

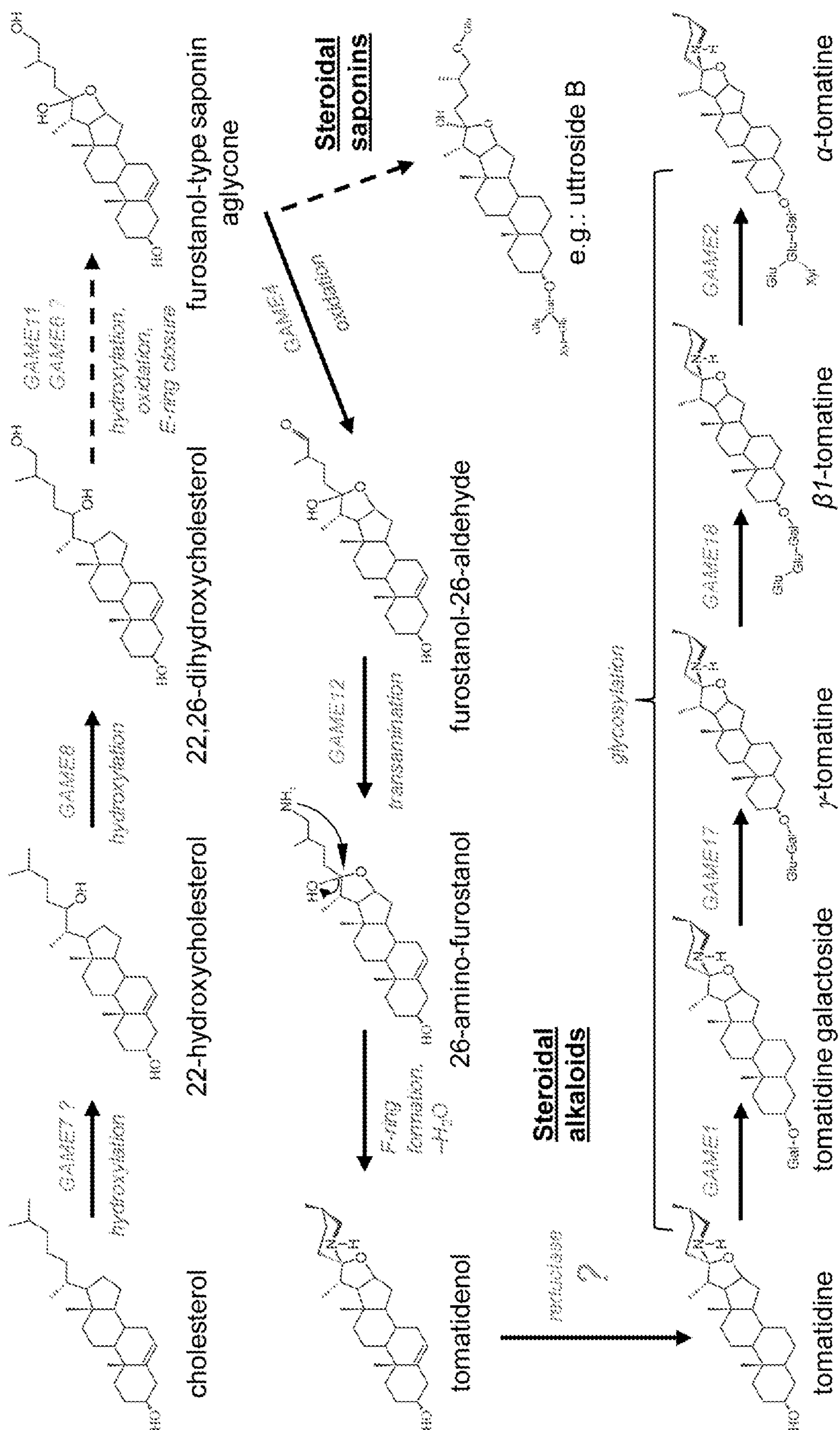


FIGURE 1

