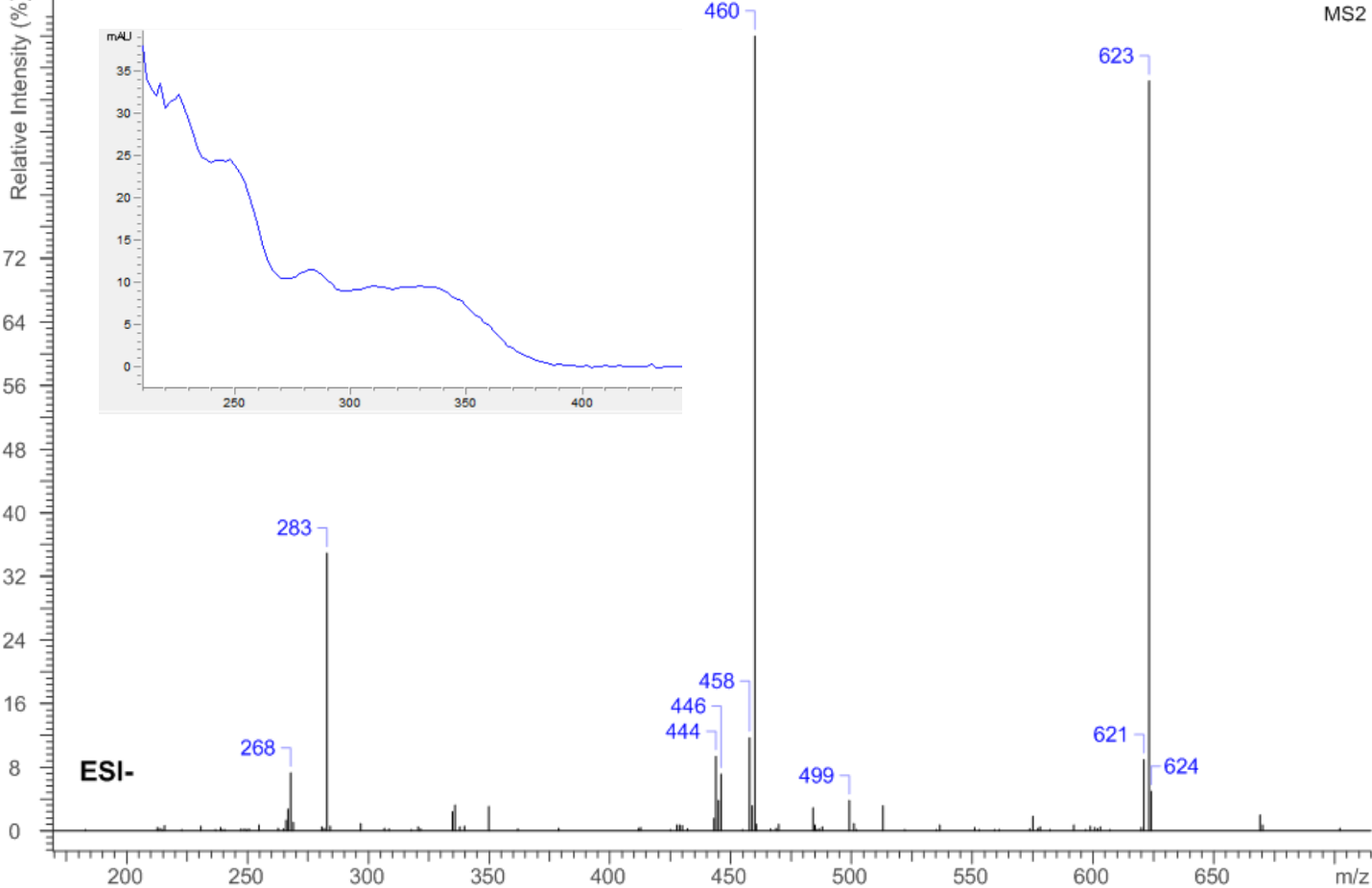


Cannabisin C isomer

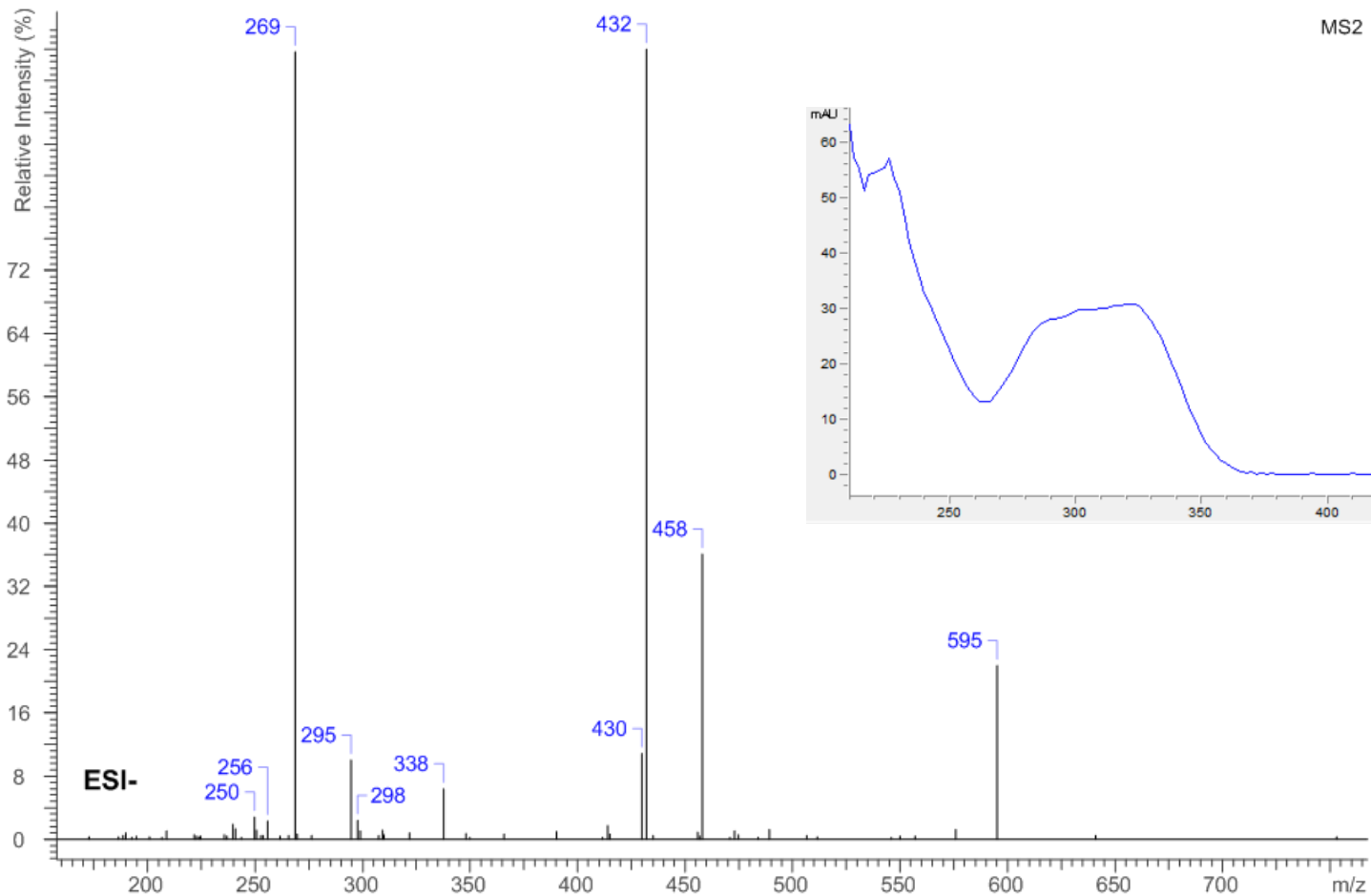
29.7



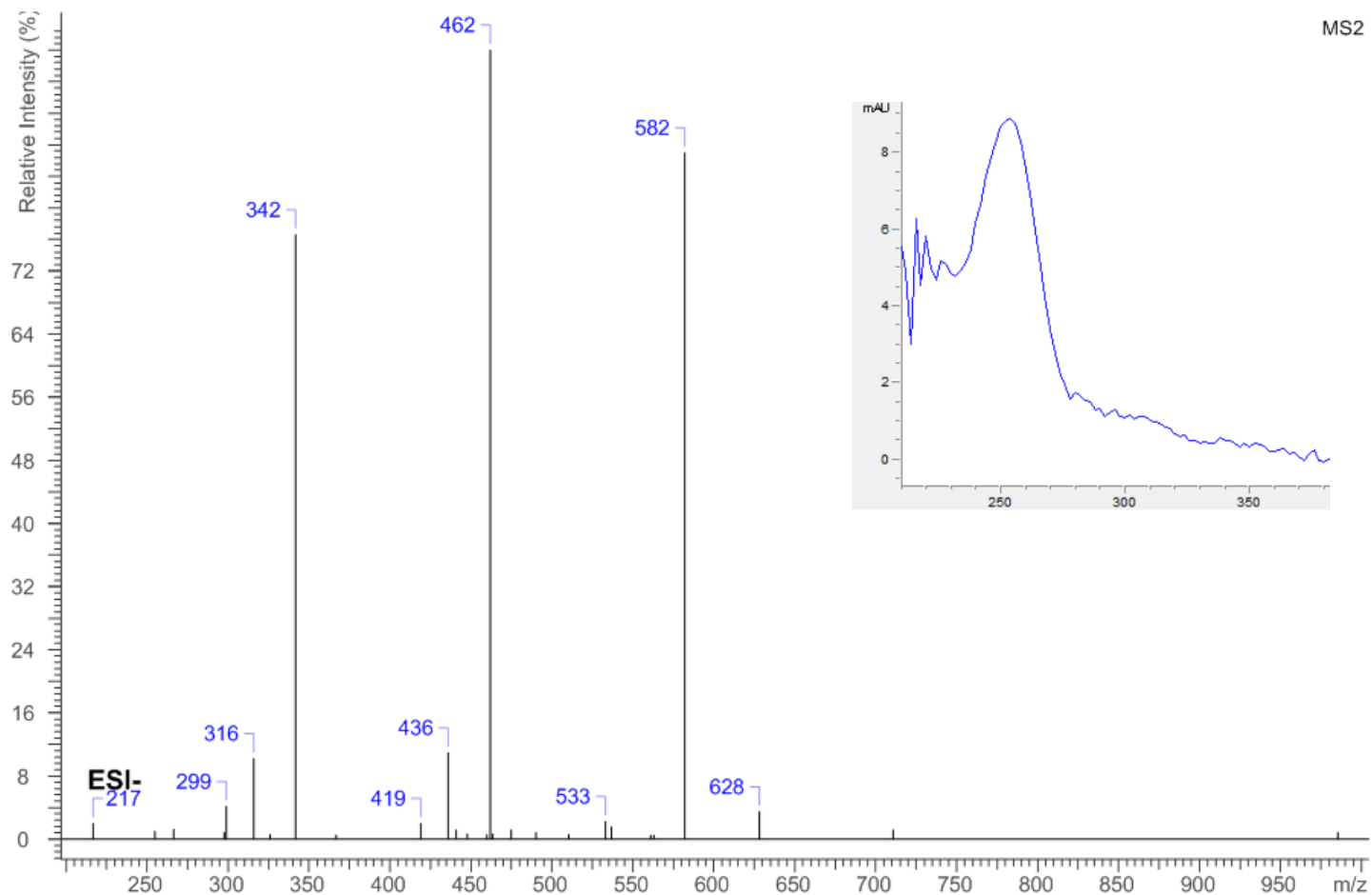
