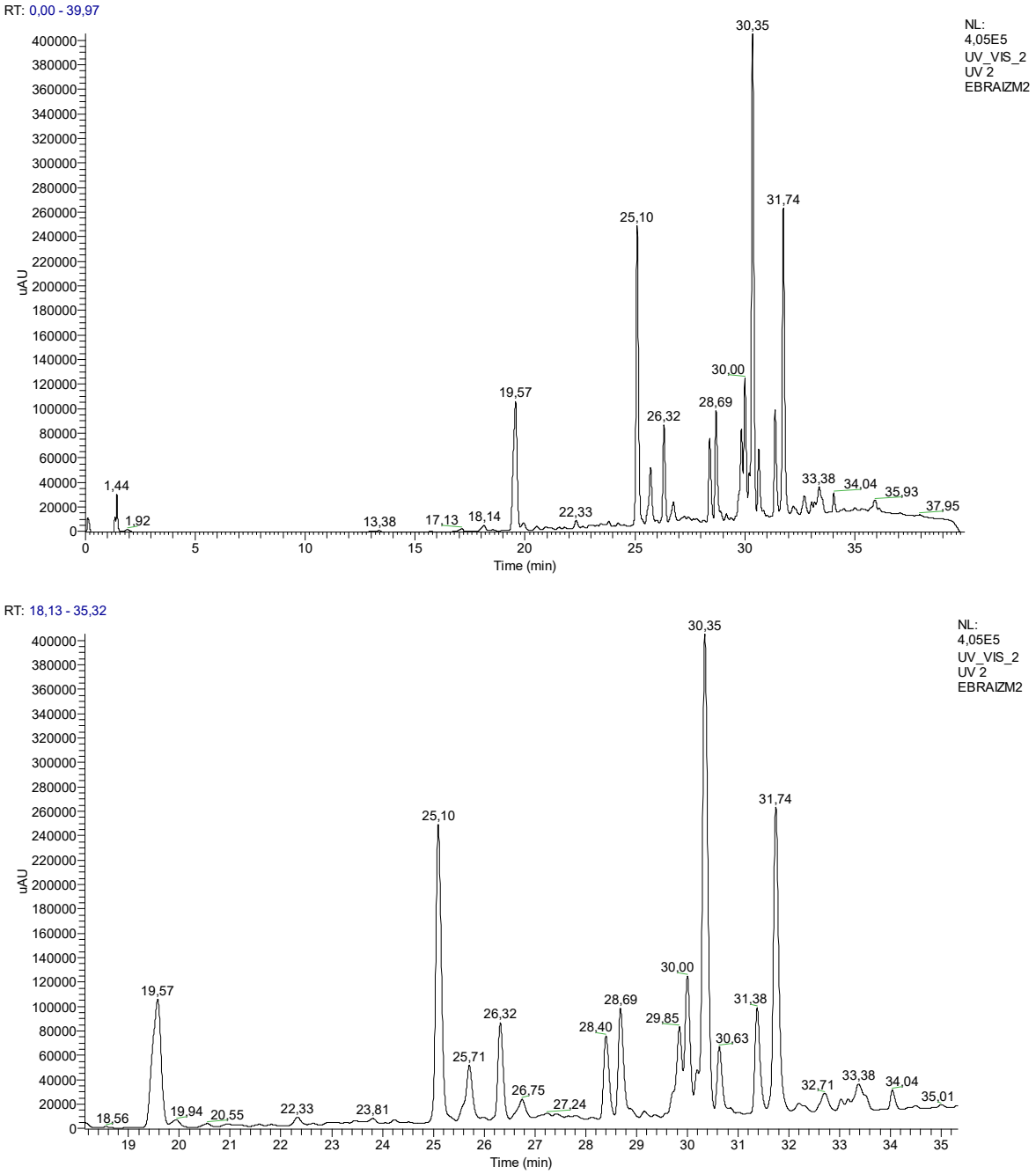
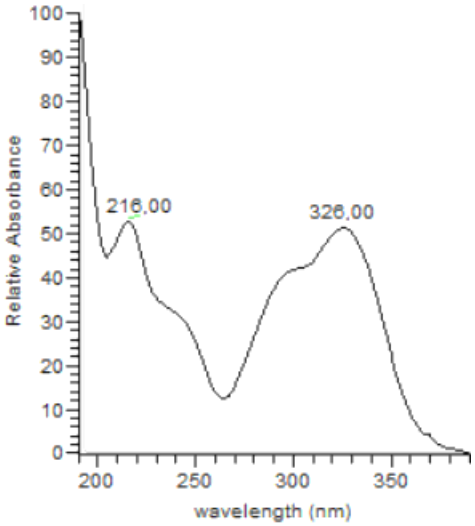
Supplementary Material

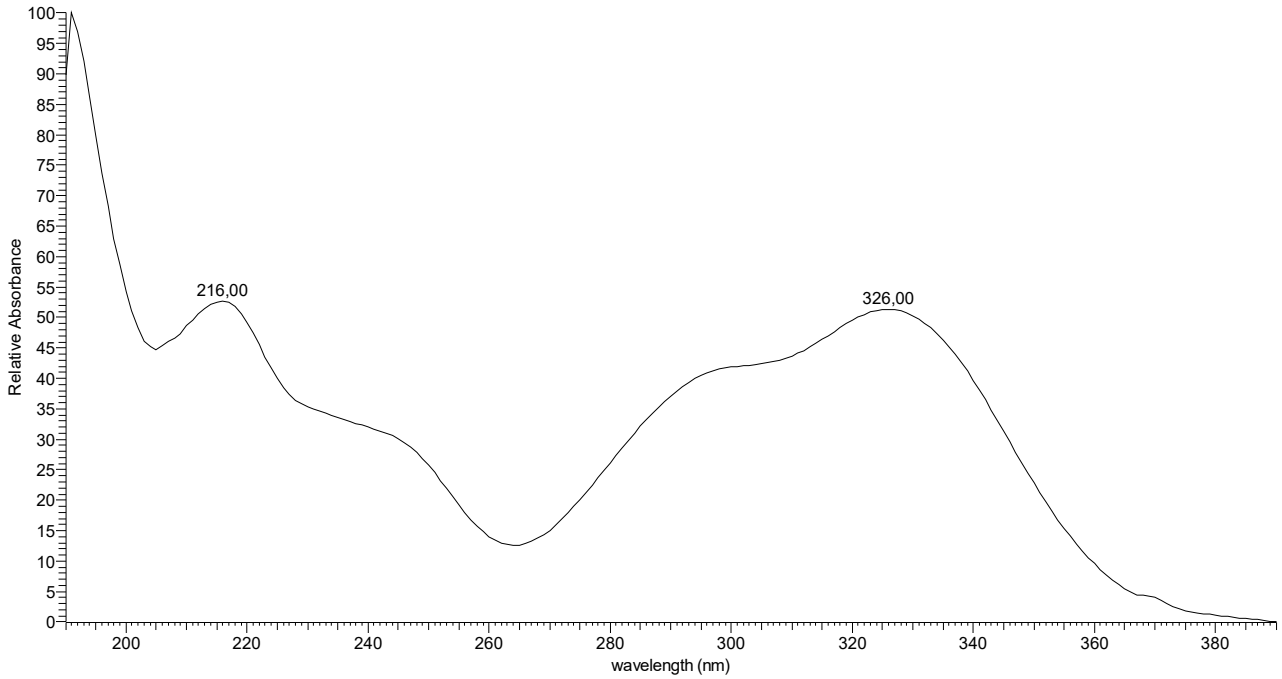
Figure S1. Chromatograms obtained by HPLC-ESI/MS analysis of the crude root extract of *A. millefolium* using the phenolics method:

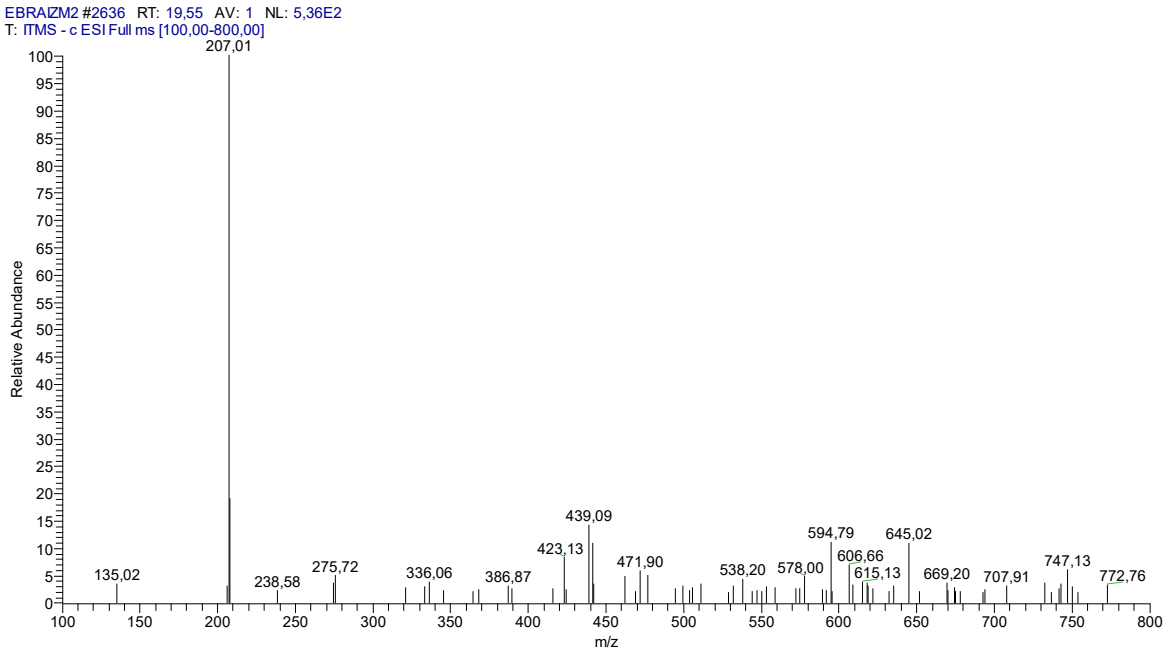


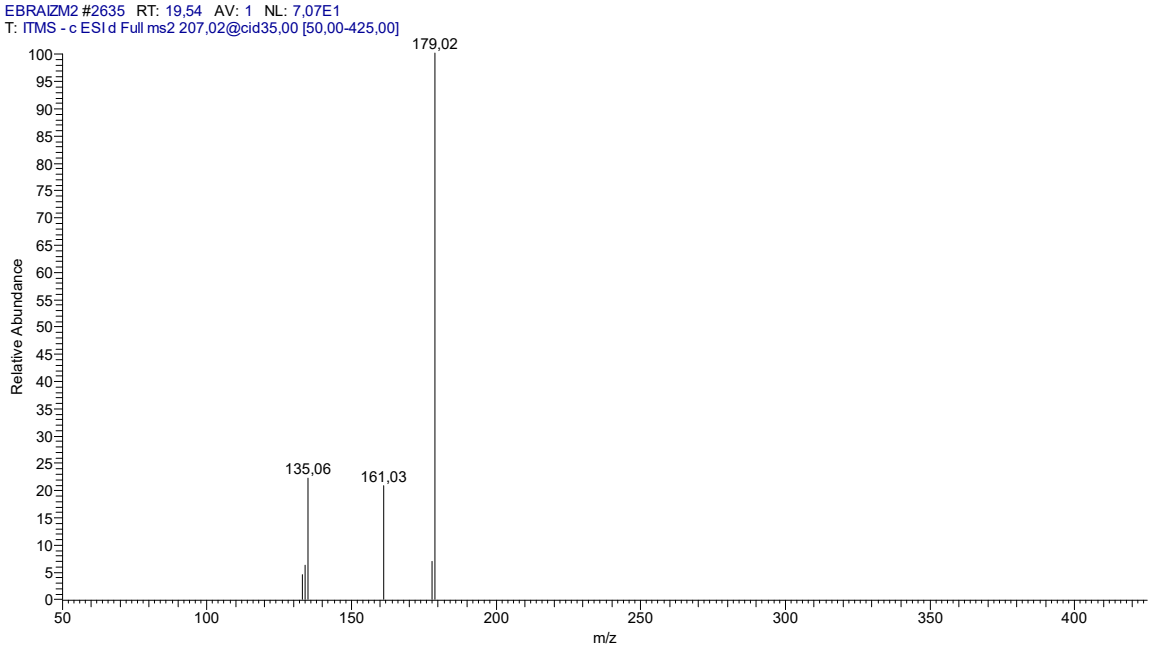
1. **RT = 19,57 min**



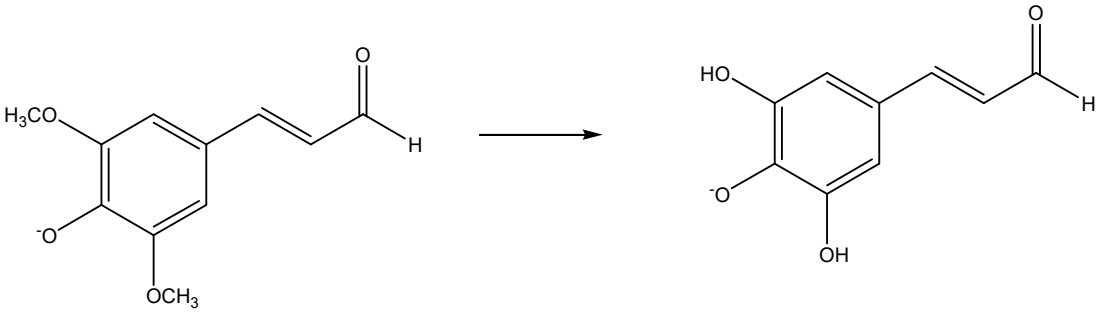
EBRAIZM2 #5862 RT: 19,54 AV: 1 NL: 4,71E5 microAU