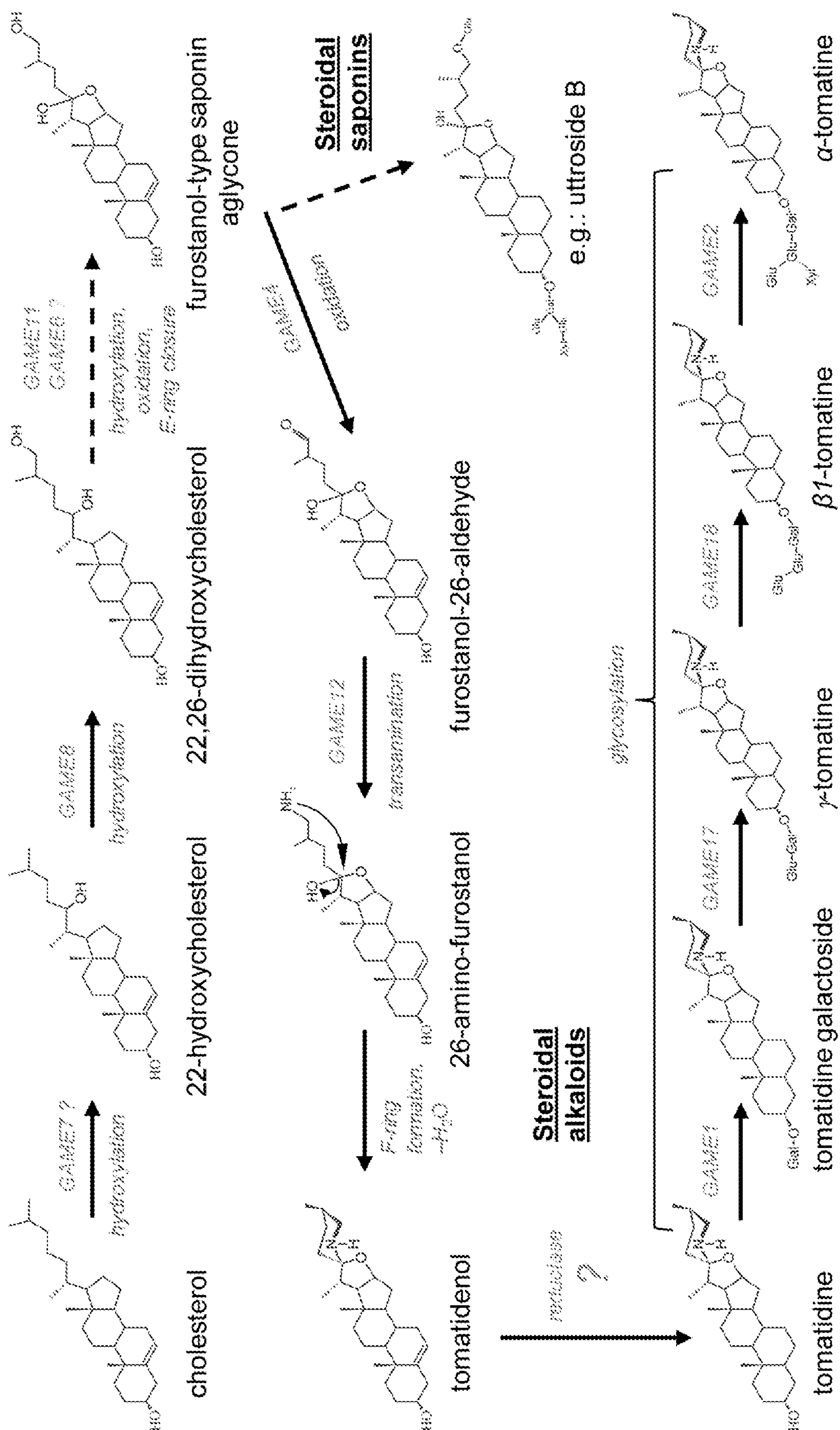


FIGURE 1

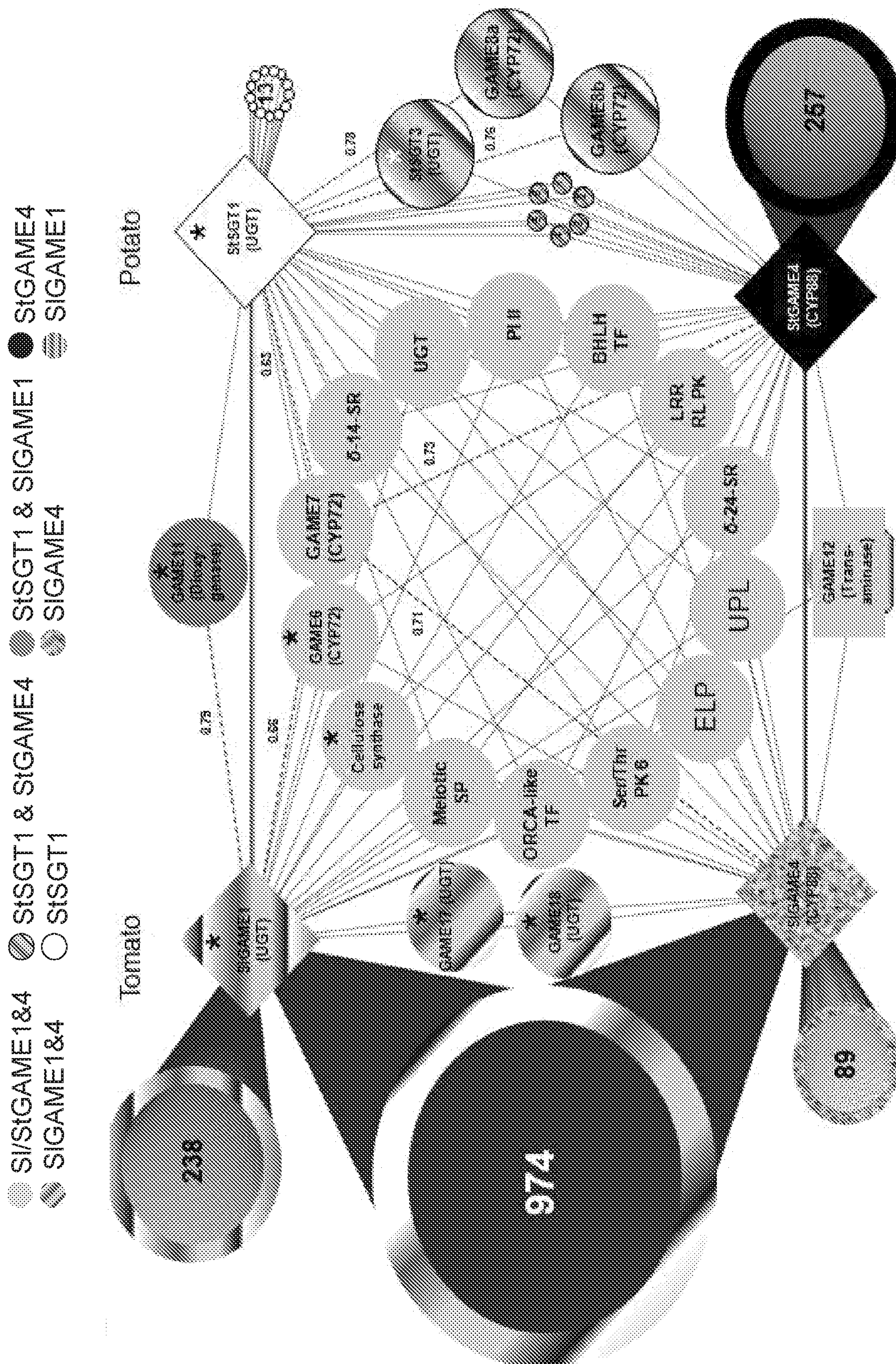