Cannabisin D



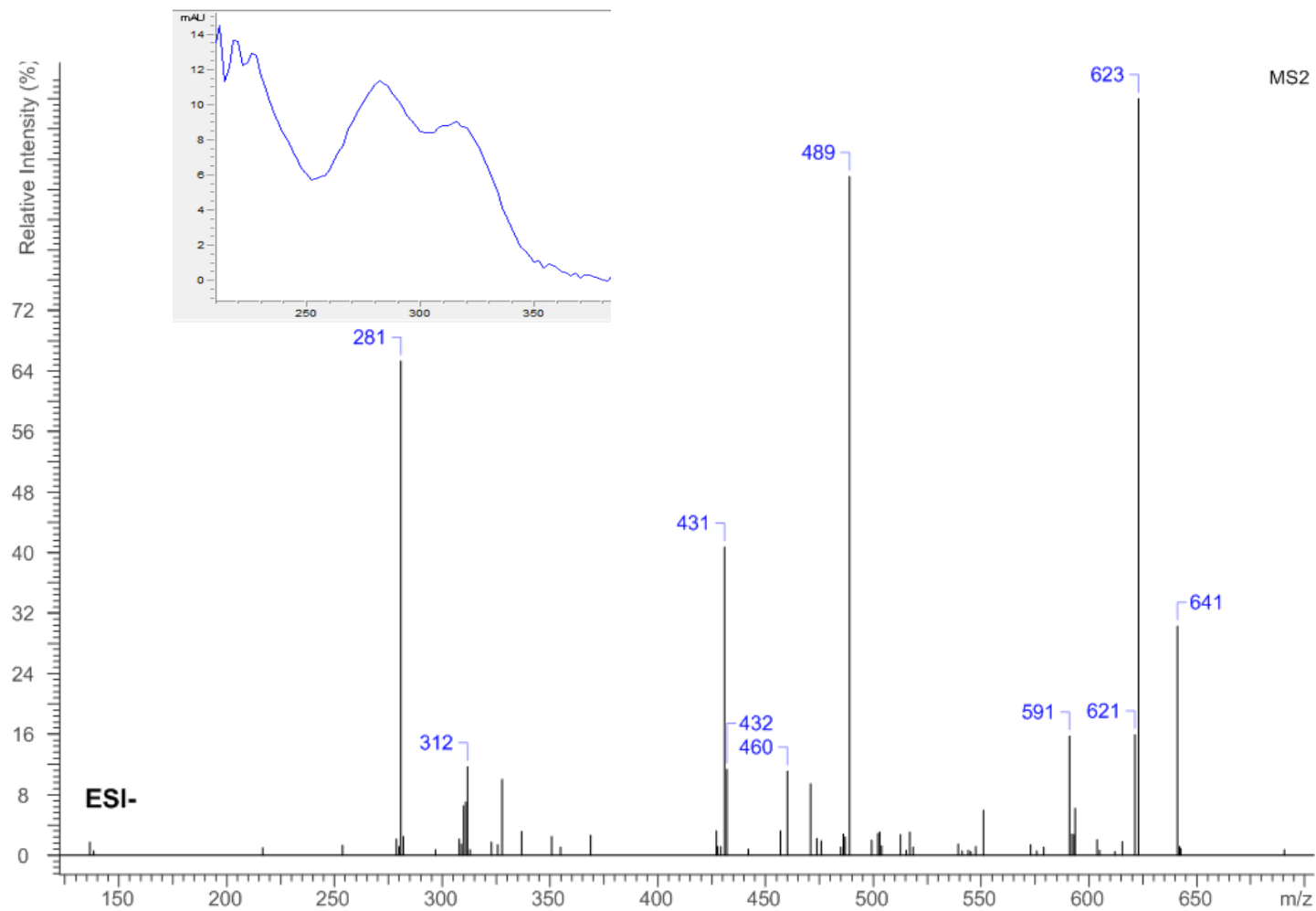
3,3-didemethylgrossamide



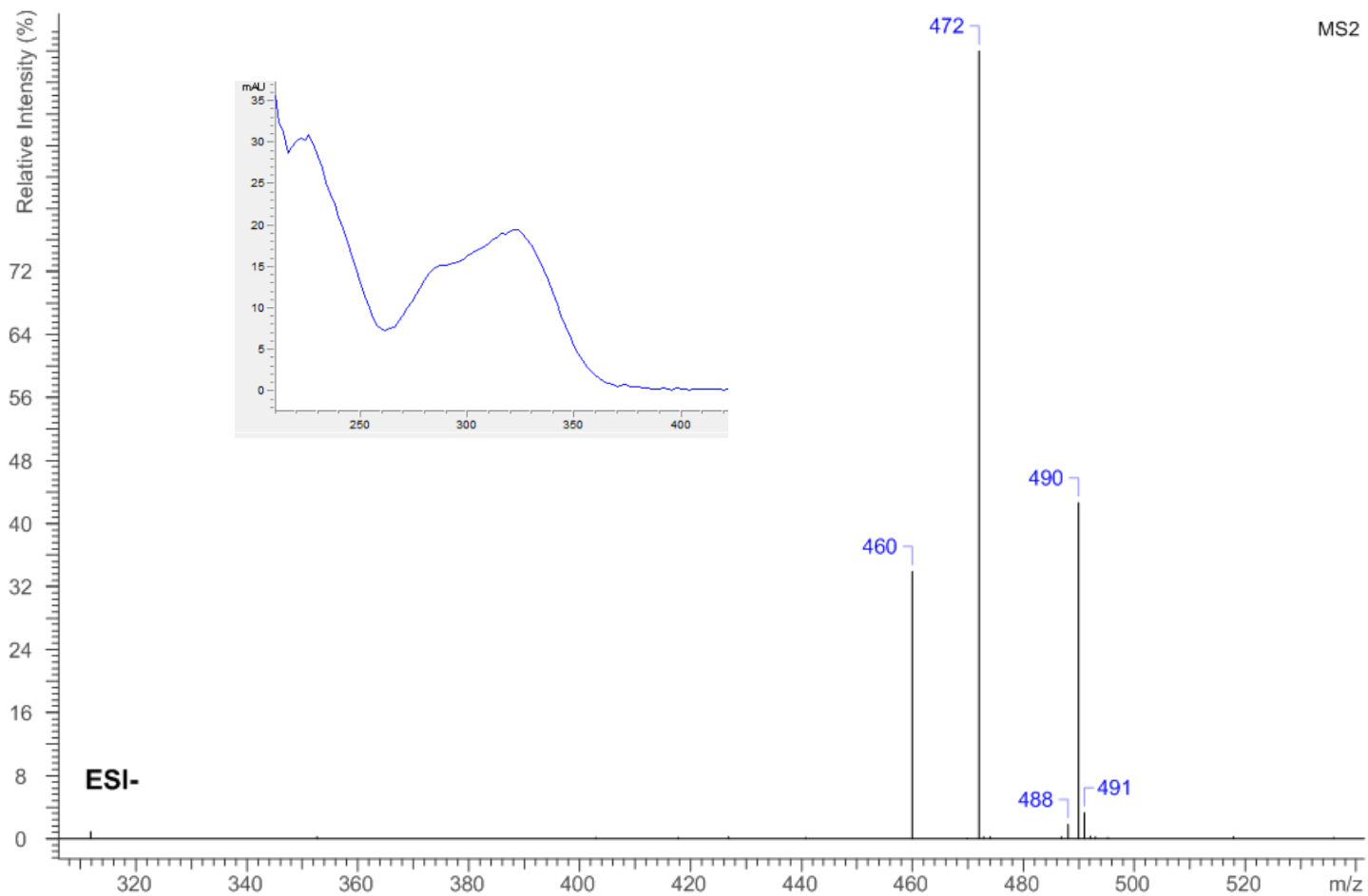
Tri-p-coumaroylspermidine