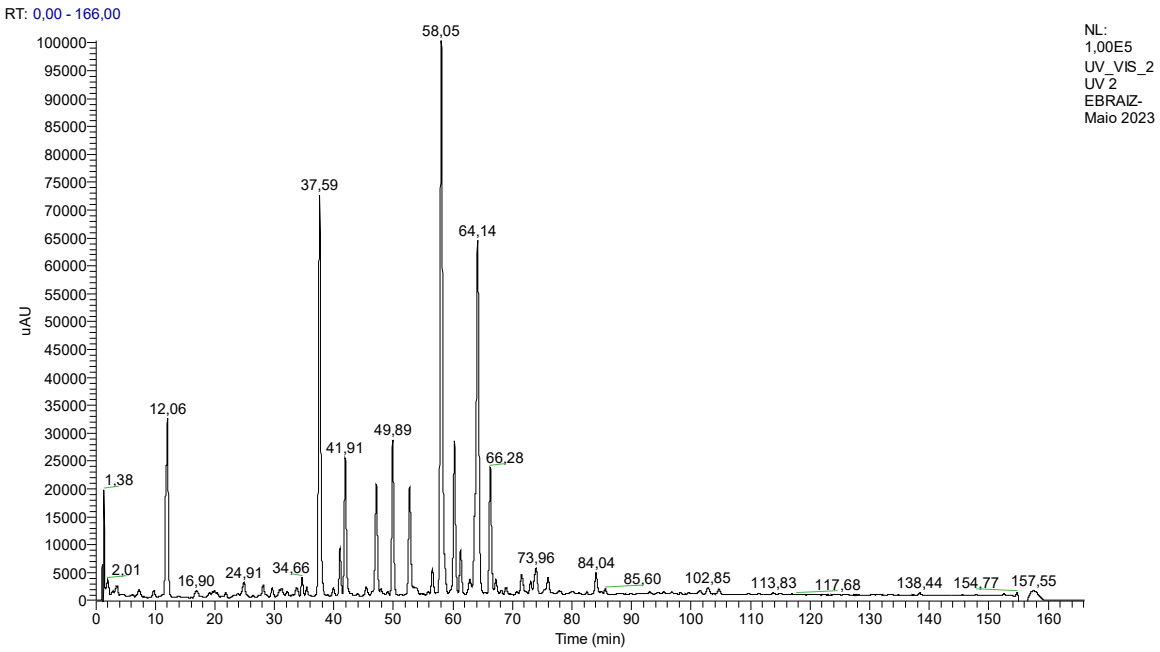
M-H 207,02 | $C_{11}H_{12}O_4$ | sinapaldehyde:

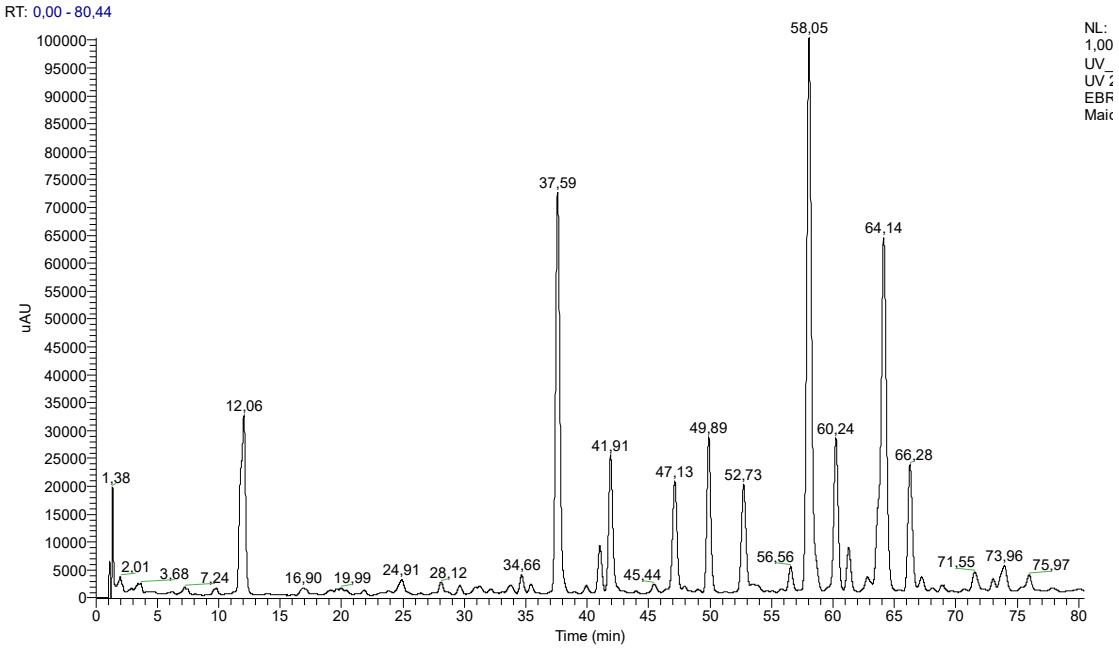


M-H 207,08

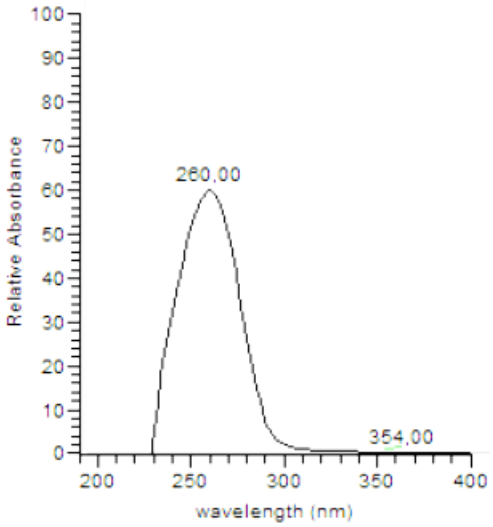
m/Z 179

Chromatograms obtained by HPLC-ESI/MS analysis of the crude root extract of *A. millefolium* using the alkamides method:

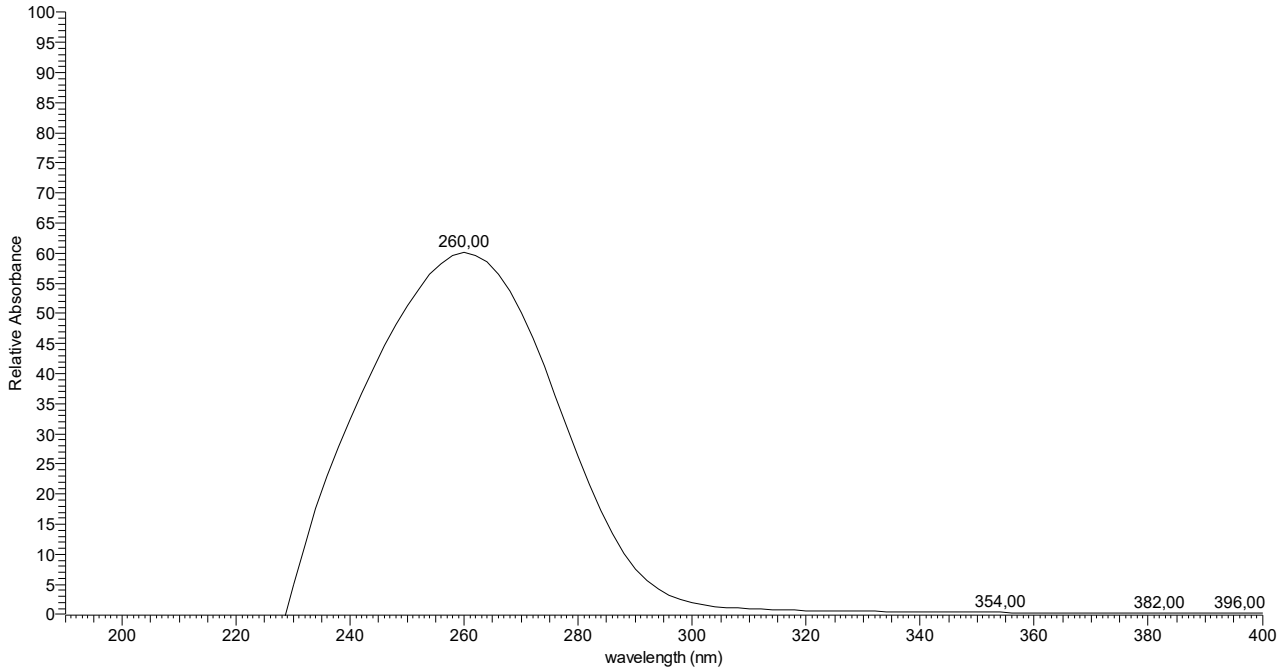


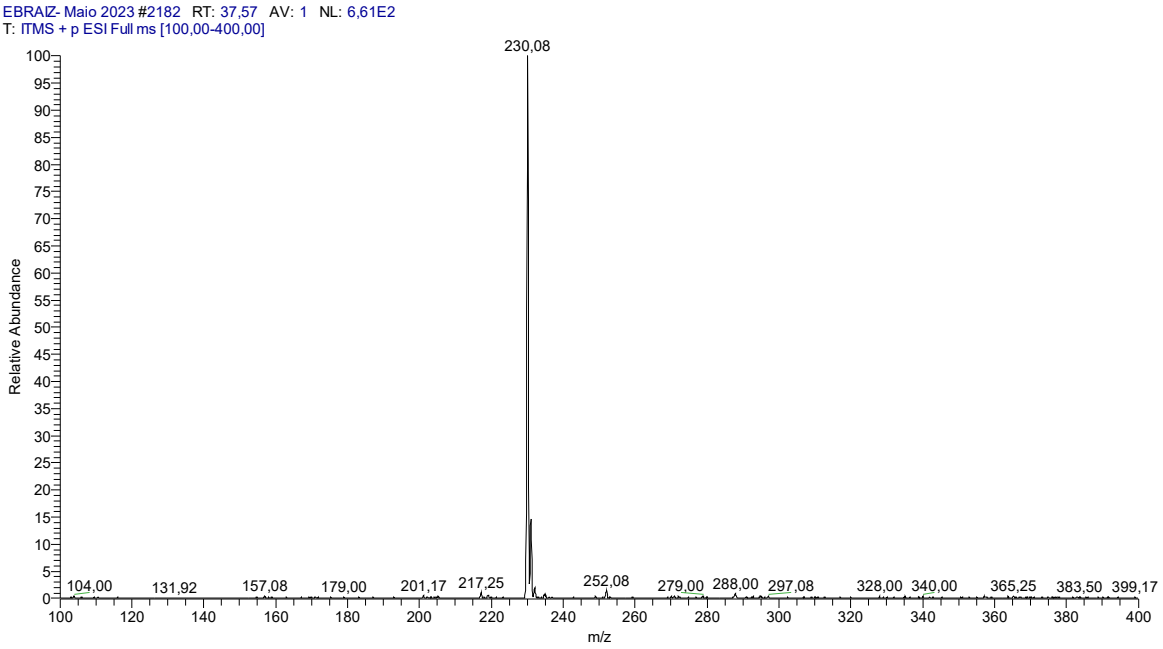


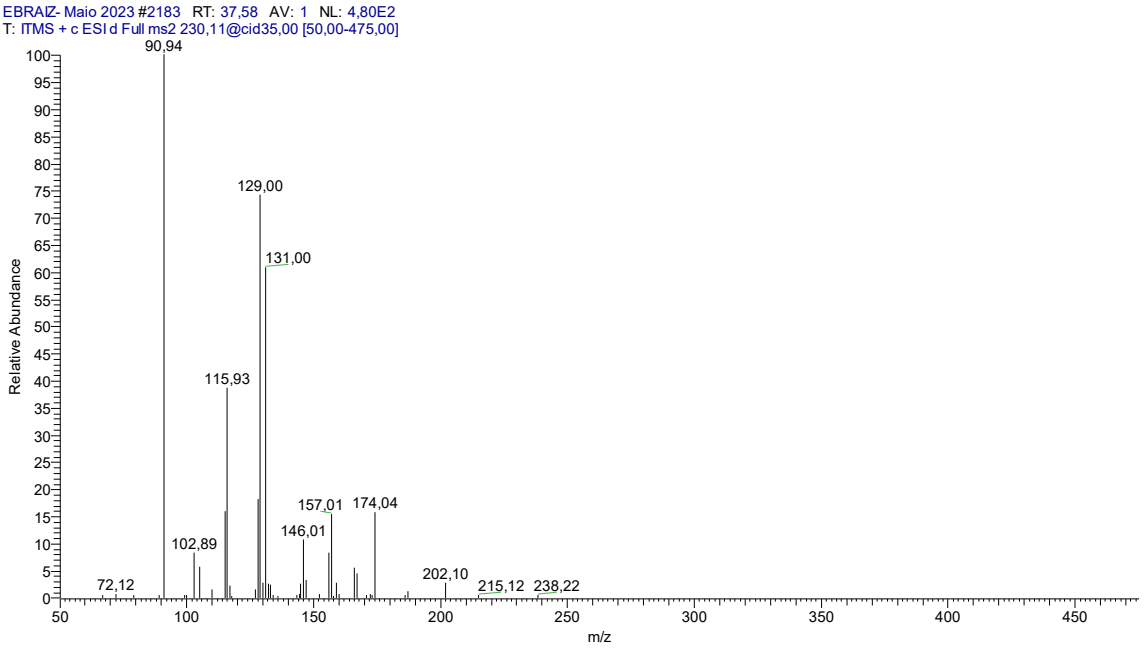
1. **RT 37,59 min**



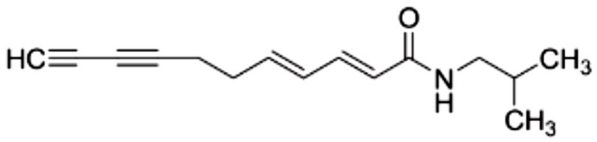
EBRAIZ- Maio 2023 #11276 RT: 37,59 AV: 1 NL: 1,21E5 microAU