FIGURE 2

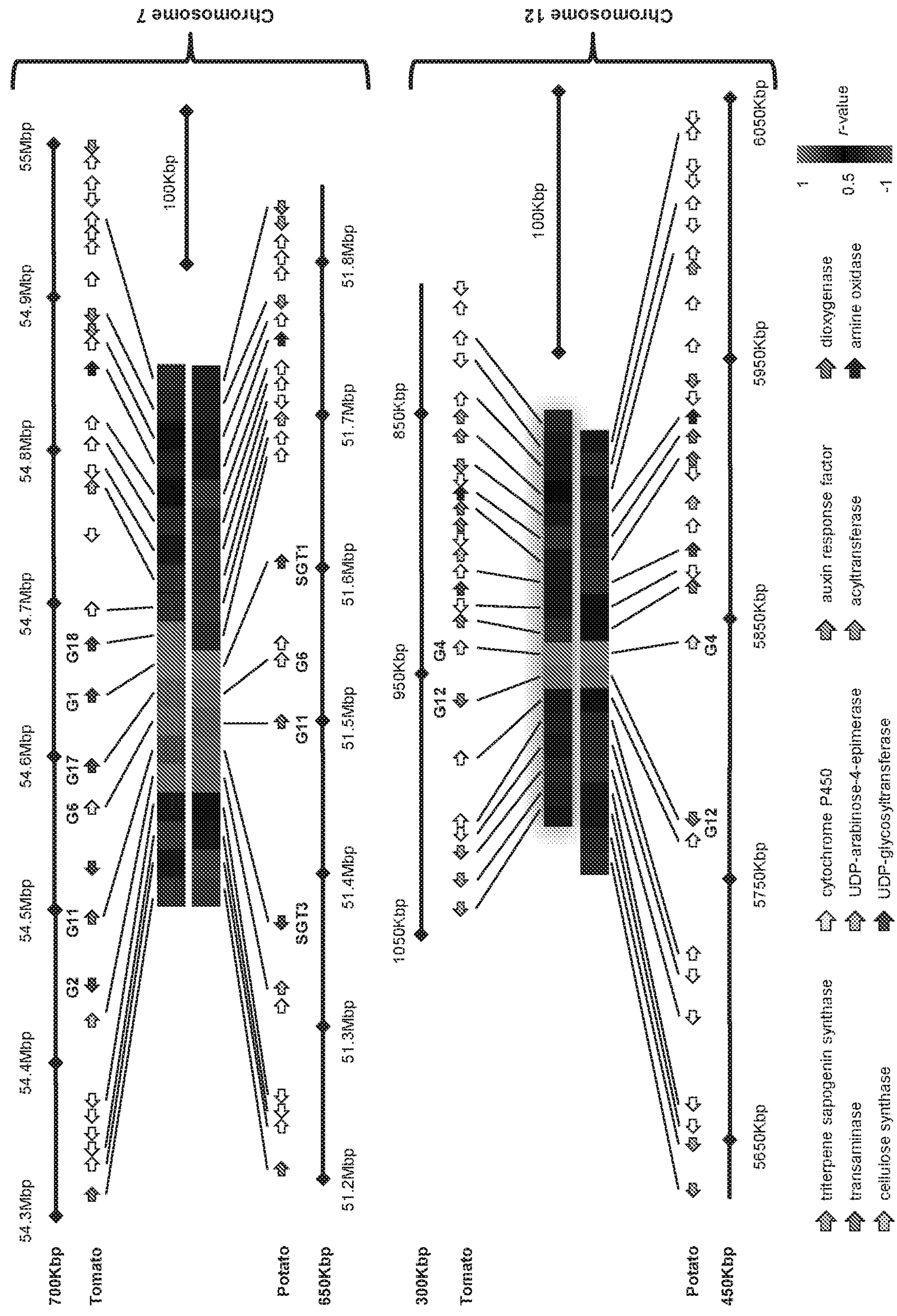


FIGURE 3