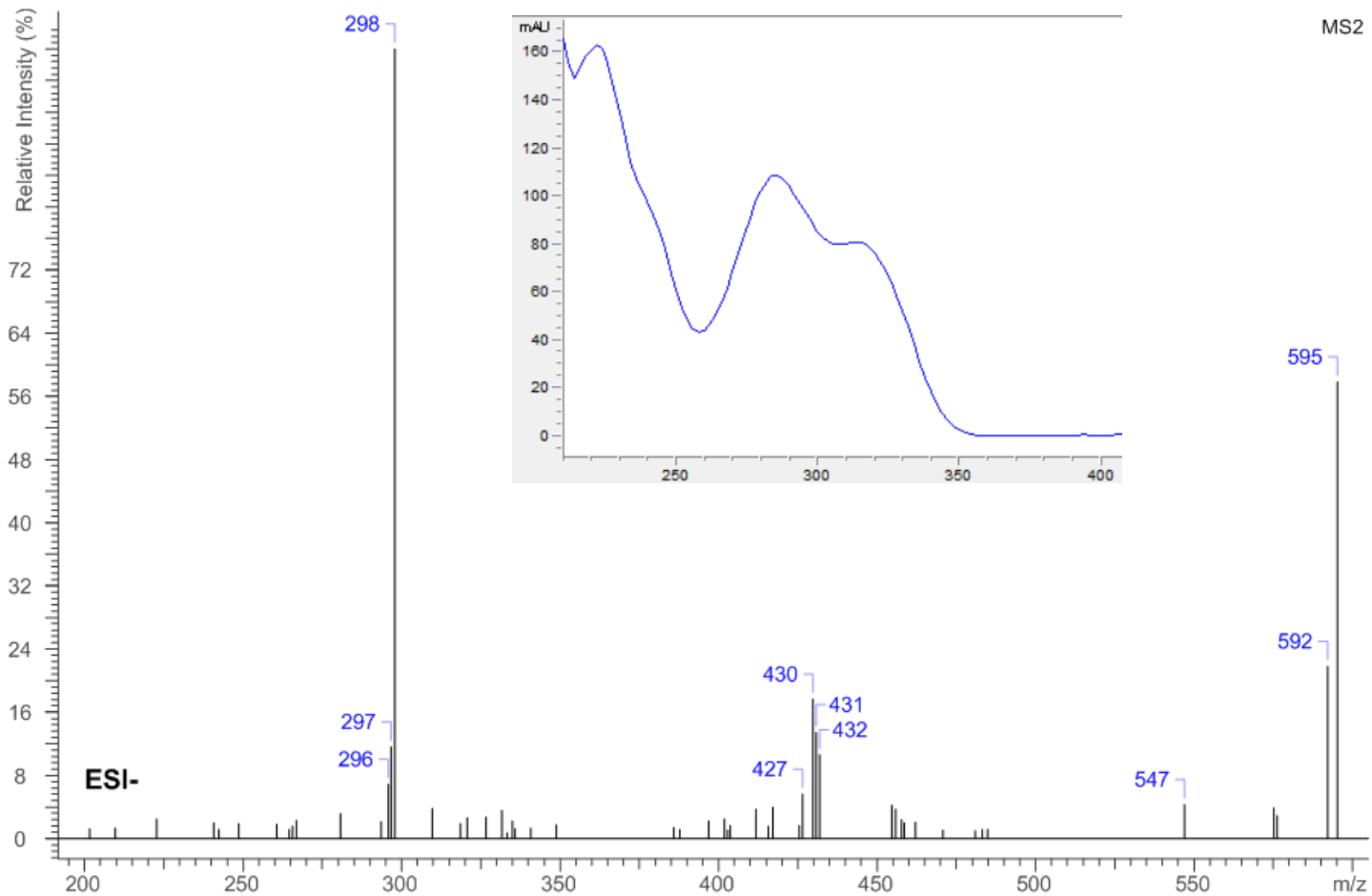
Cannabisin E



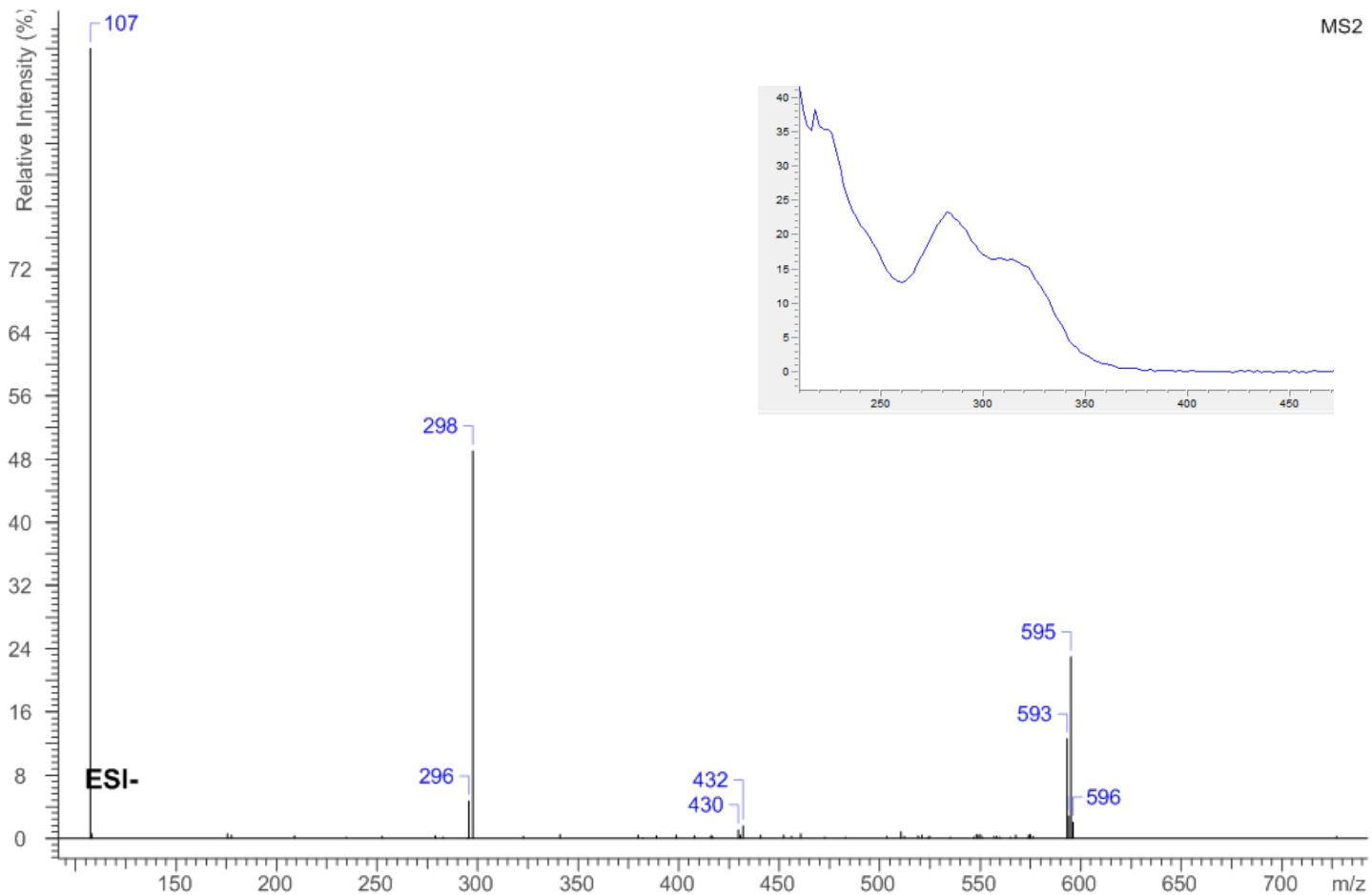
Grossamide K



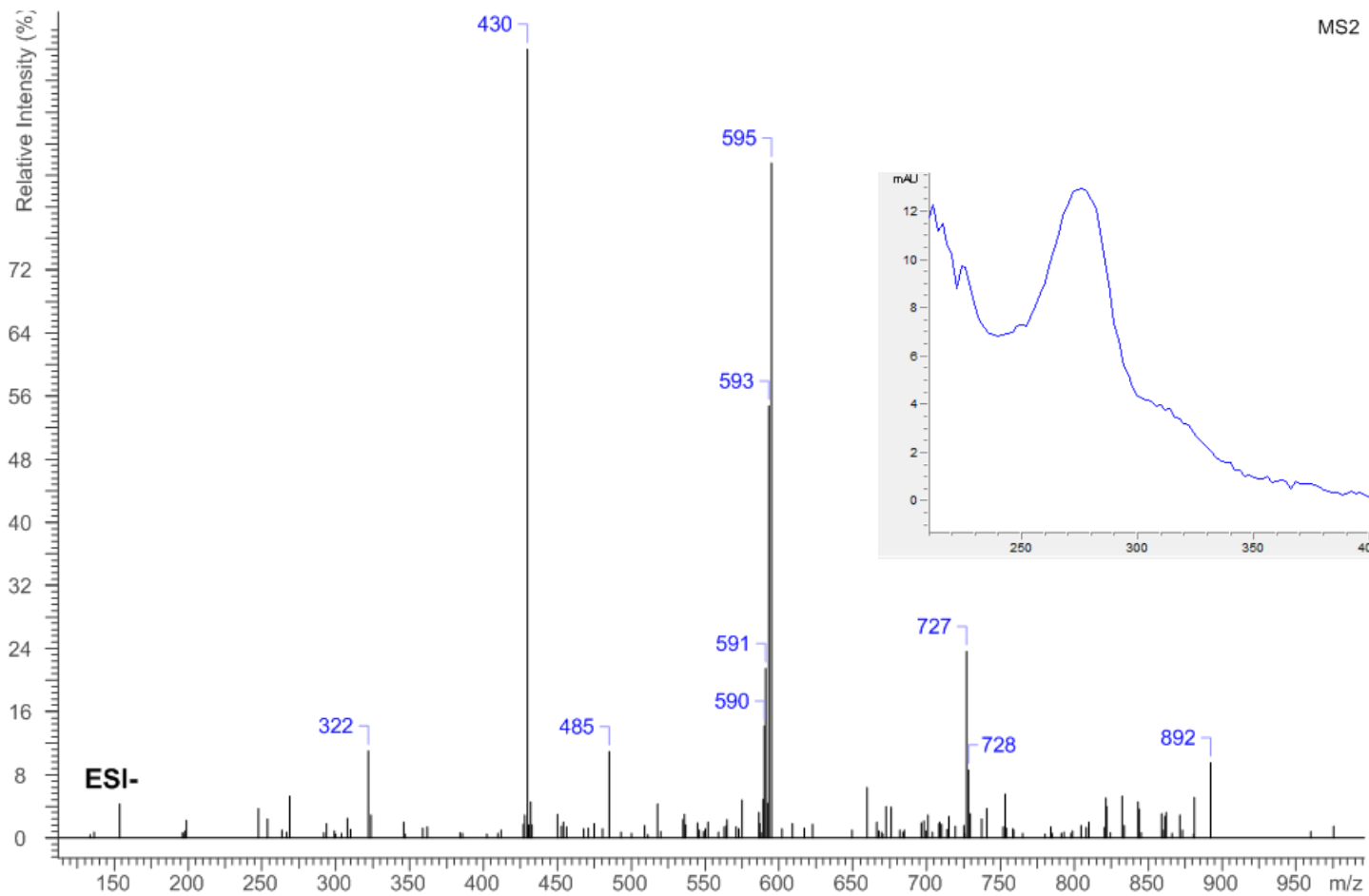
Cannabisin M