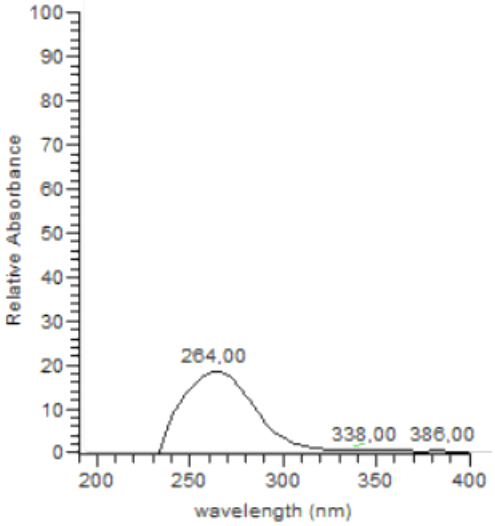




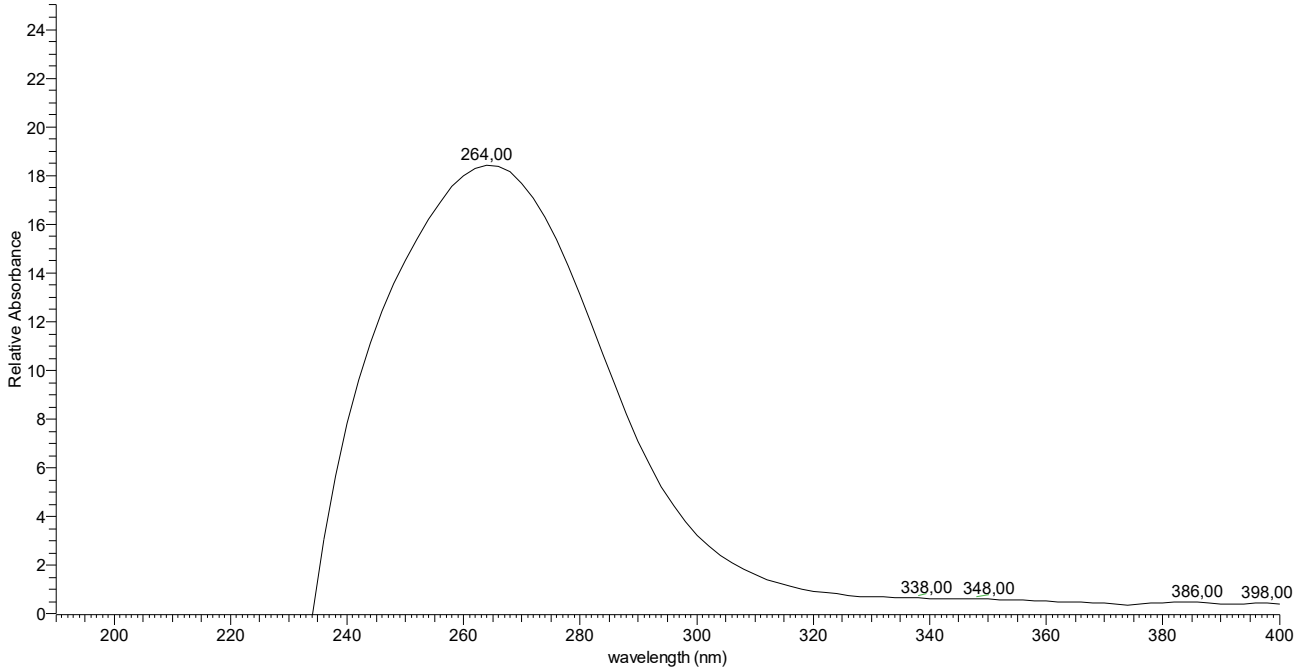
M-H 230,08 | $C_{15}H_{19}NO$ | Isobutylamide of undeca-2E,4E-dieno-8,10-diynoic acid

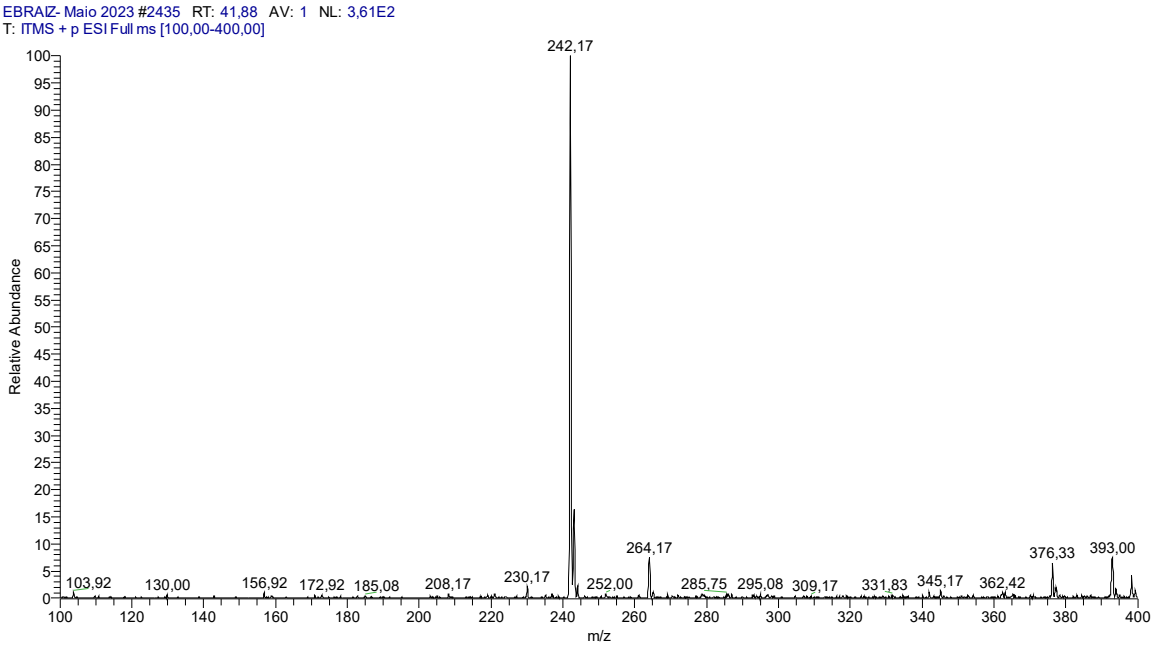


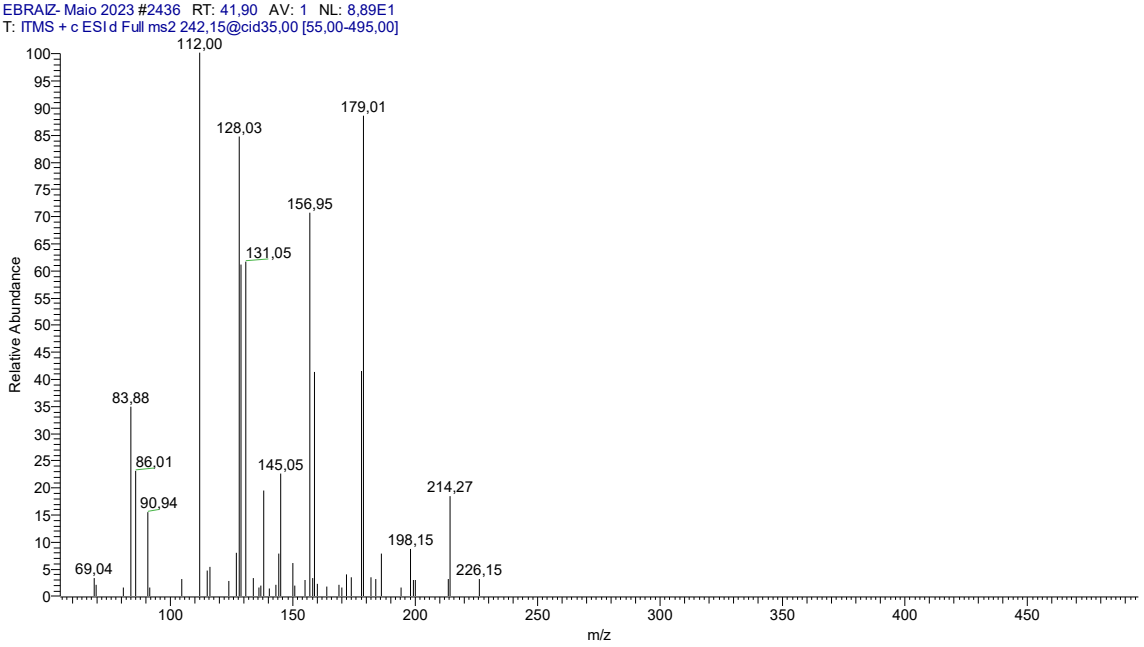
2. RT 41,91 min



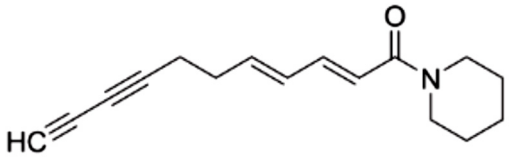
EBRAIZ- Maio 2023 #12570 RT: 41,90 AV: 1 NL: 1,42E5 microAU



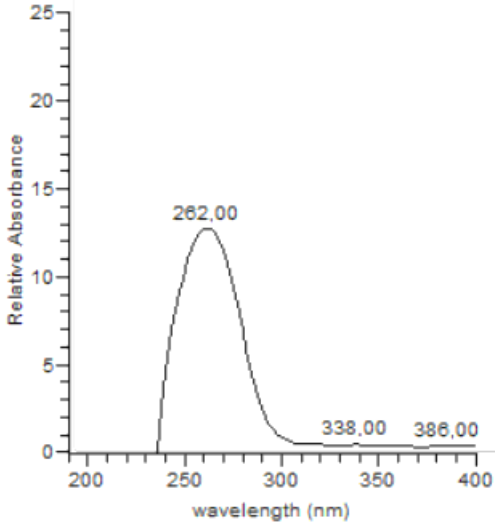




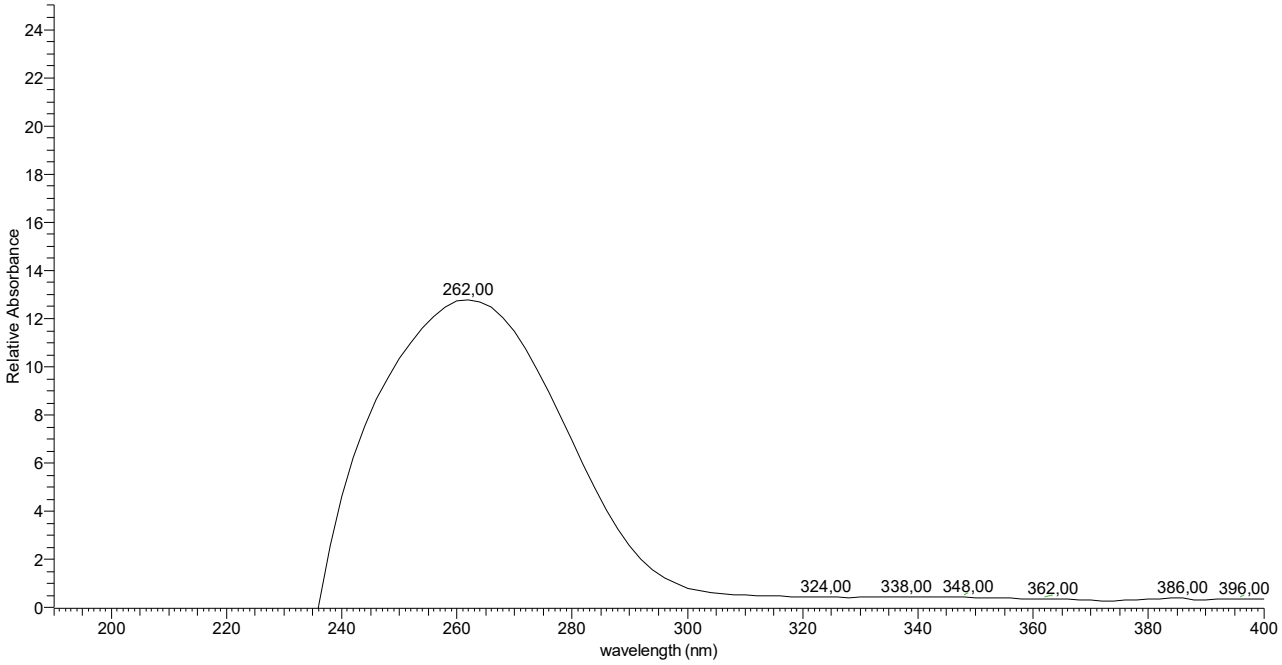
M-H 242,17 | $C_{16}H_{19}NO$ | Piperidamide of undeca-2E,4E-dieno-8,10-diynoic acid