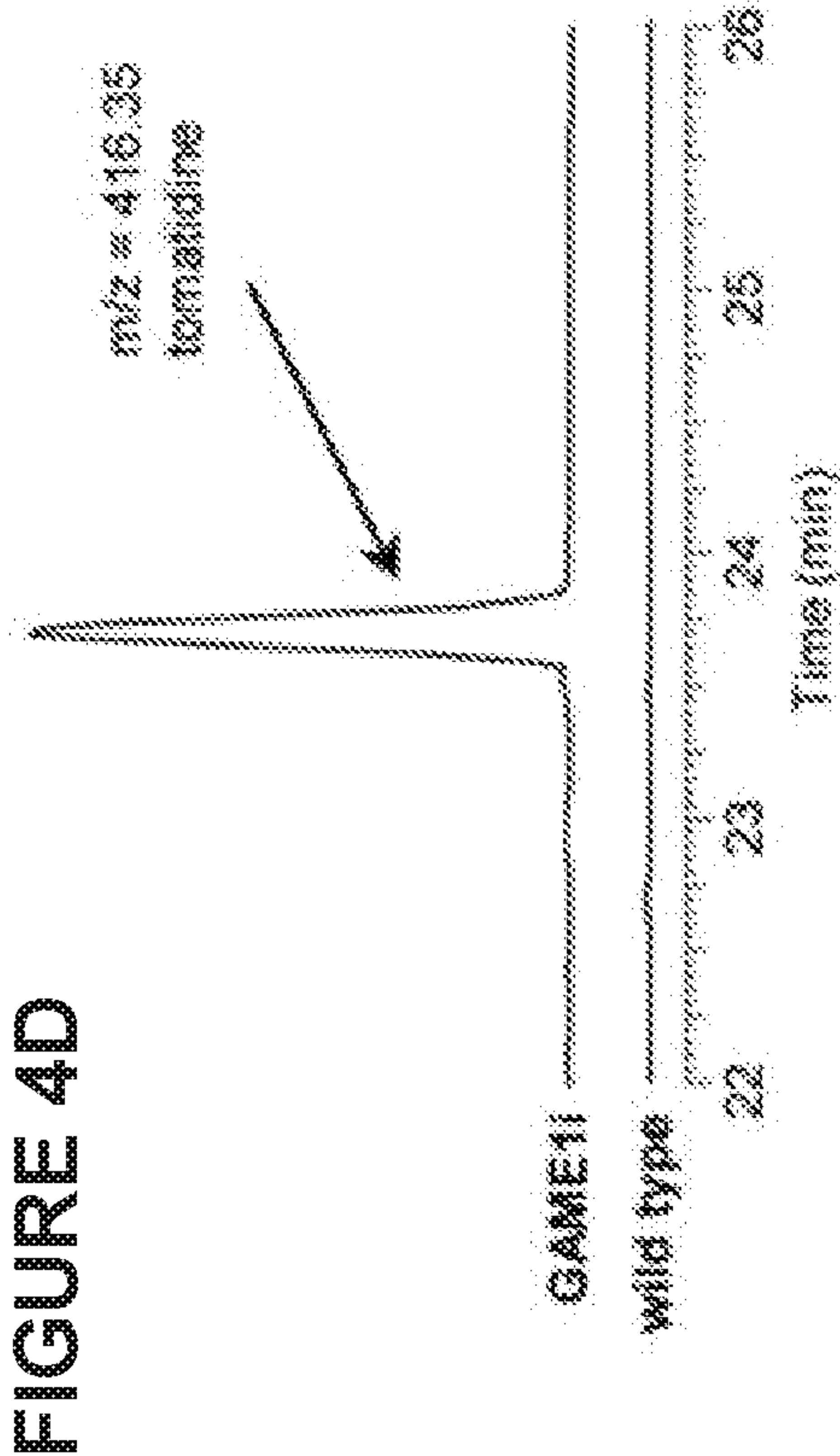
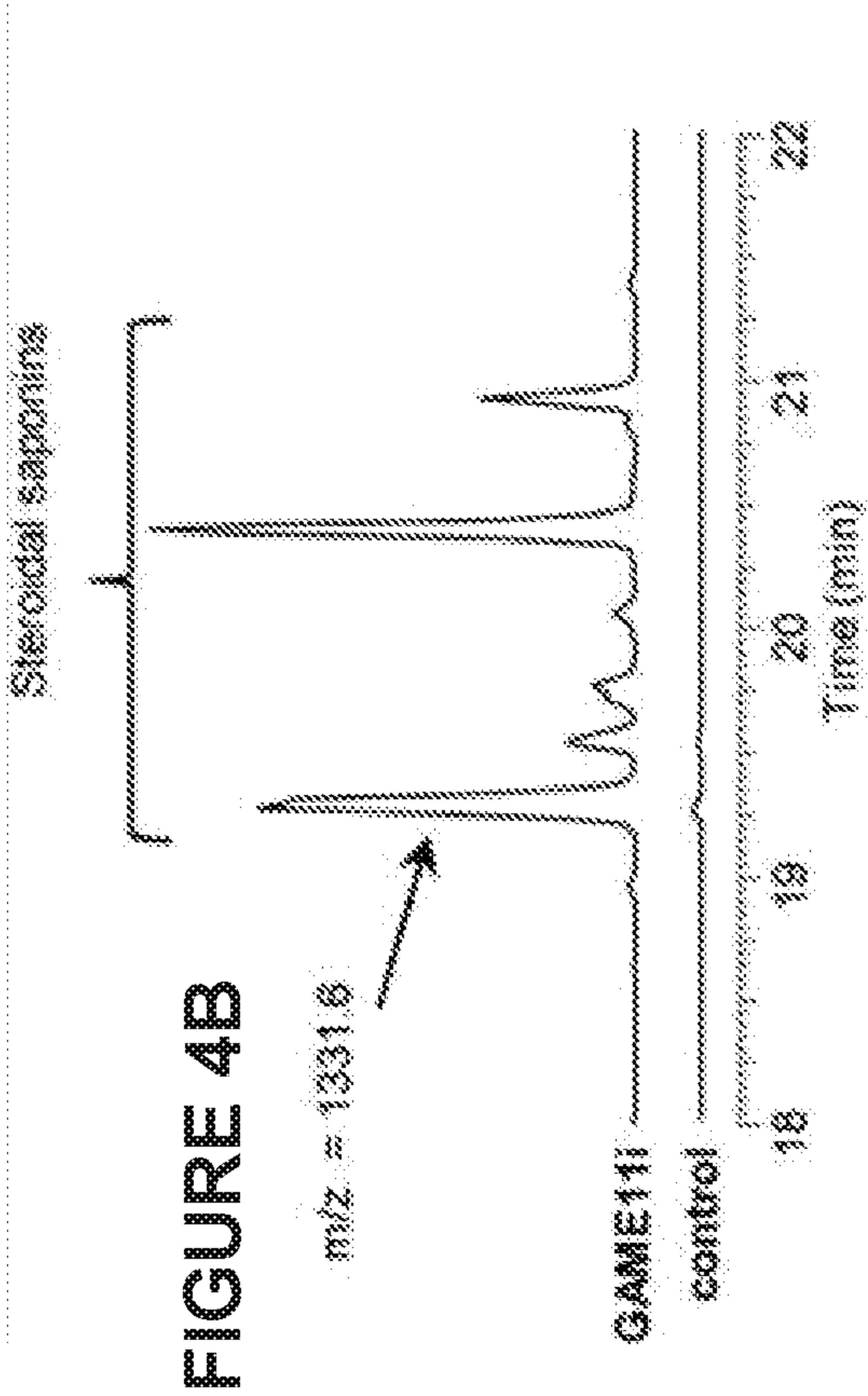