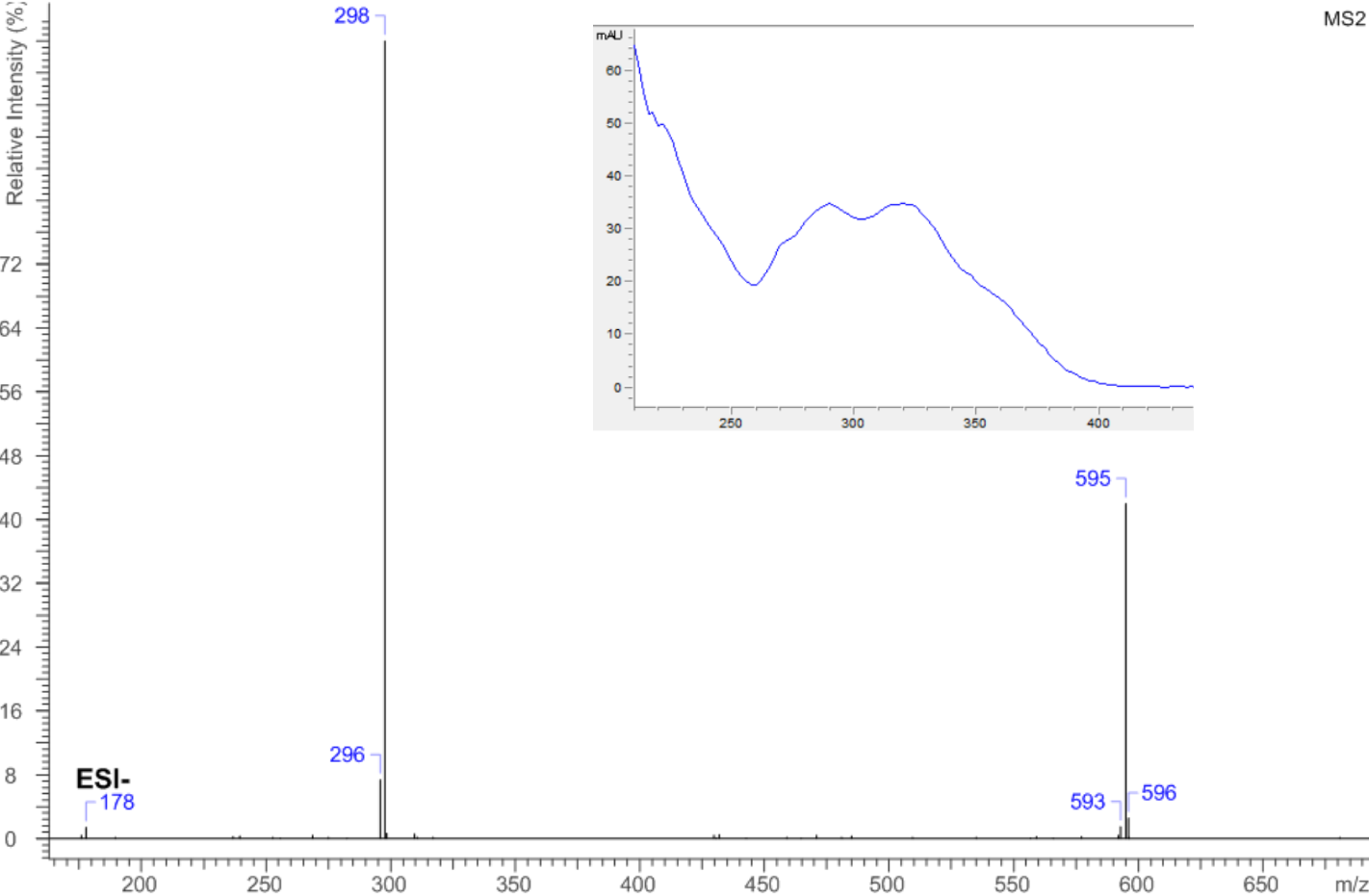
3,3'-demethyl-heliotropamide



Unnamed condensed trilignanamide

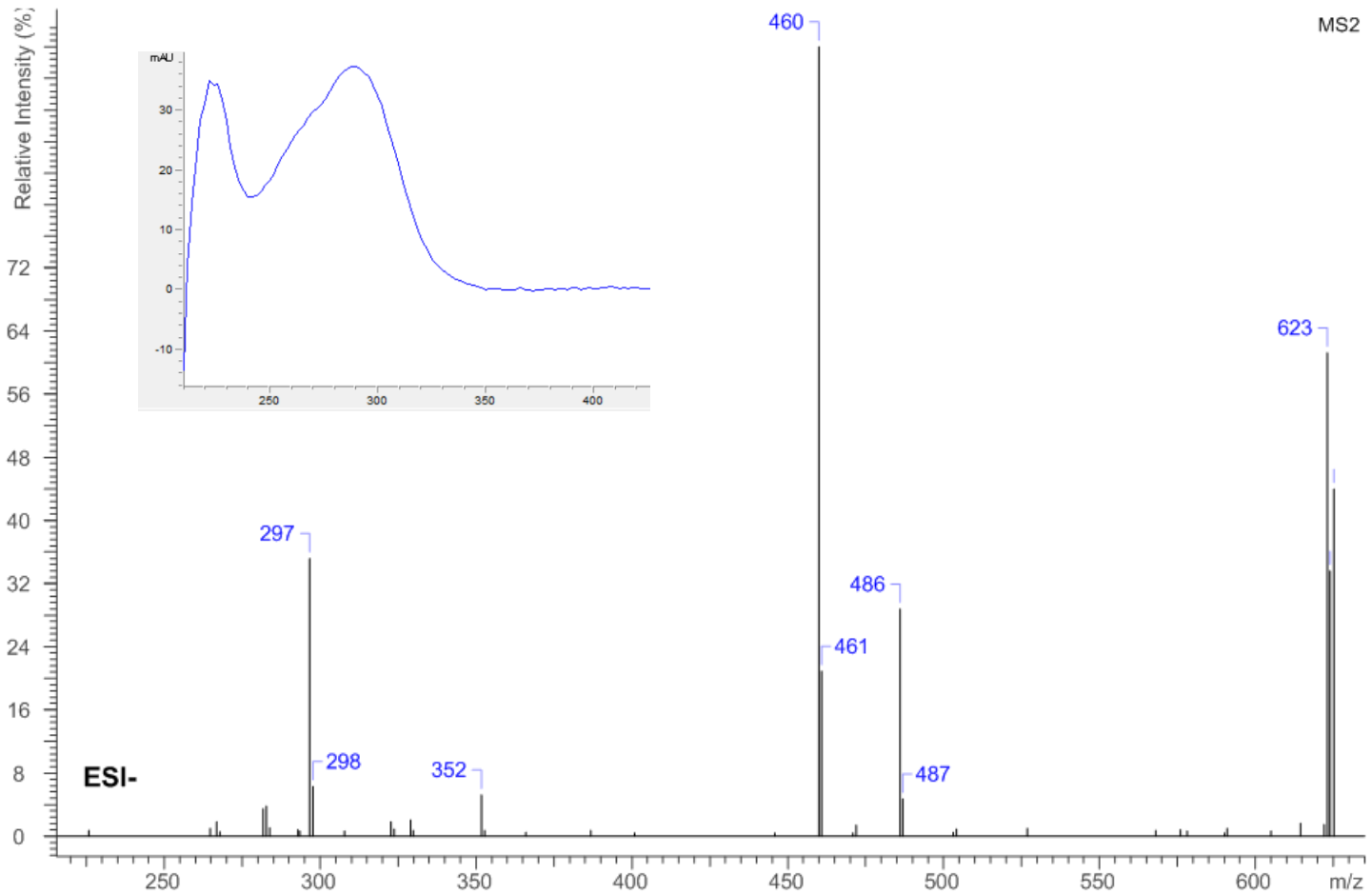