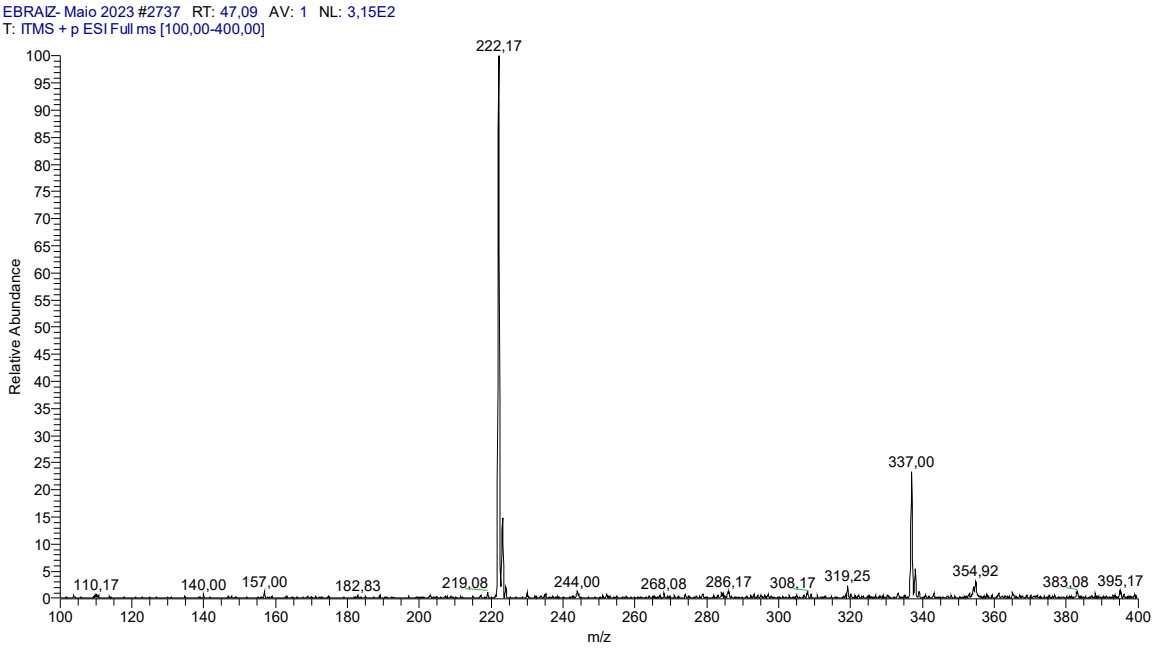


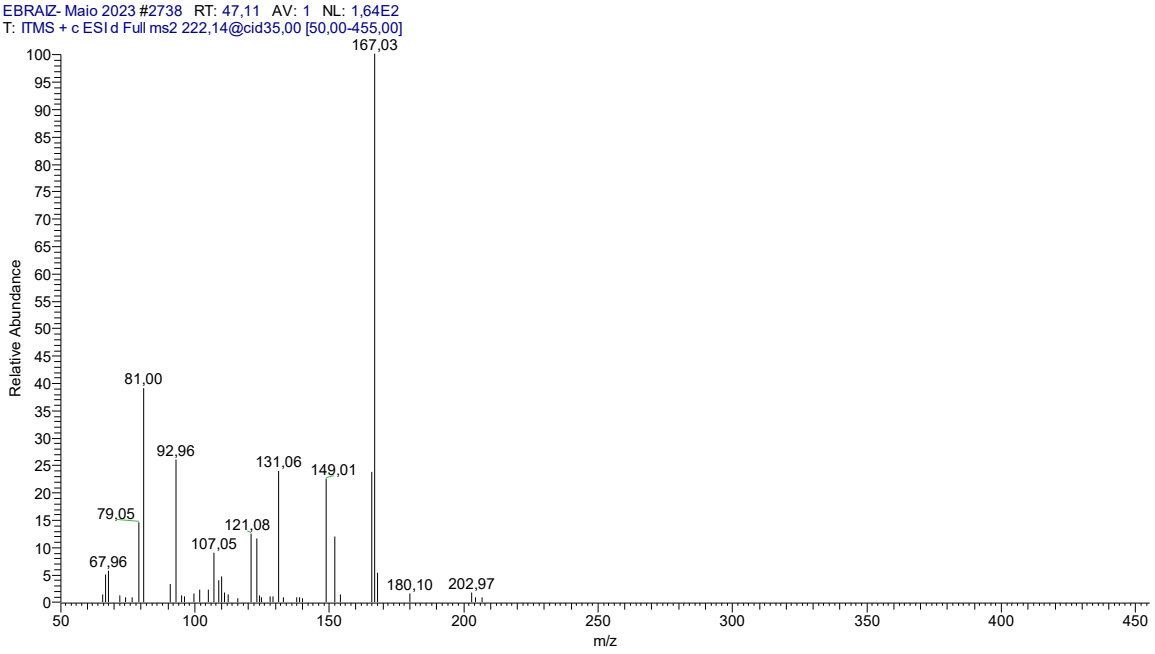
3. RT 47,13 min



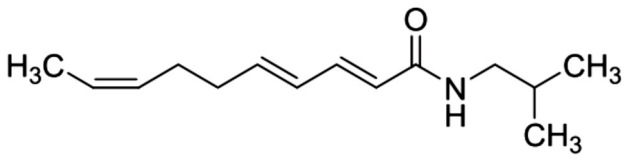
EBRAIZ- Maio 2023 #14127 RT: 47,09 AV: 1 NL: 1,60E5 microAU



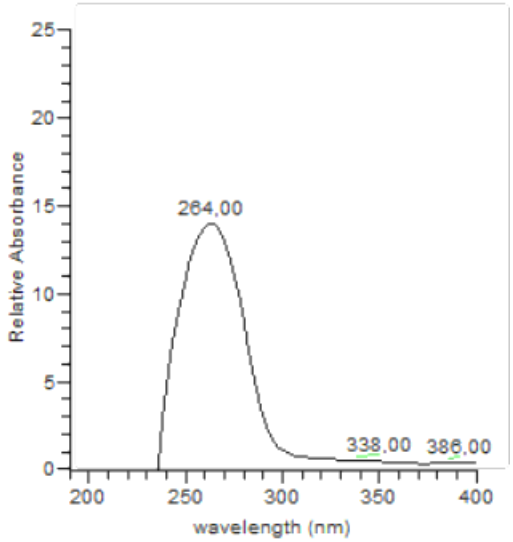




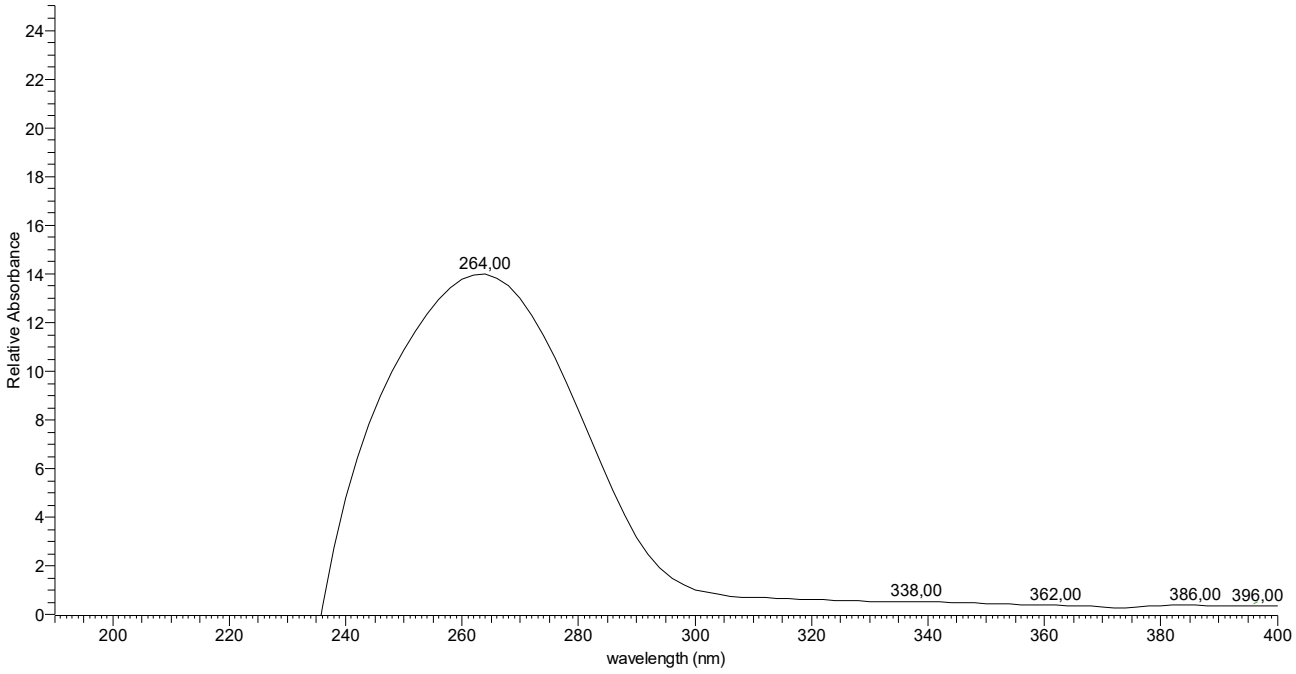
M-H 222,17 | $C_{14}H_{23}NO$ | Isobutylamide of deca-2E,4E,8Z-trienoic acid

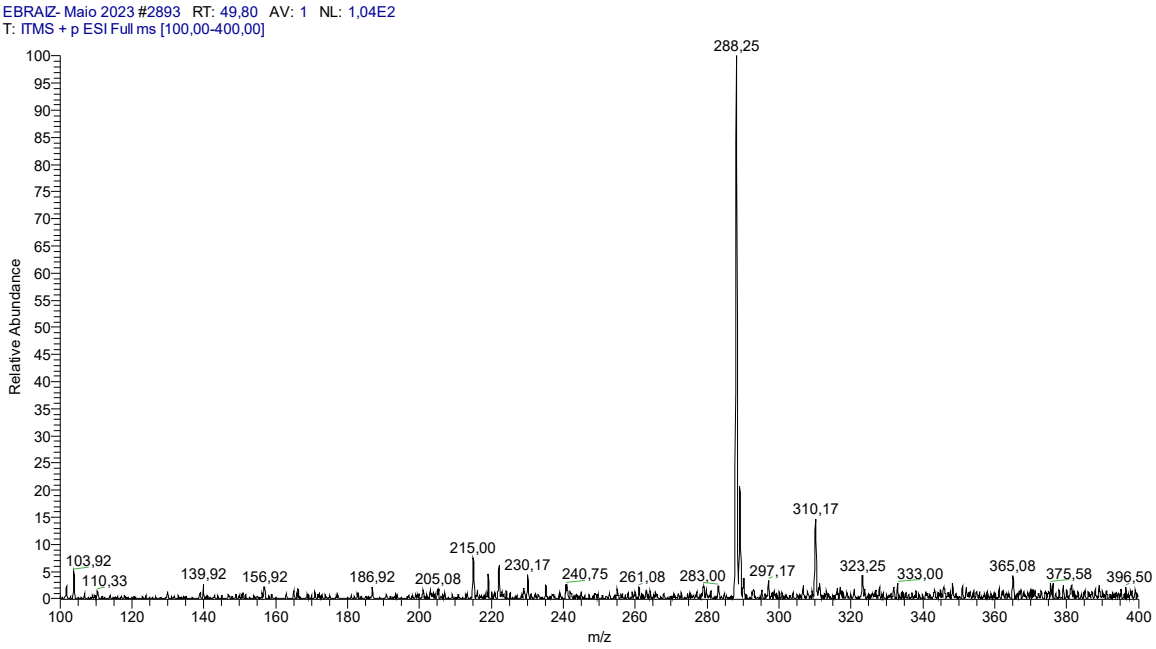


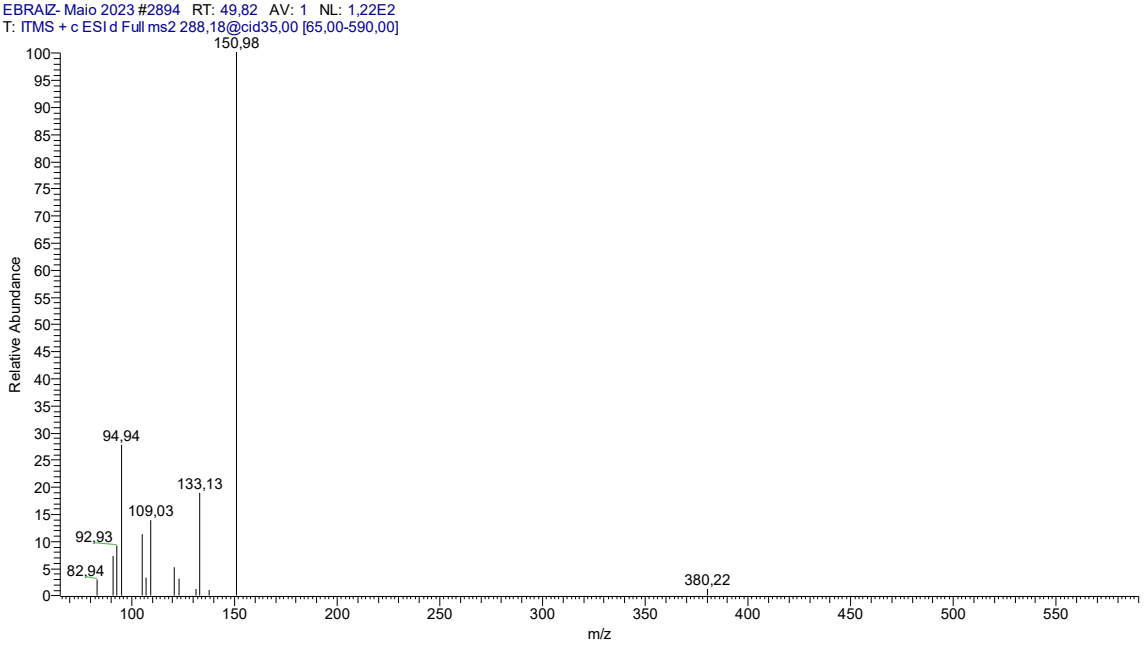
4. **RT 49,89 min**



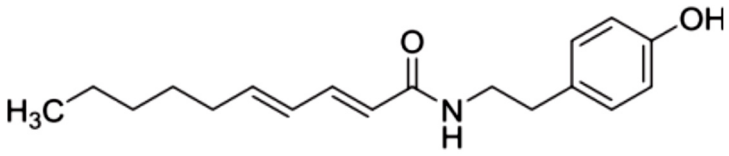
EBRAIZ- Maio 2023 #14940 RT: 49,80 AV: 1 NL: 1,71E5 microAU