FIGURE 4E

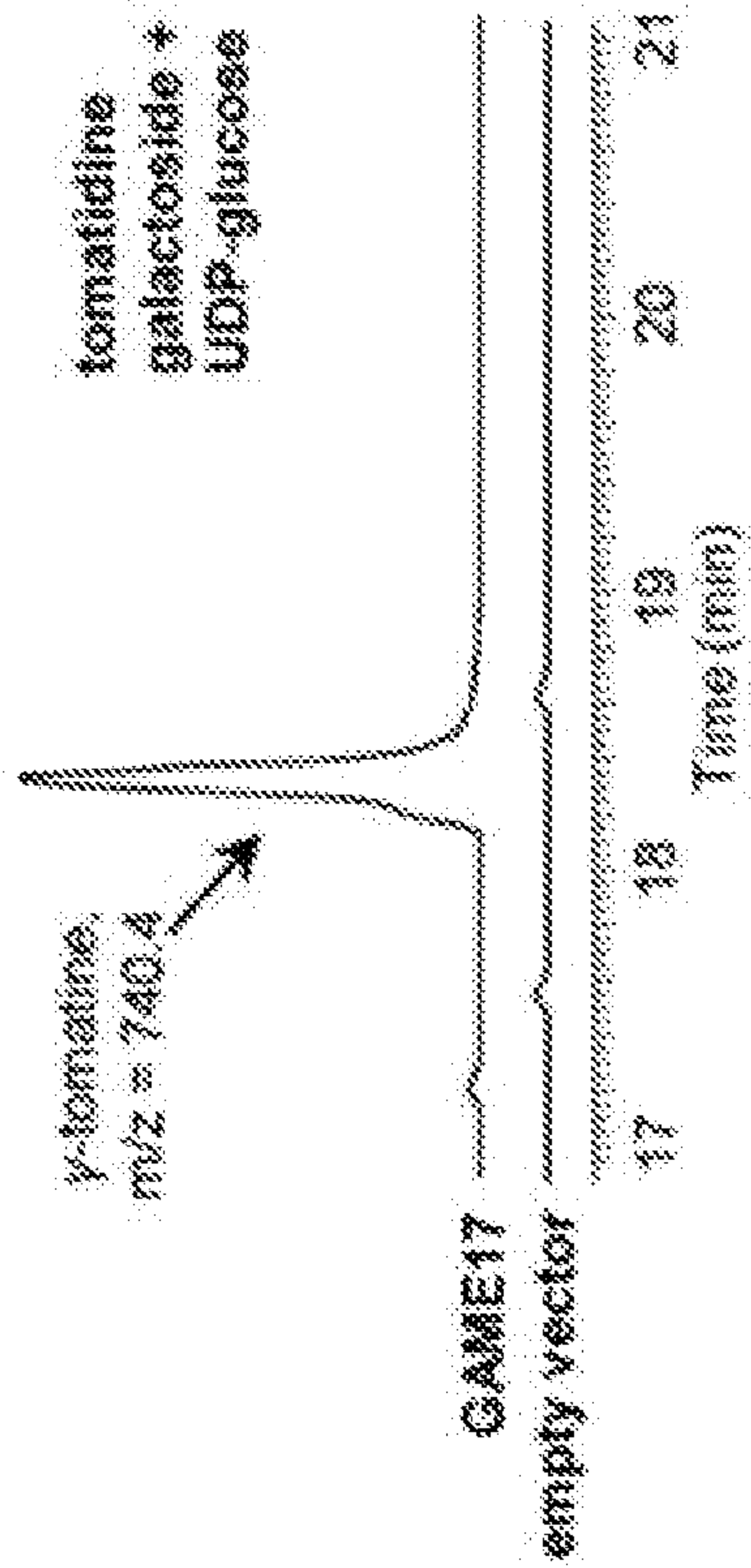


FIGURE 4F

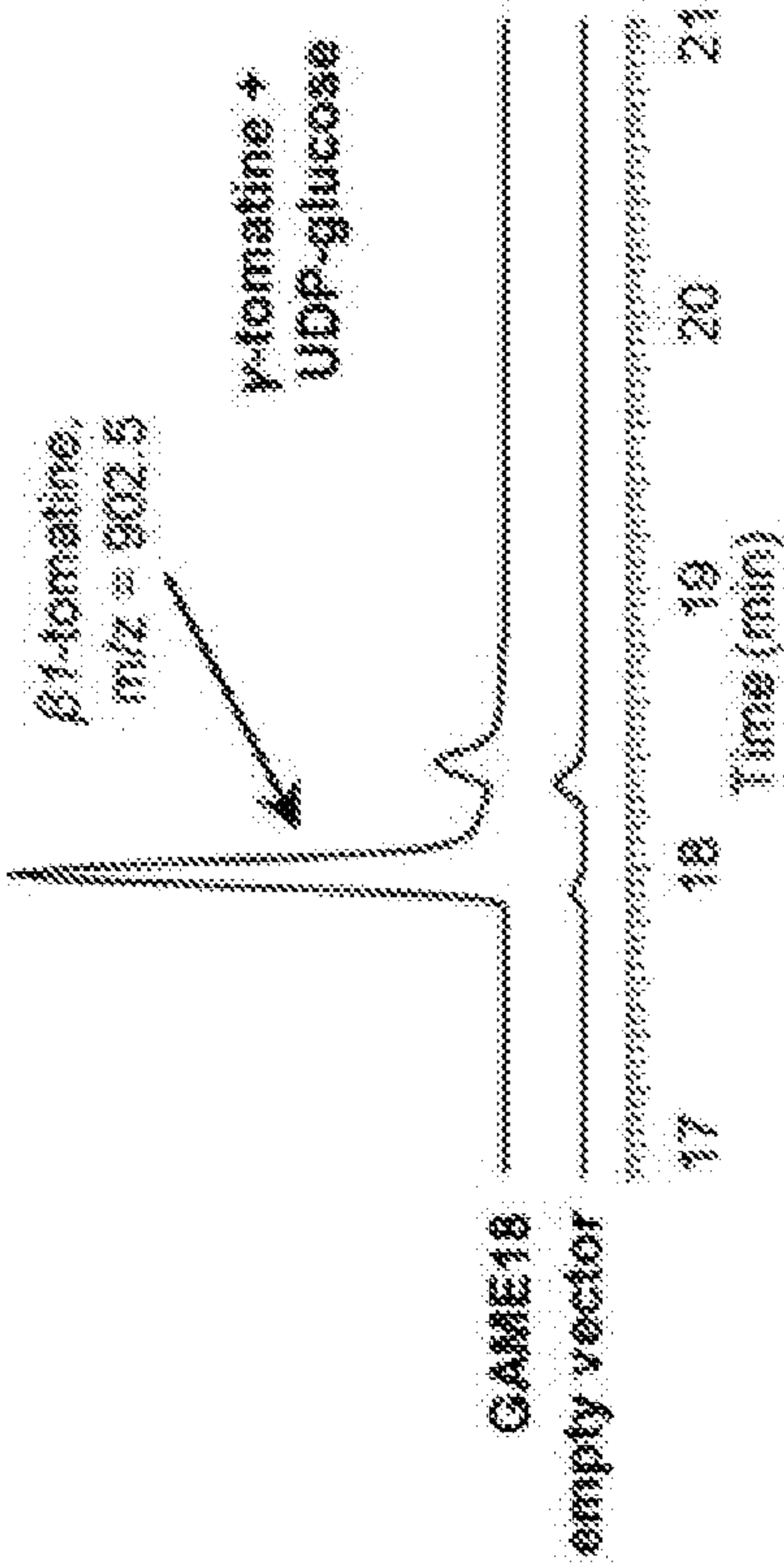