Cannabisin Q

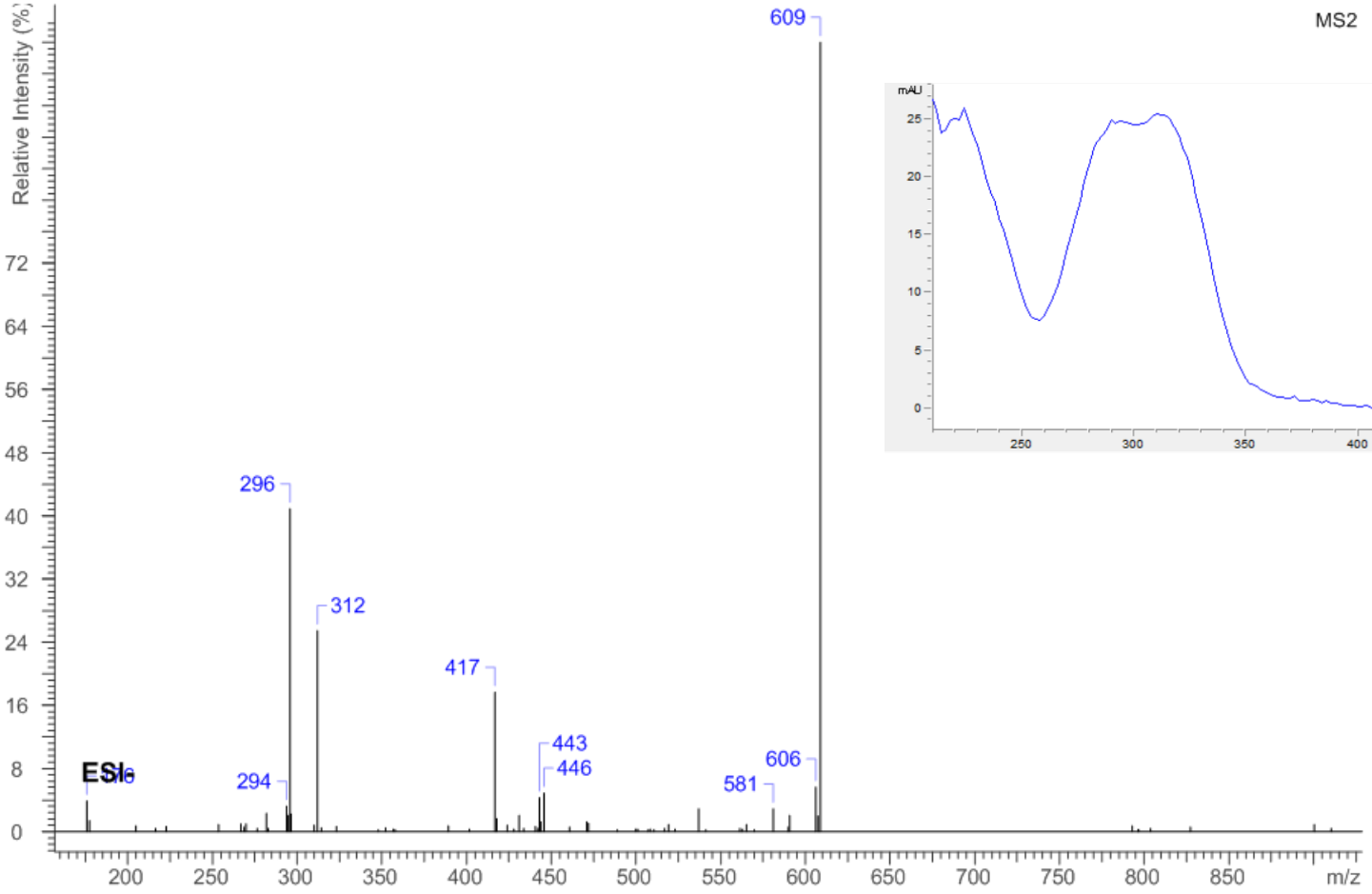


MS2

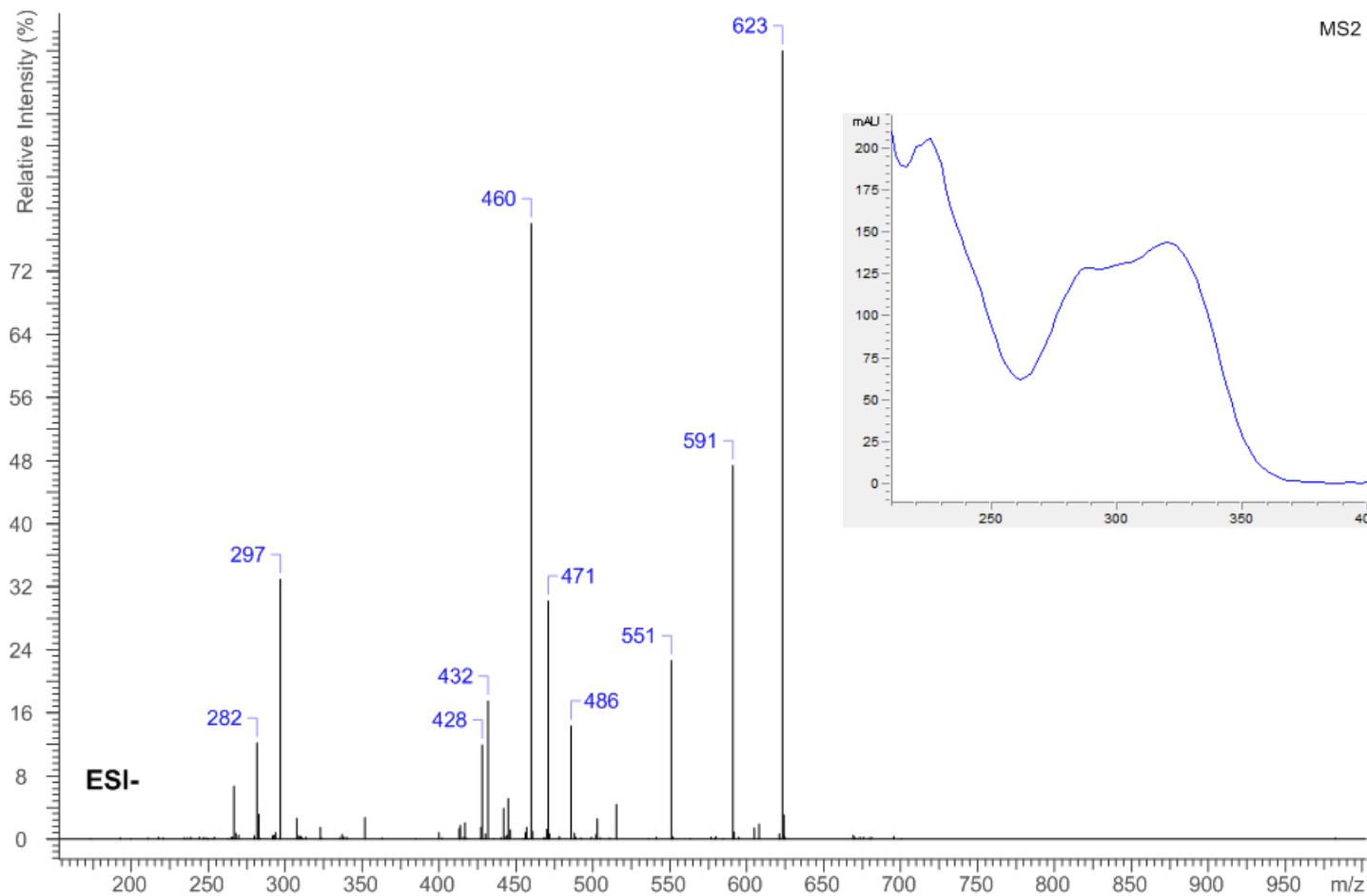
Cannabisin F



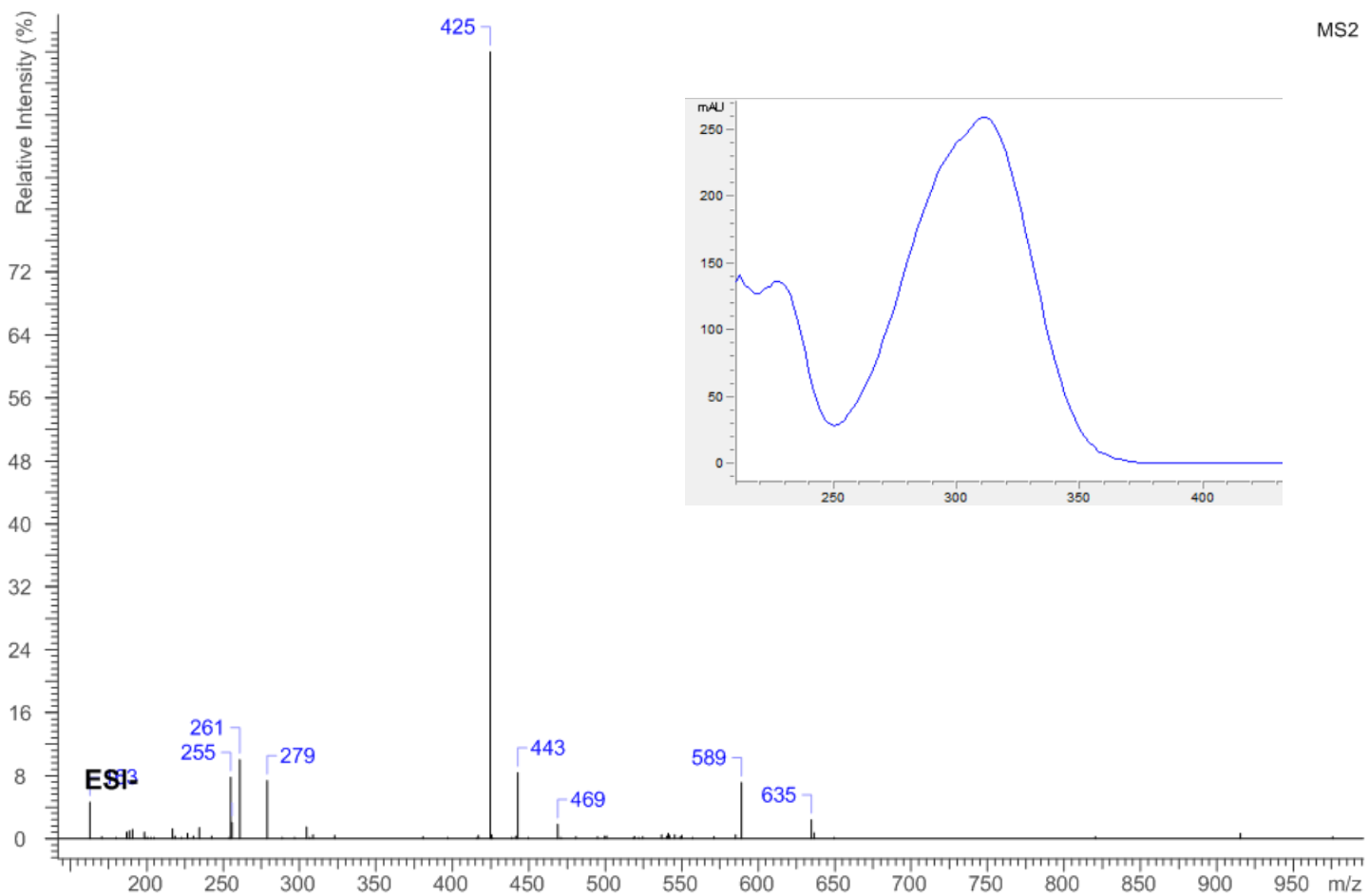