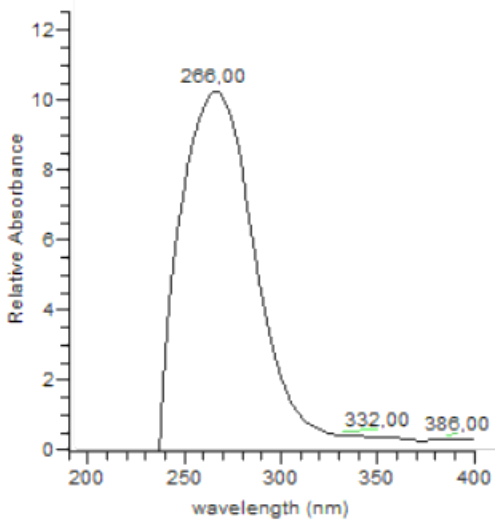




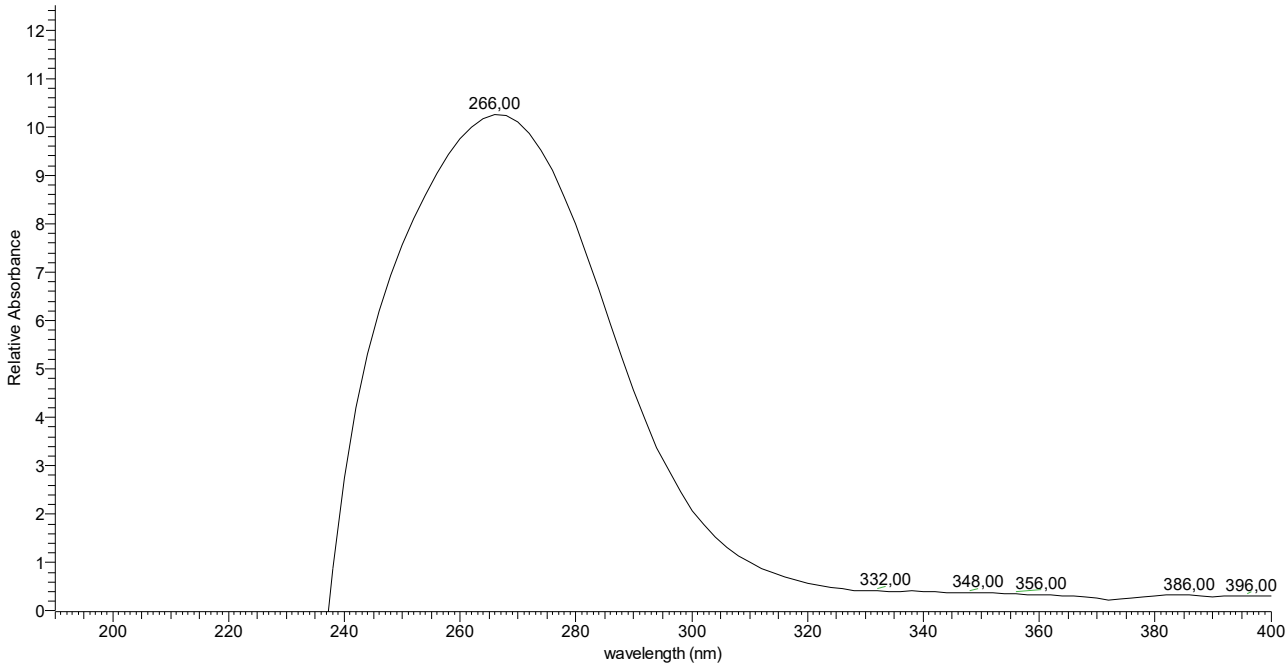
M-H 288,25 | $C_{18}H_{25}NO_2$ | Tyramide of deca-2E,4E-dienoic acid

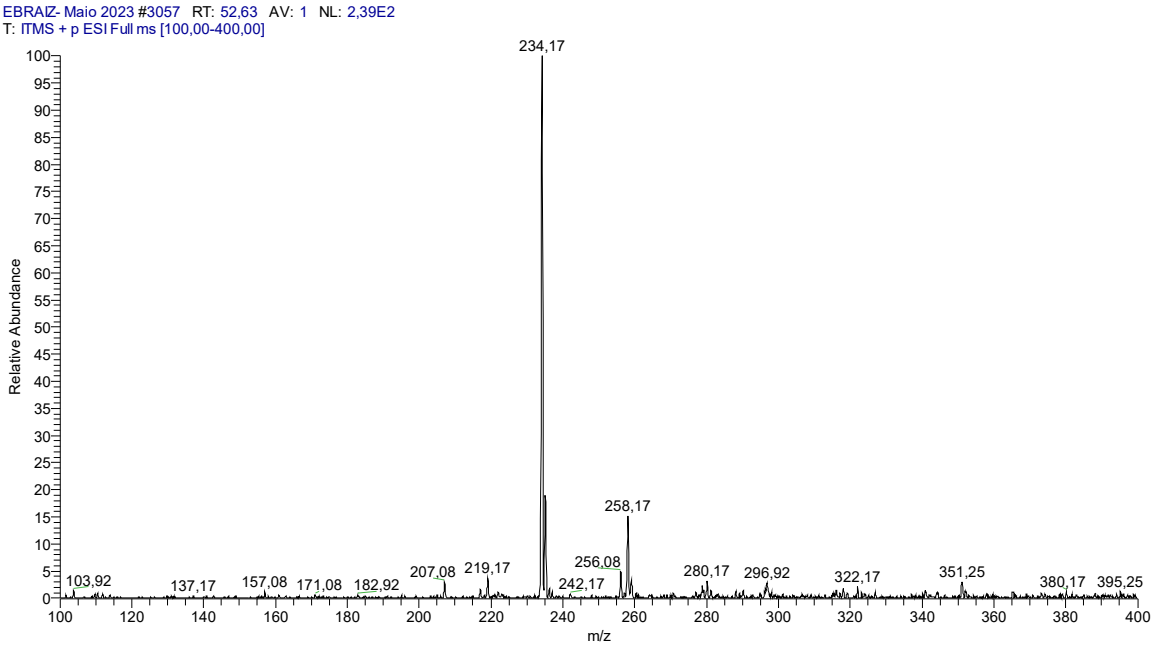


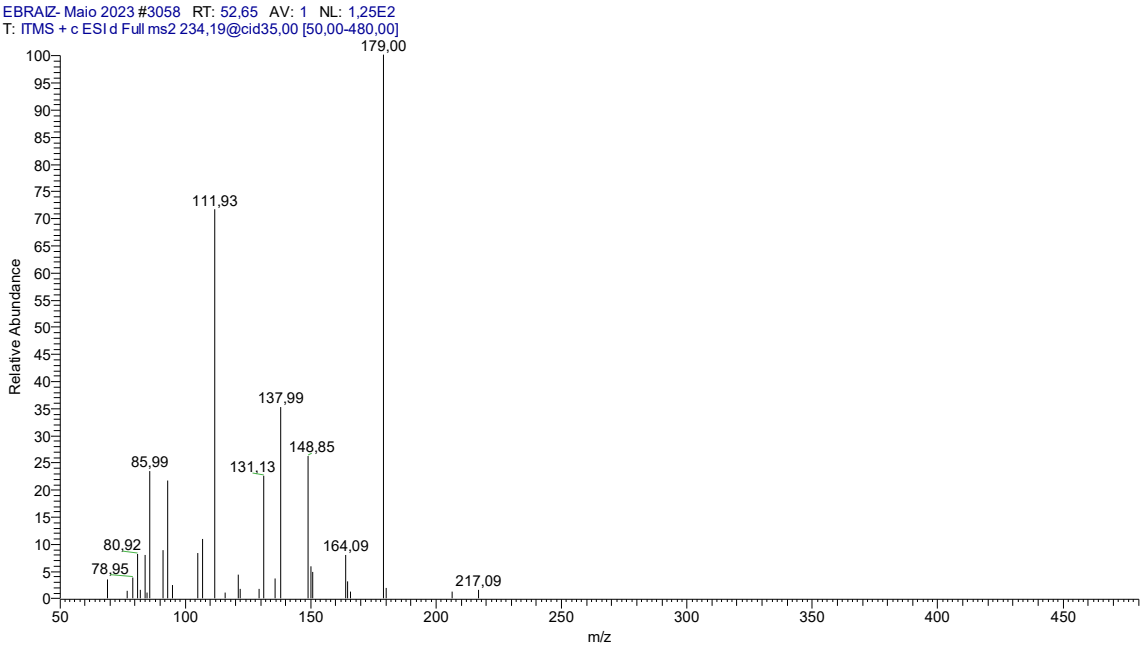
5. RT 52,73 min



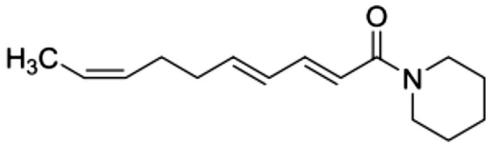
EBRAIZ- Maio 2023 #15795 RT: 52,65 AV: 1 NL: 1,87E5 microAU



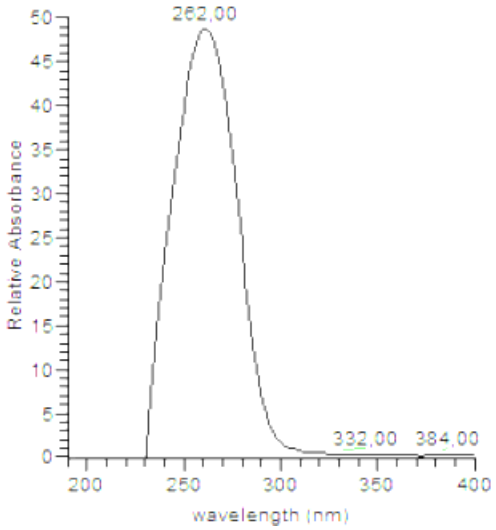




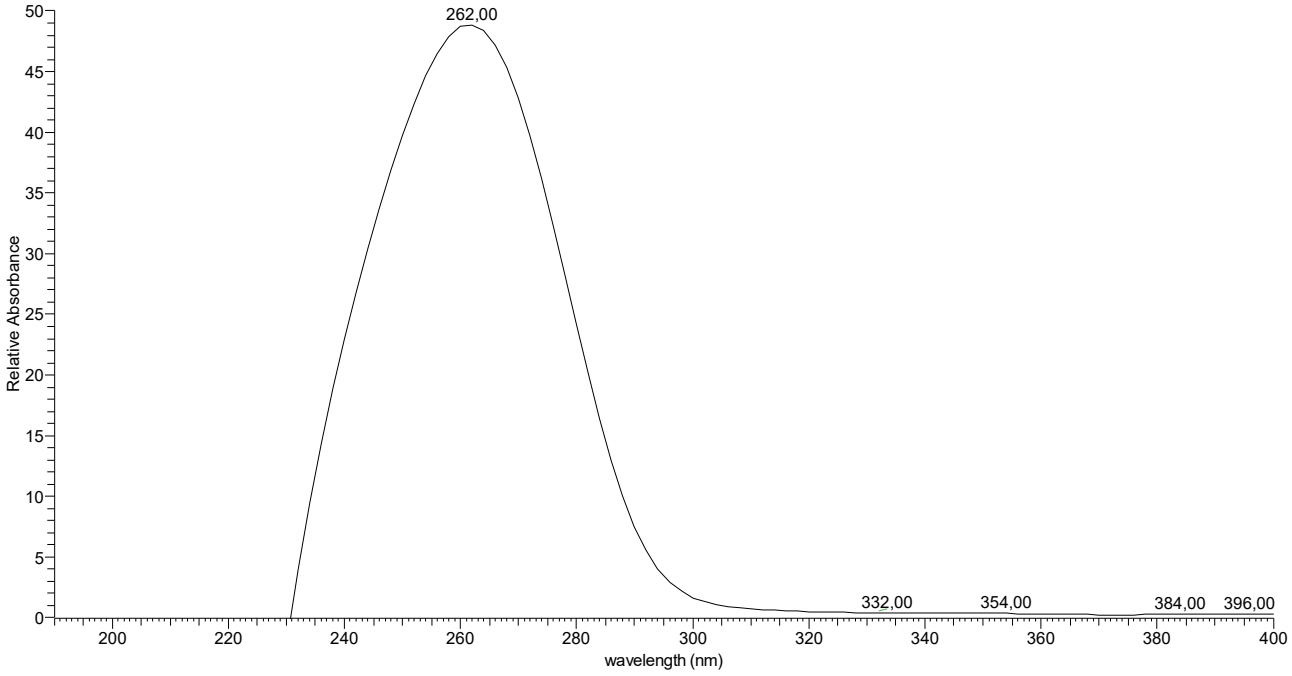
M-H 234,17 | $C_{15}H_{23}NO$ | Piperidamide of deca-2E,4E,8Z-trienoic acid