FIGURE 4G

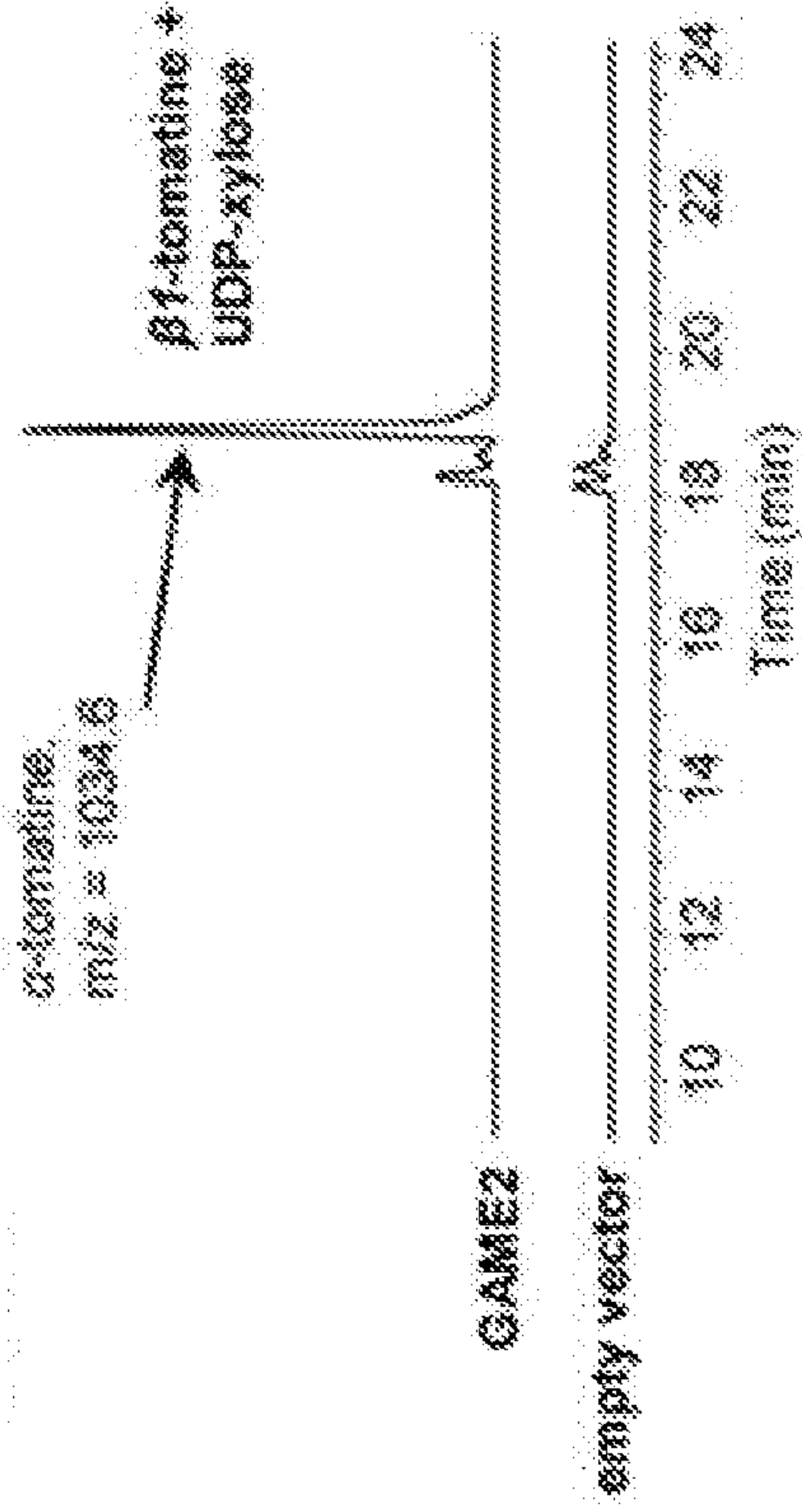
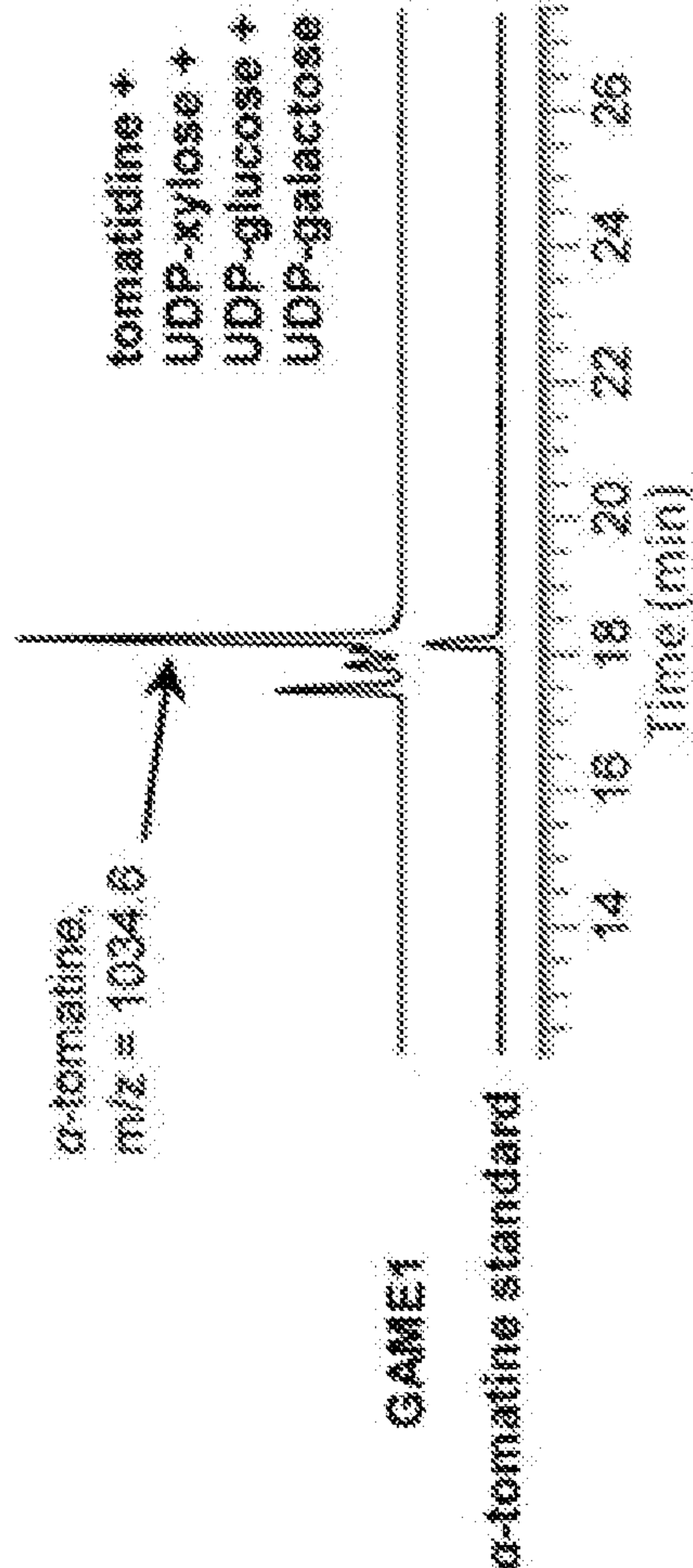