Isocannabisin N



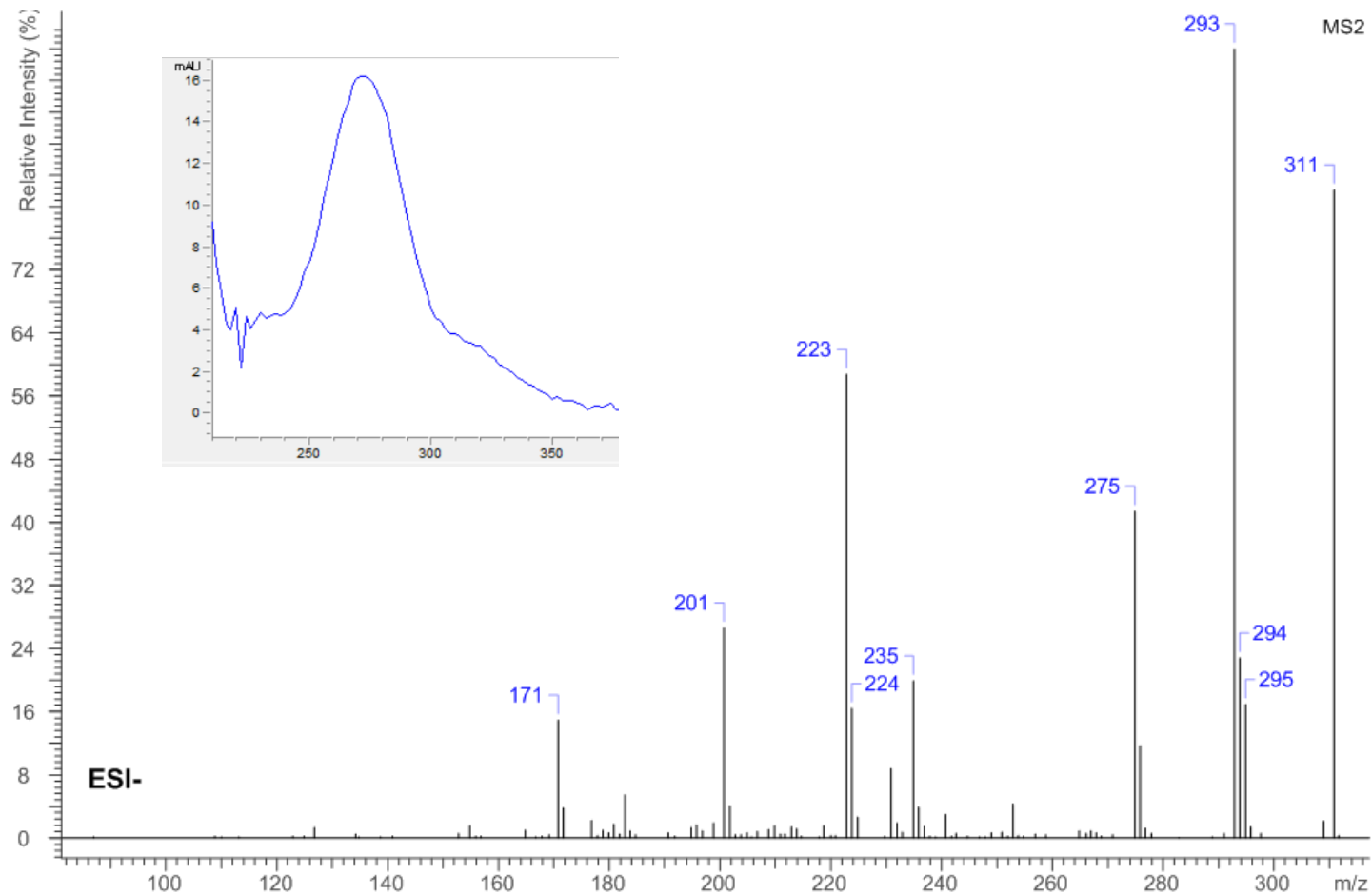
Grossamide



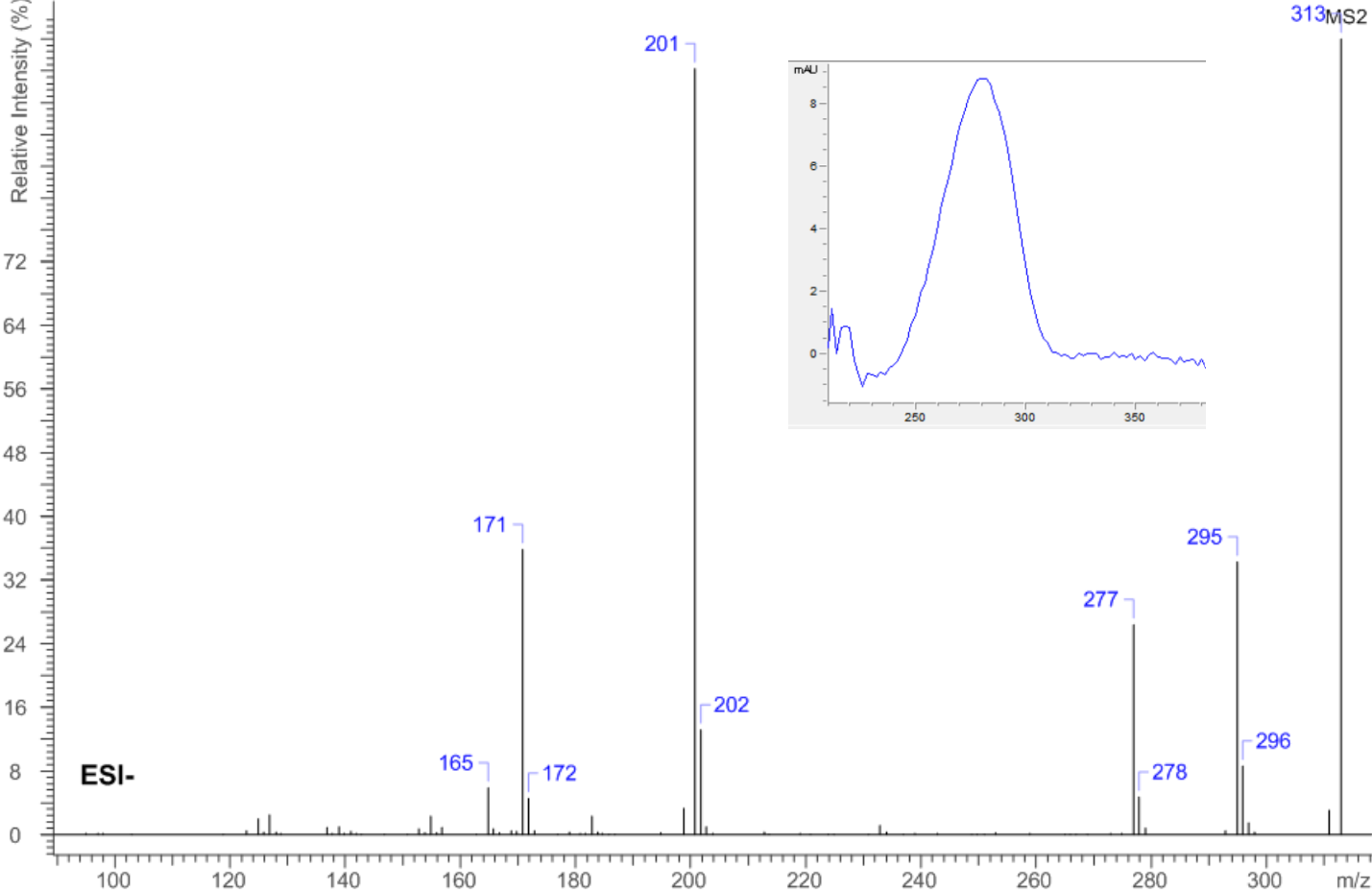
Unnamed lignanamide



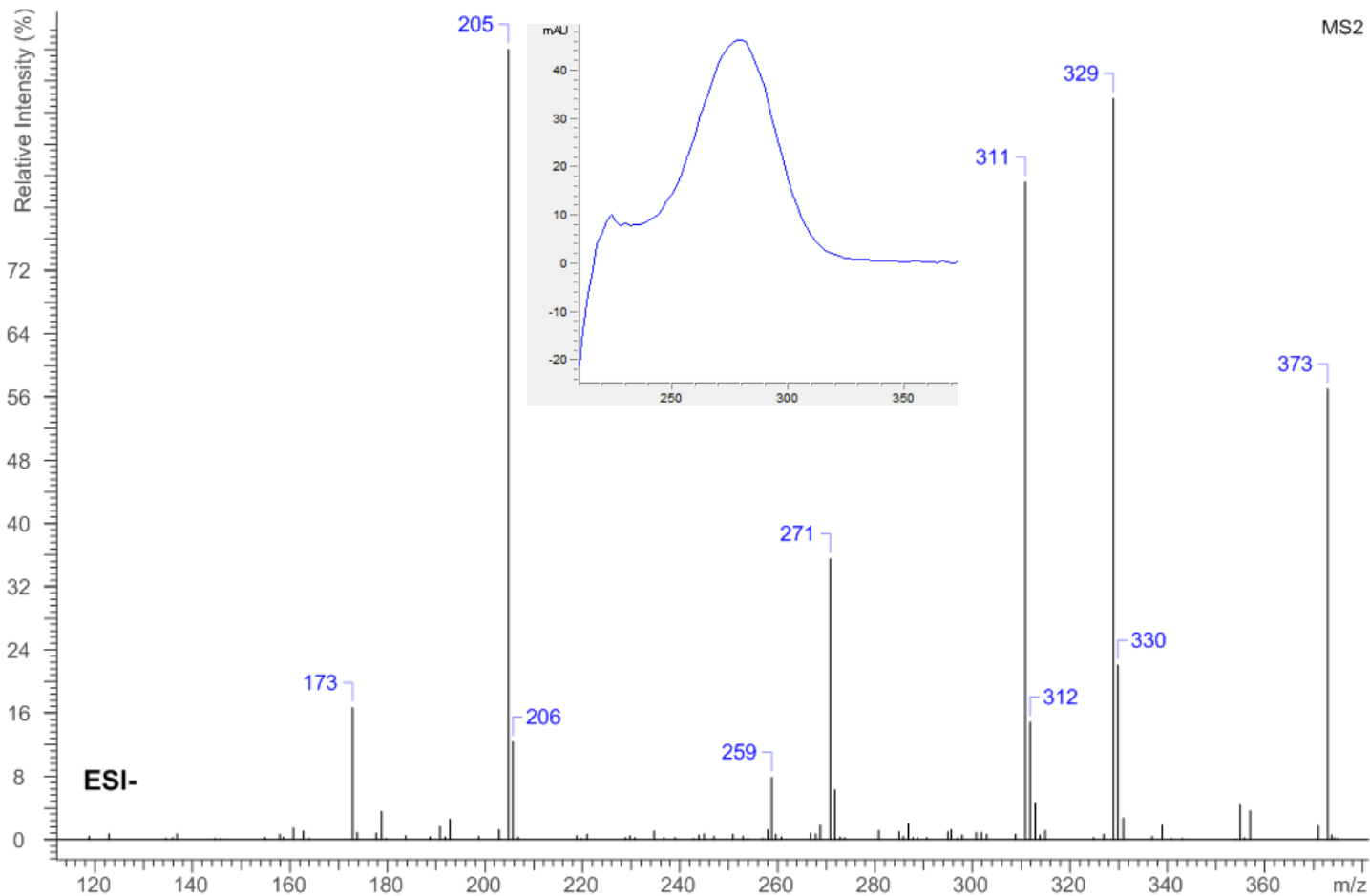