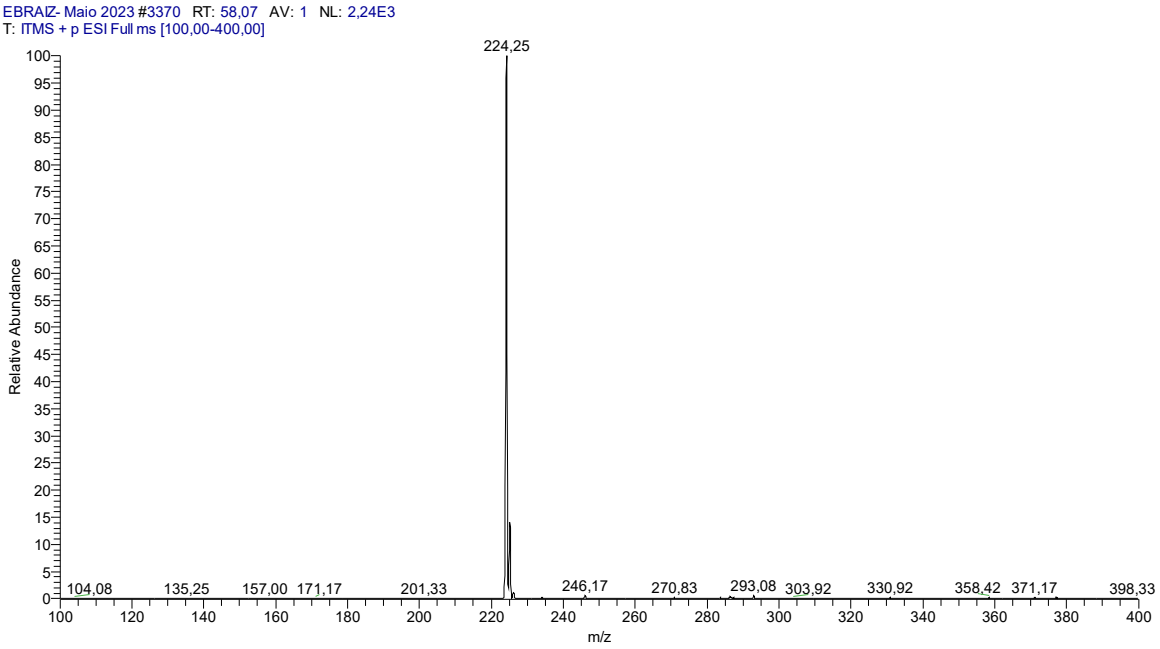


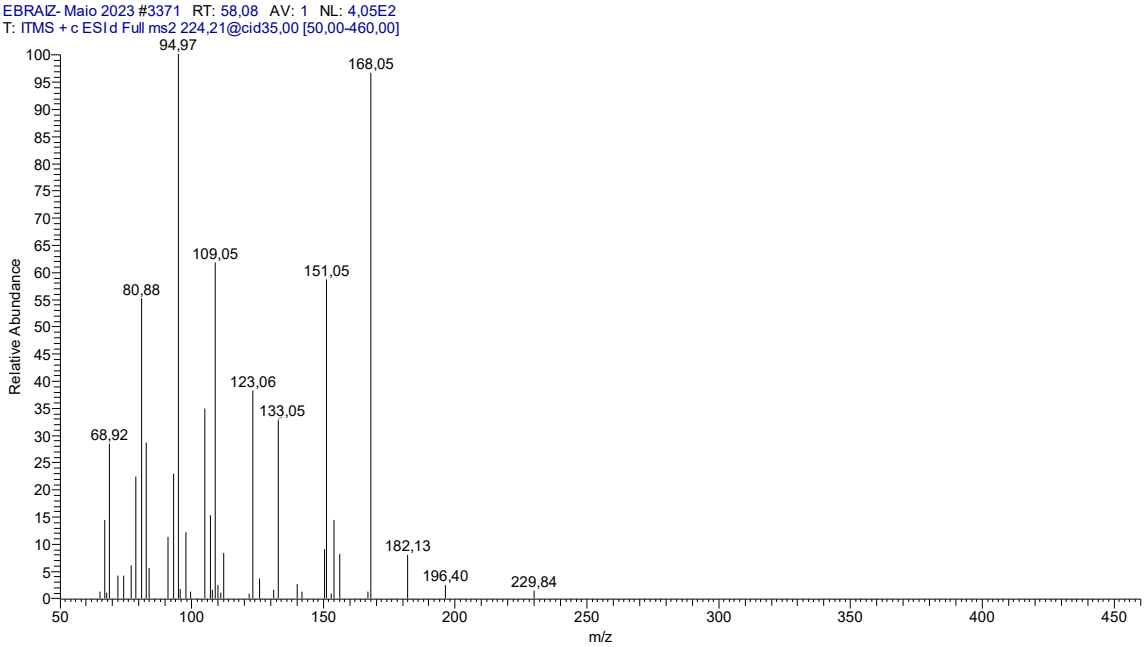
6. RT 58,05 min



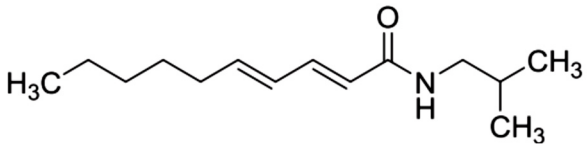
EBRAIZ- Maio 2023 #17421 RT: 58,07 AV: 1 NL: 2,05E5 microAU



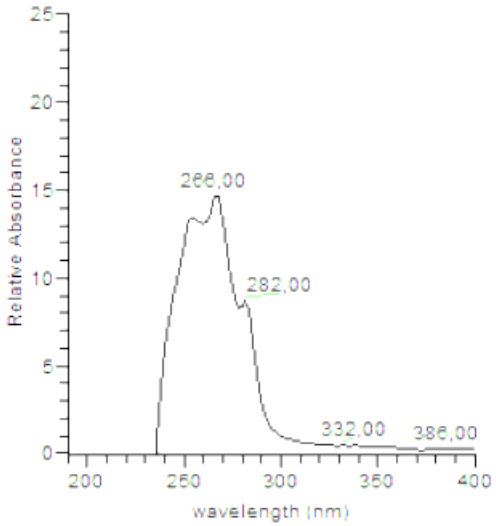




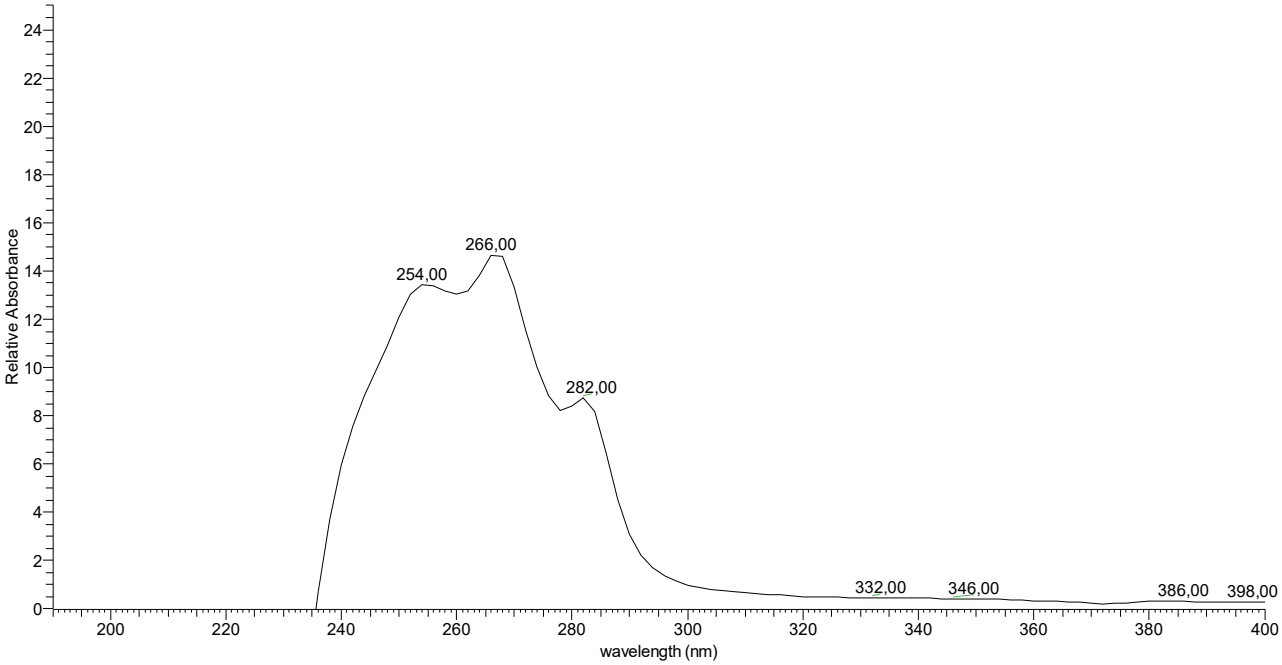
M-H 224,25 | $C_{14}H_{25}NO$ | Isobutylamide of deca-2E,4E-dienoic acid (pellitorine)

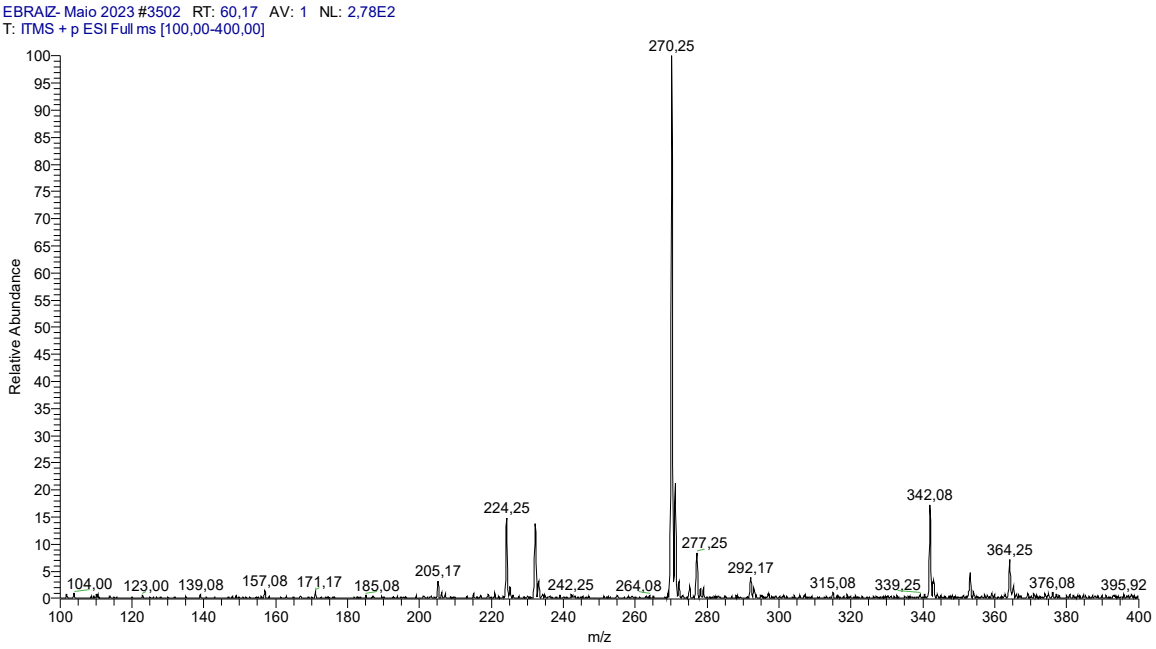


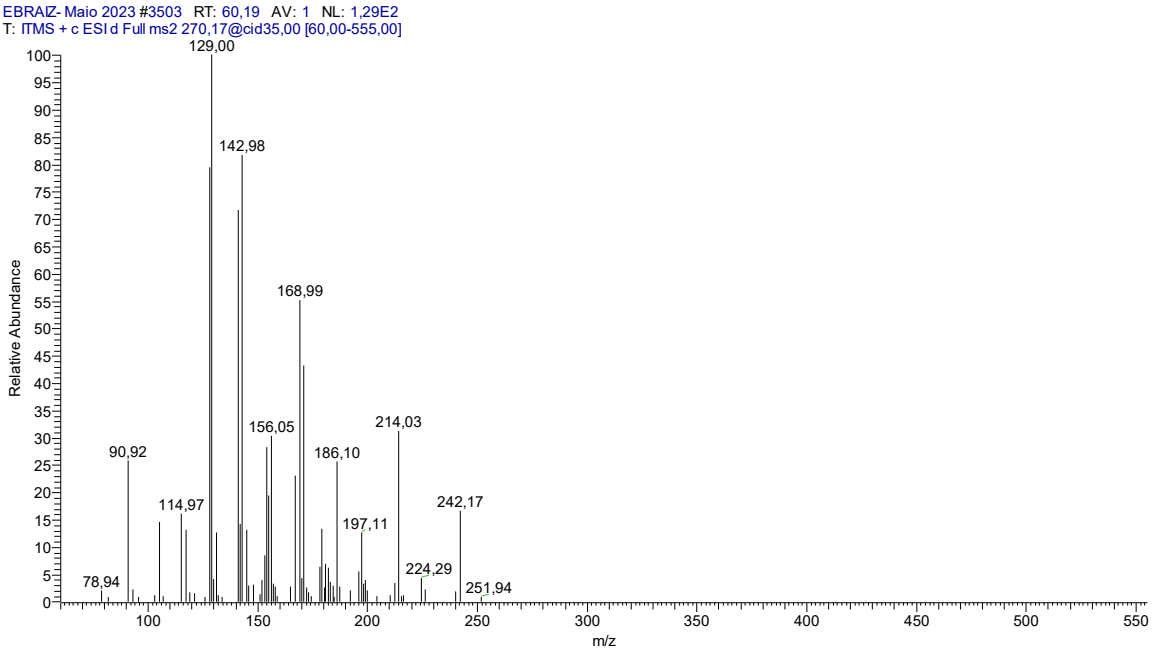
7. RT 60,24 min



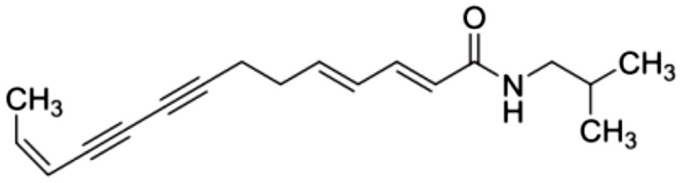
EBRAIZ- Maio 2023 #18051 RT: 60,17 AV: 1 NL: 1,98E5 microAU