FIGURE 4H



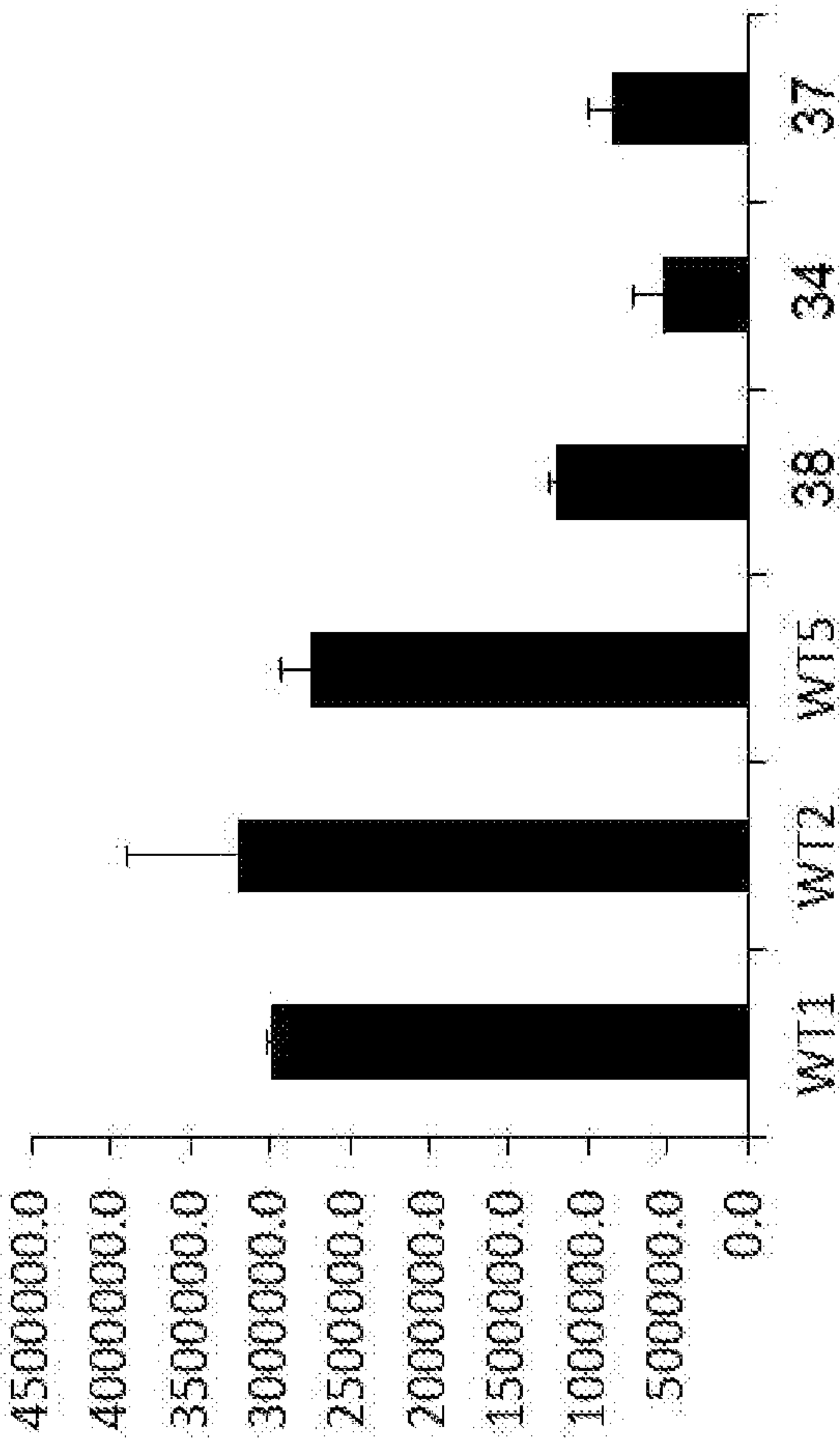


FIGURE 5B

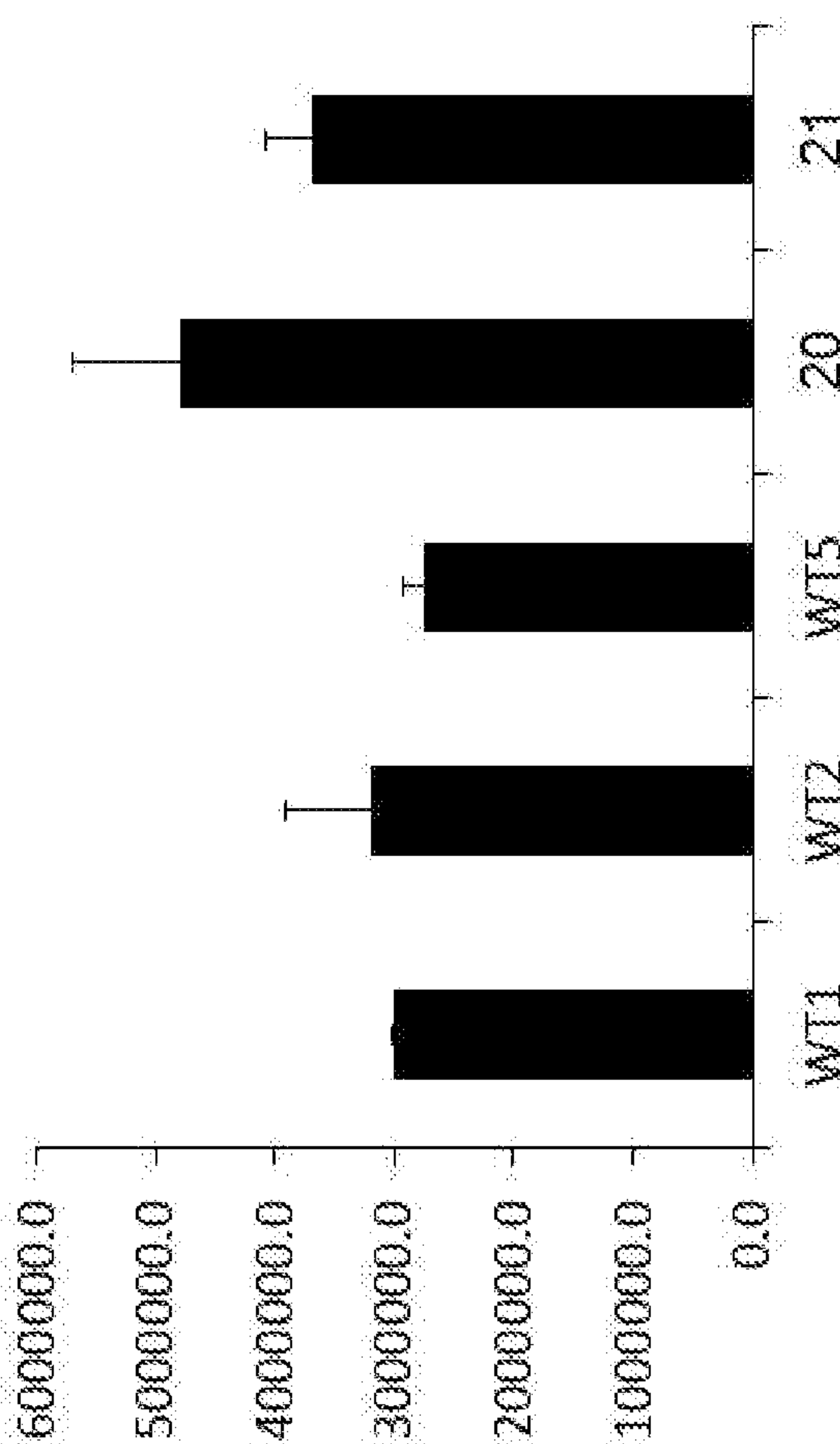