Dihydrocannabinol



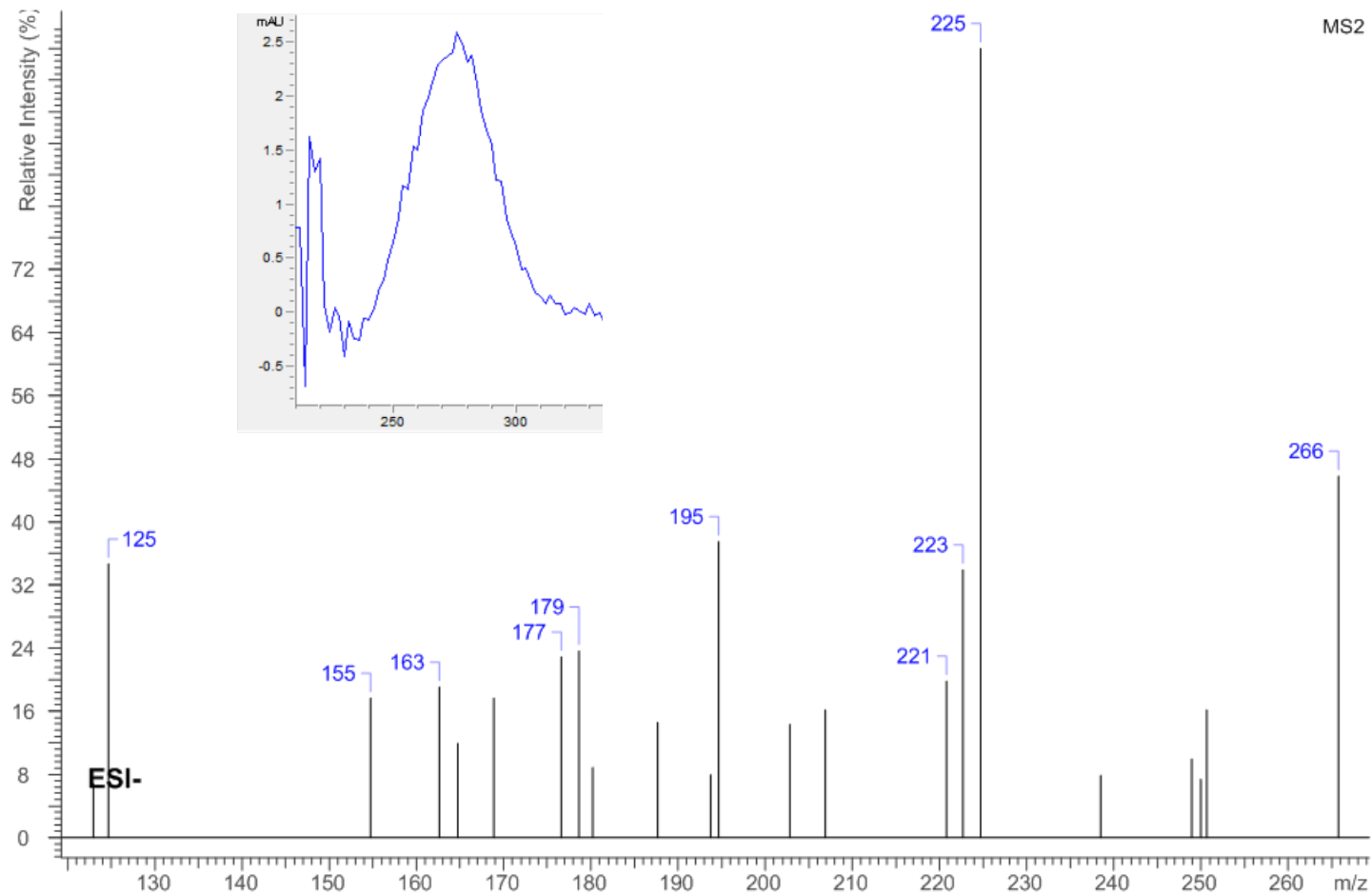
Cannabidiol (CBD)



Cannabielsoic acid



Sinapic acid



Cannabidiolic acid (CBDA)