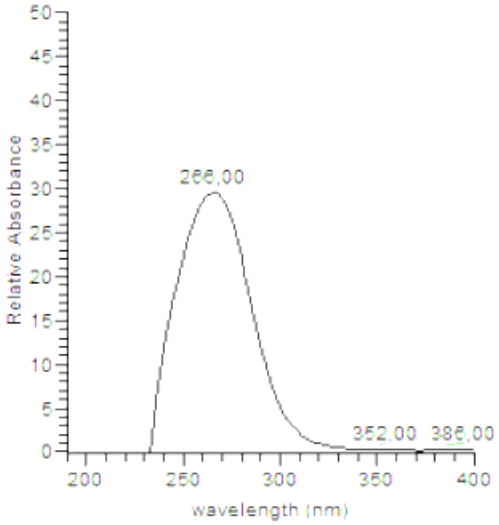




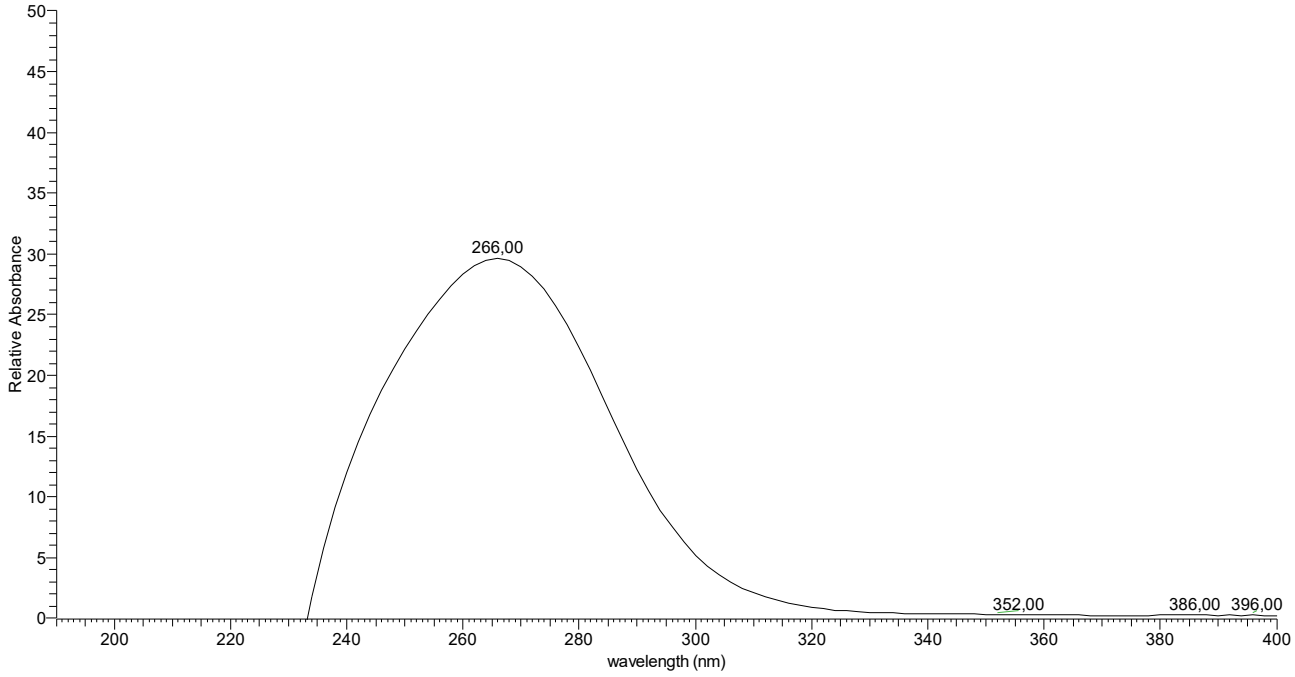
M-H 270,25 | $C_{18}H_{23}NO$ | Isobutylamide of tetradeca-2E,4E,12Z-trieno-8,10-diynoic acid

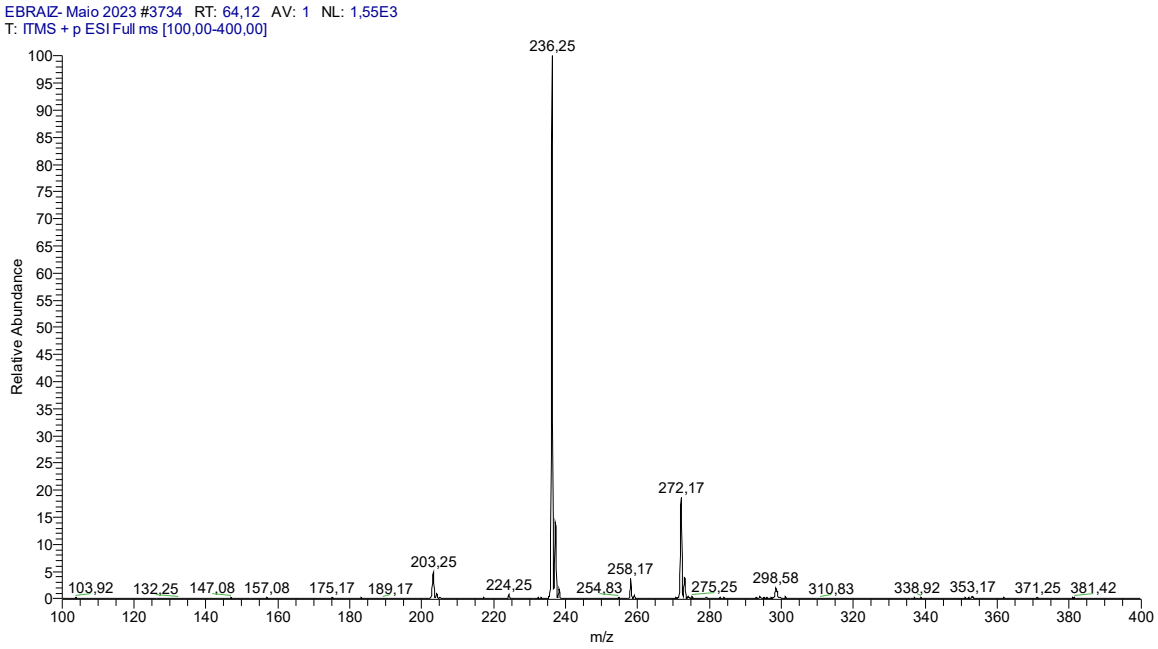


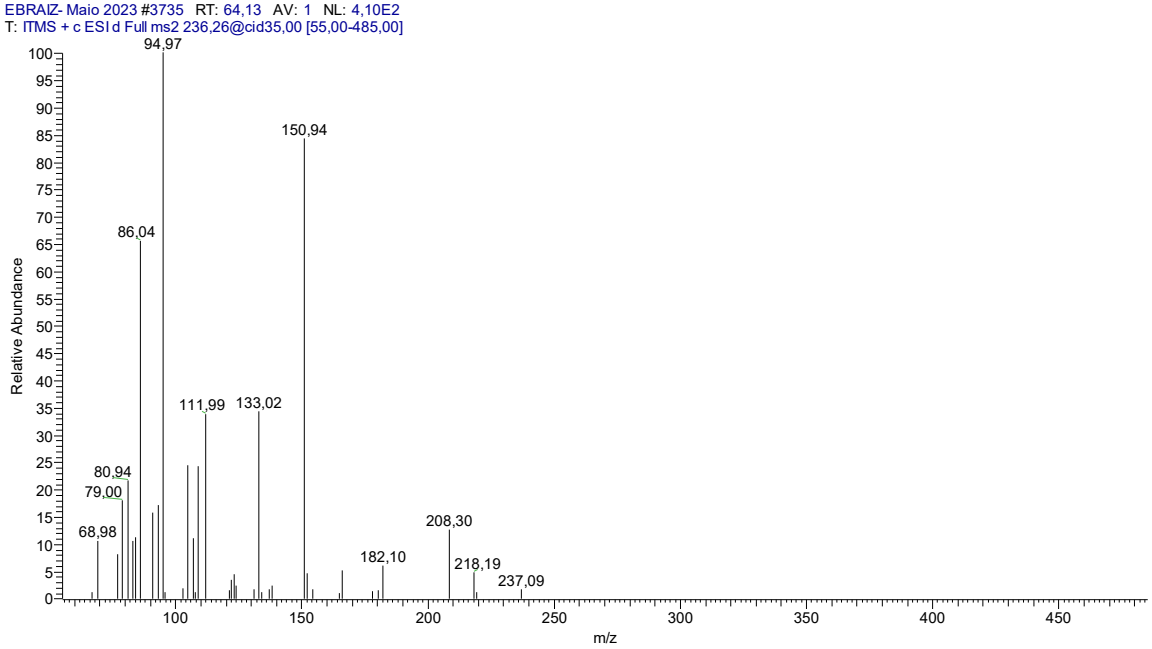
8. RT 64,14 min



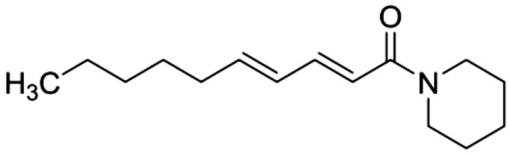
EBRAIZ- Maio 2023 #19239 RT: 64,13 AV: 1 NL: 2,28E5 microAU



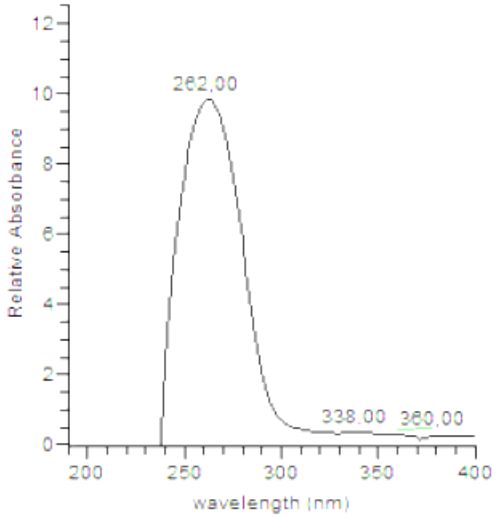




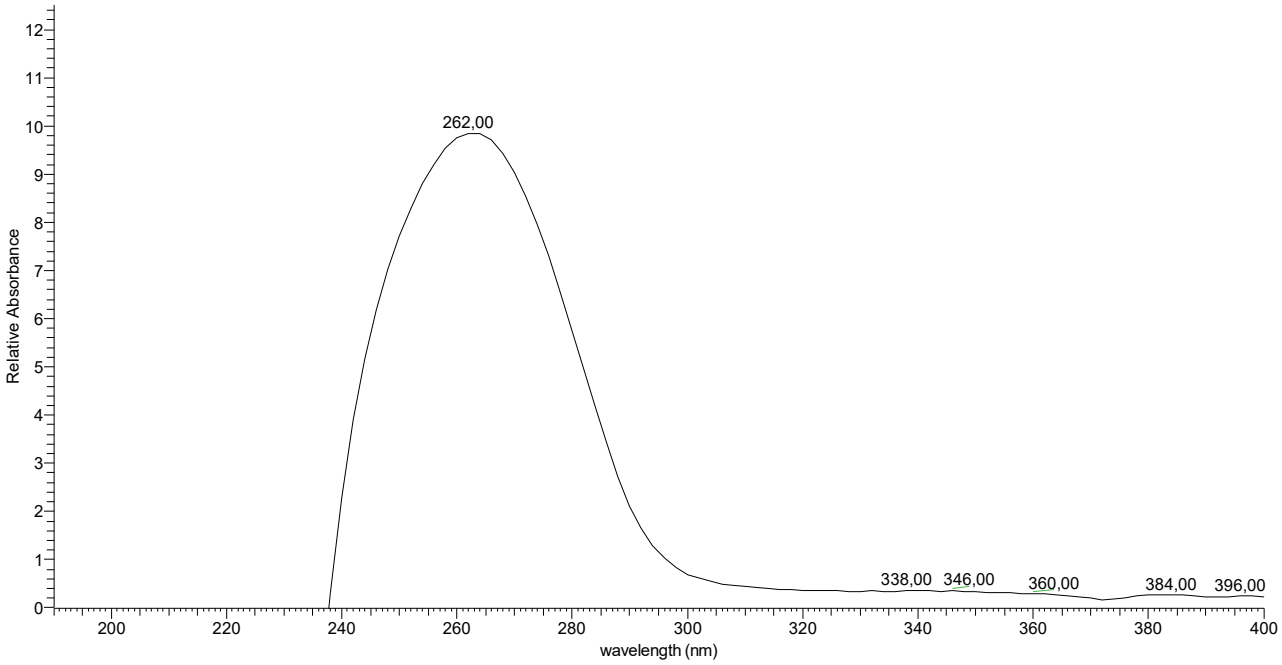
M-H 236,25 | $C_{15}H_{25}NO$ | Piperidamide of deca-2E,4E-dienoic acid



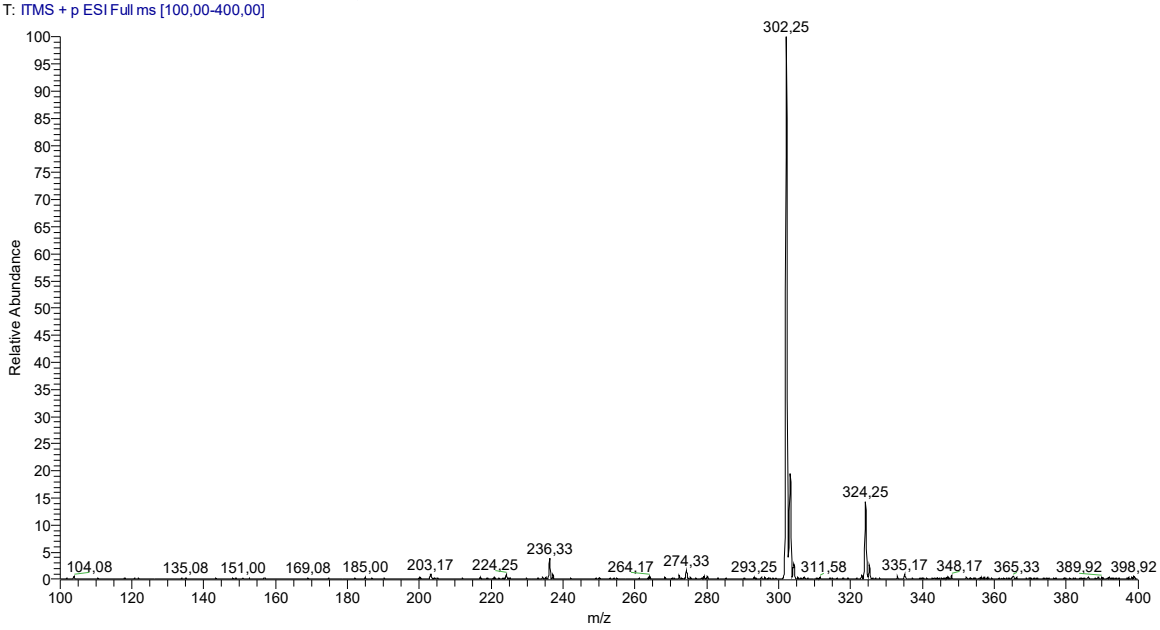
9. RT 66,28 min



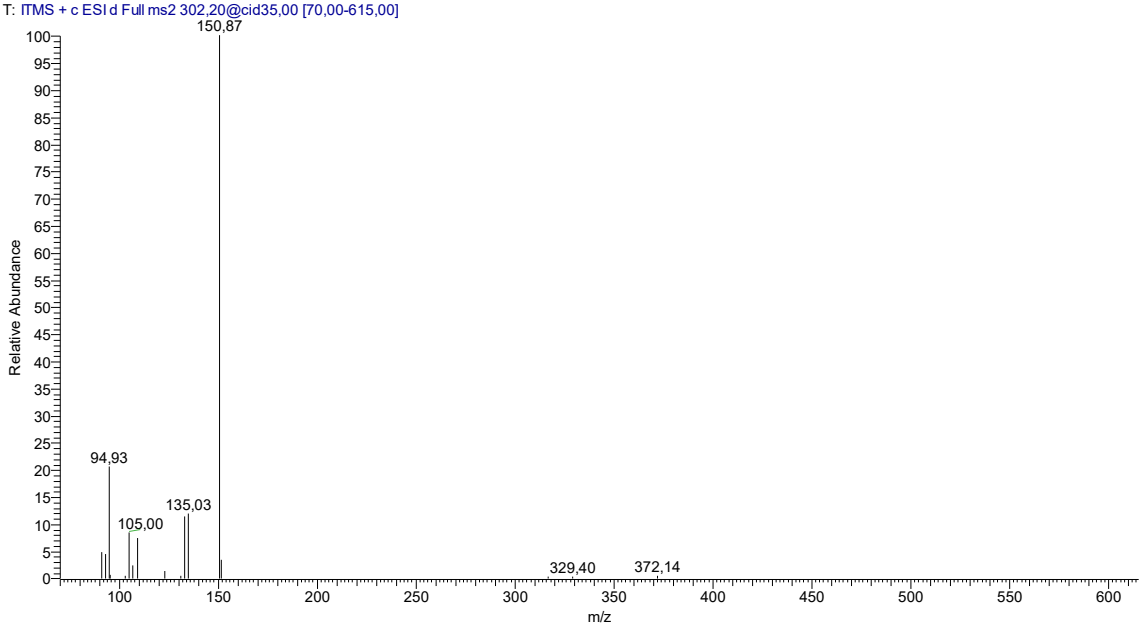
EBRAIZ- Maio 2023 #19896 RT: 66,32 AV: 1 NL: 2,37E5 microAU



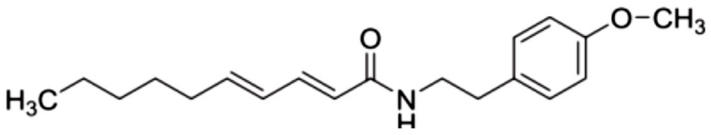
EBRAIZ- Maio 2023 #3872 RT: 66,32 AV: 1 NL: 6,01E2
T: ITMS + p ESI Full ms [100,00-400,00]



EBRAIZ- Maio 2023 #3873 RT: 66,34 AV: 1 NL: 7,43E2
T: ITMS + c ESI d Full ms2 302,20@cid35,00 [70,00-615,00]

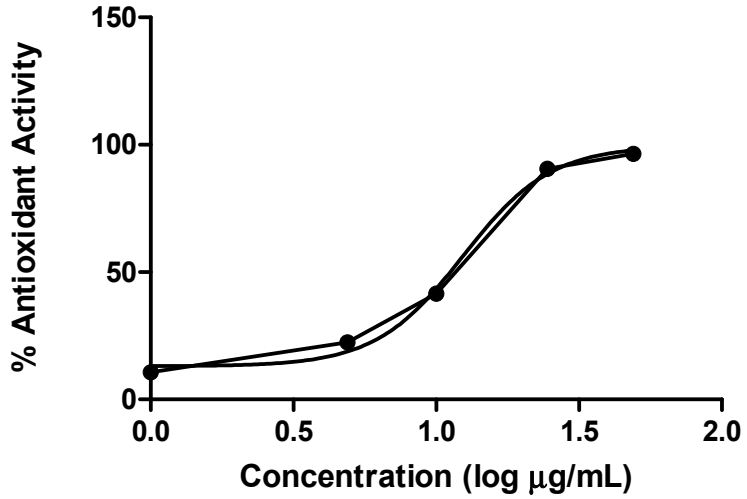


M-H 302,25 | $C_{19}H_{27}NO_2$ | 4-methoxyphenylethylamide of -deca-2E,4E-dienoic acid



Supplementary Material

Figure S2. Analytical curve of Quercetin (Positive Control).

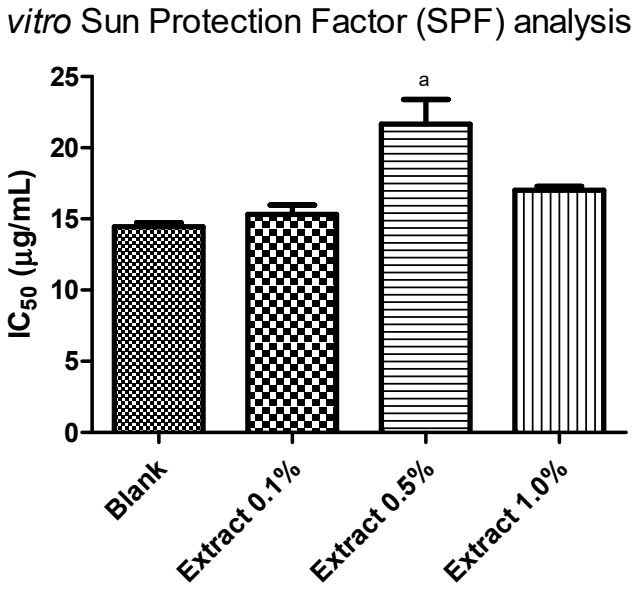


Concentration (μg/mL)	% AAO
1	10.71 ± 0.3
5	22.46 ± 0.5
10	41.59 ± 0.4
25	90.60 ± 0.8
50	96.40 ± 0.7

EC_{50}= 12.41 μg/mL

Supplementary Material

Figure S3. Statistical analysis of Sun Protection Factor (SPF), UVA/UVB Ratio and Critical Wavelength.

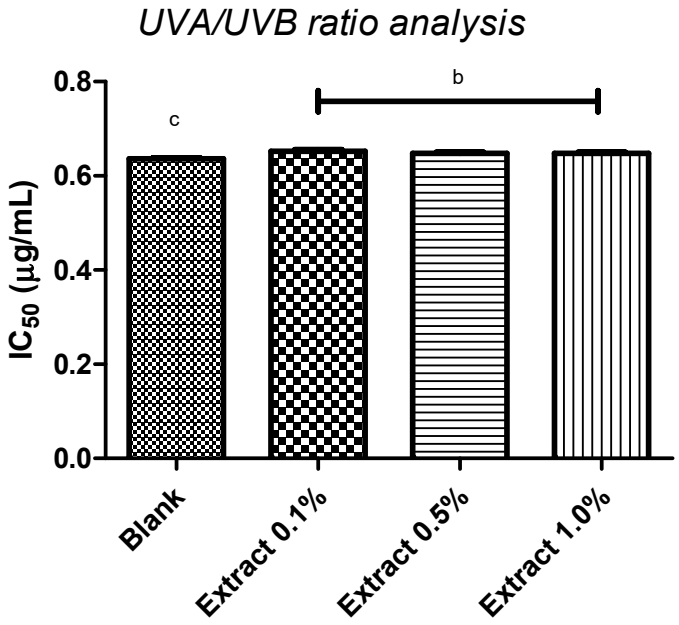


a Significant difference with p<0.05 (One-way ANOVA with Tukey`s Multiple Comparative Test).
Extract 0.5% presents statistical difference in relation to the other samples: Blank, Ext. 0.1% and Ext. 1%

Statistical analysis of Sun Protection Factor (SPF)

Table Analyzed	Data 1		
One-way analysis of variance			
P value	< 0.0001		
P value summary	***		
Are means signif. different? (P < 0.05)	Yes		
Number of groups	4		
F	11,72		
R squared	0,5235		
Bartlett's test for equal variances			
Bartlett's statistic (corrected)	32,16		
P value	< 0.0001		
P value summary	***		
Do the variances differ signif. (P < 0.05)	Yes		
ANOVA Table	SS	df	MS
Treatment (between columns)	279,3	3	93,11
Residual (within columns)	254,2	32	7,944
Total	533,6	35	
Tukey's Multiple Comparison Test	Mean Diff.	q	Significant? P < 0.05?
Blank vs Extract 0.1%	-0,8889	0,9461	No
Blank vs Extract 0.5%	-7,222	7,687	Yes

Blank vs Extract 1.0%	-2,556	2,720	No
Extract 0.1% vs Extract 0.5%	-6,333	6,741	Yes
Extract 0.1% vs Extract 1.0%	-1,667	1,774	No
Extract 0.5% vs Extract 1.0%	4,667	4,967	Yes



c Significant difference with p<0.05 (One-way ANOVA with Tukey`s Multiple Comparative Test).
Blank presents statistical difference in relation to the other samples: Ext. 0.1%, Ext. 0.5% and Ext. 1%

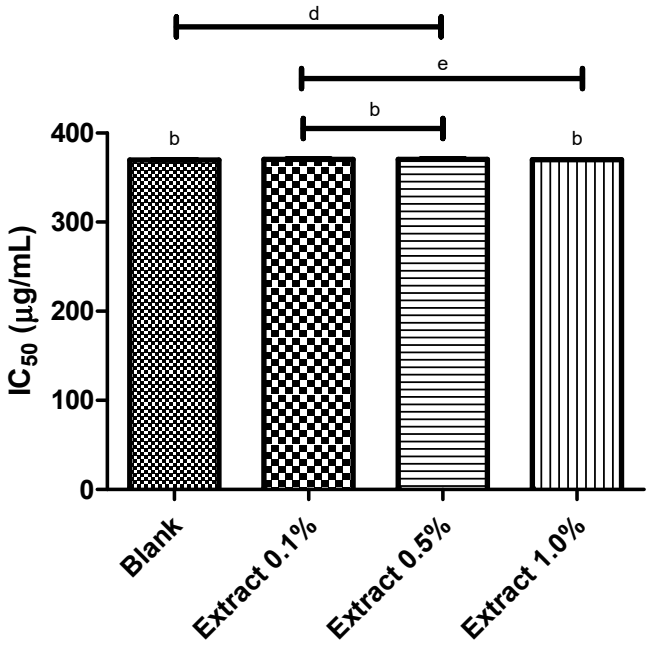
b No significant difference with p>0.05 (One-way ANOVA with Tukey`s Multiple Comparative Test).

Statistical analysis of UVA/UVB ratio

Table Analyzed	Data 1		
One-way analysis of variance			
P value	0,0020		
P value summary	**		
Are means signif. different? (P < 0.05)	Yes		
Number of groups	4		
F	6,136		
R squared	0,3652		
Bartlett's test for equal variances			
Bartlett's statistic (corrected)	3,223		
P value	0,3585		
P value summary	ns		
Do the variances differ signif. (P < 0.05)	No		
ANOVA Table	SS	df	MS
Treatment (between columns)	0,001189	3	0,0003963
Residual (within columns)	0,002067	32	0,00006458
Total	0,003256	35	
Tukey's Multiple Comparison Test	Mean Diff.	q	Significant? P < 0.05?
Blank vs Extract 0.1%	-0,01556	5,807	Yes

Blank vs Extract 0.5%	-0,01111	4,148	Yes
Blank vs Extract 1.0%	-0,01111	4,148	Yes
Extract 0.1% vs Extract 0.5%	0,004444	1,659	No
Extract 0.1% vs Extract 1.0%	0,004444	1,659	No
Extract 0.5% vs Extract 1.0%	0,0000	0,0000	No

Critical wavelength (λ) analysis



d Significant difference with p<0.05 (One-way ANOVA with Tukey`s Multiple Comparative Test).
Blank presents statistical difference in relation to the other samples: Ext. 0.1% and Ext. 0.5%.

b No significant difference with p>0.05 (One-way ANOVA with Tukey`s Multiple Comparative Test)

e Significant difference with p<0.05 (One-way ANOVA with Tukey`s Multiple Comparative Test).
Ext. 1% presents statistical difference in relation to the Ext. 01. and 0.5%

Statistical analysis of critical wavelength (λc)

Table Analyzed	Data 1		
One-way analysis of variance			
P value	0,0003		
P value summary	***		
Are means signif. different? (P < 0.05)	Yes		
Number of groups	4		
F	8,579		
R squared	0,4458		
Bartlett's test for equal variances			
Bartlett's statistic (corrected)			
P value			
P value summary	ns		
Do the variances differ signif. (P < 0.05)	No		
ANOVA Table	SS	df	MS
Treatment (between columns)	4,111	3	1,370
Residual (within columns)	5,111	32	0,1597
Total	9,222	35	
Tukey's Multiple Comparison Test	Mean Diff.	q	Significant? P < 0.05?
Blank vs Extract 0.1%	-0,7778	5,838	Yes
Blank vs Extract 0.5%	-0,6667	5,004	Yes

Blank vs Extract 1.0%	-0,1111	0,8341	No
Extract 0.1% vs Extract 0.5%	0,1111	0,8341	No
Extract 0.1% vs Extract 1.0%	0,6667	5,004	Yes
Extract 0.5% vs Extract 1.0%	0,5555	4,170	Yes