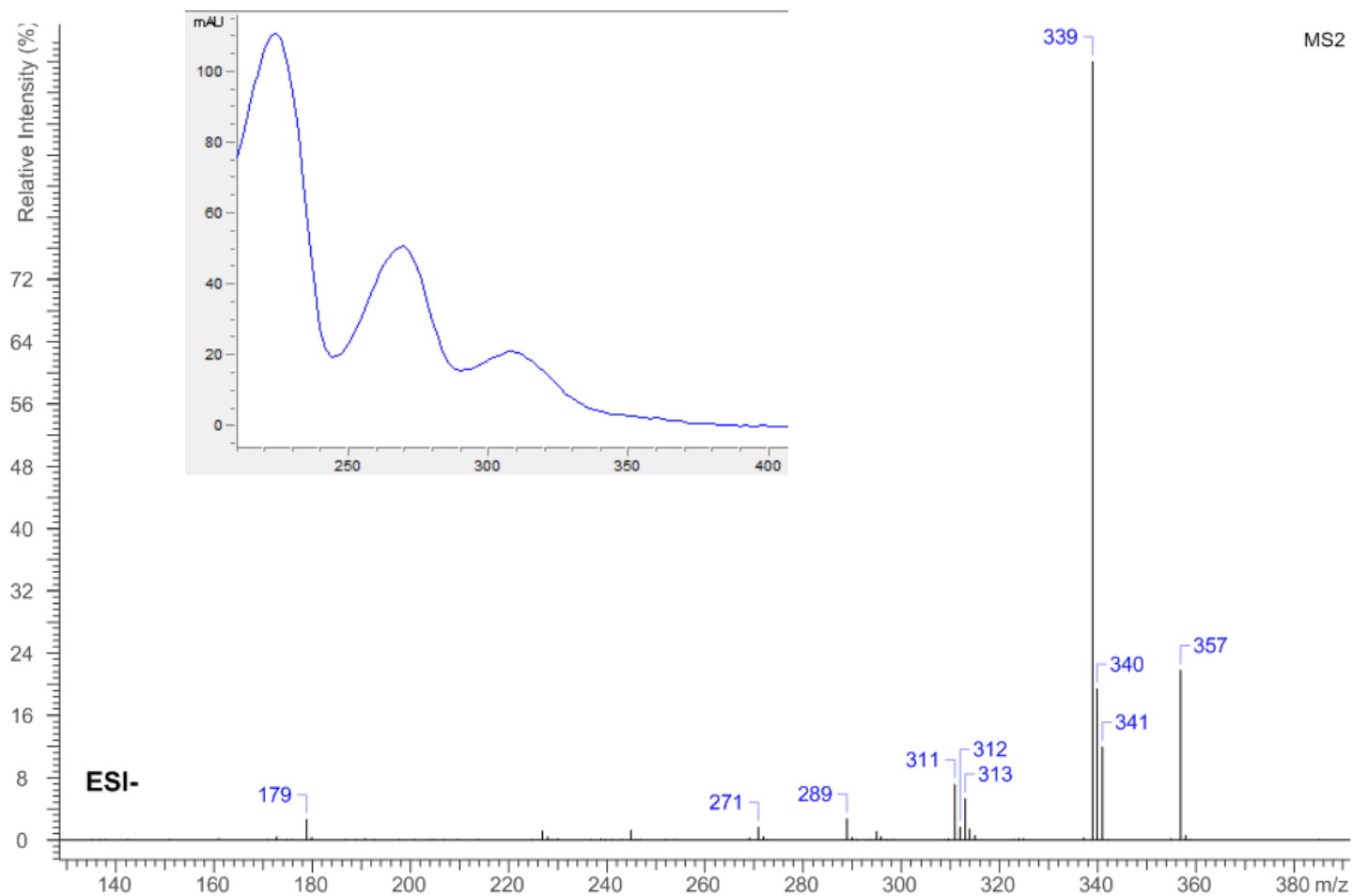


Figure S2. MS² spectra and UV-DAD spectrum of the identified phenolic compounds extracted from defatted hemp seeds