FIGURE 5D

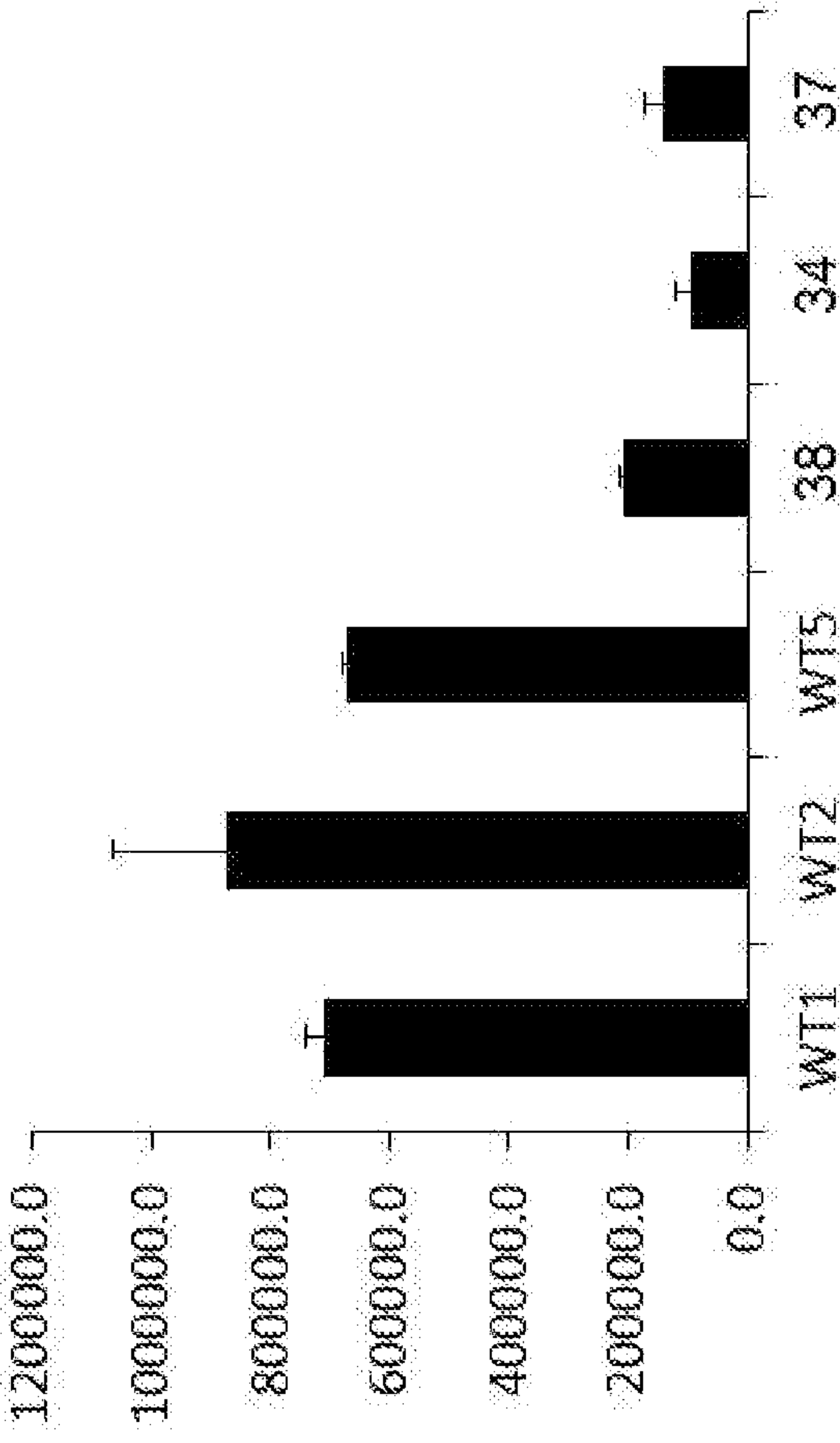


FIGURE 5A

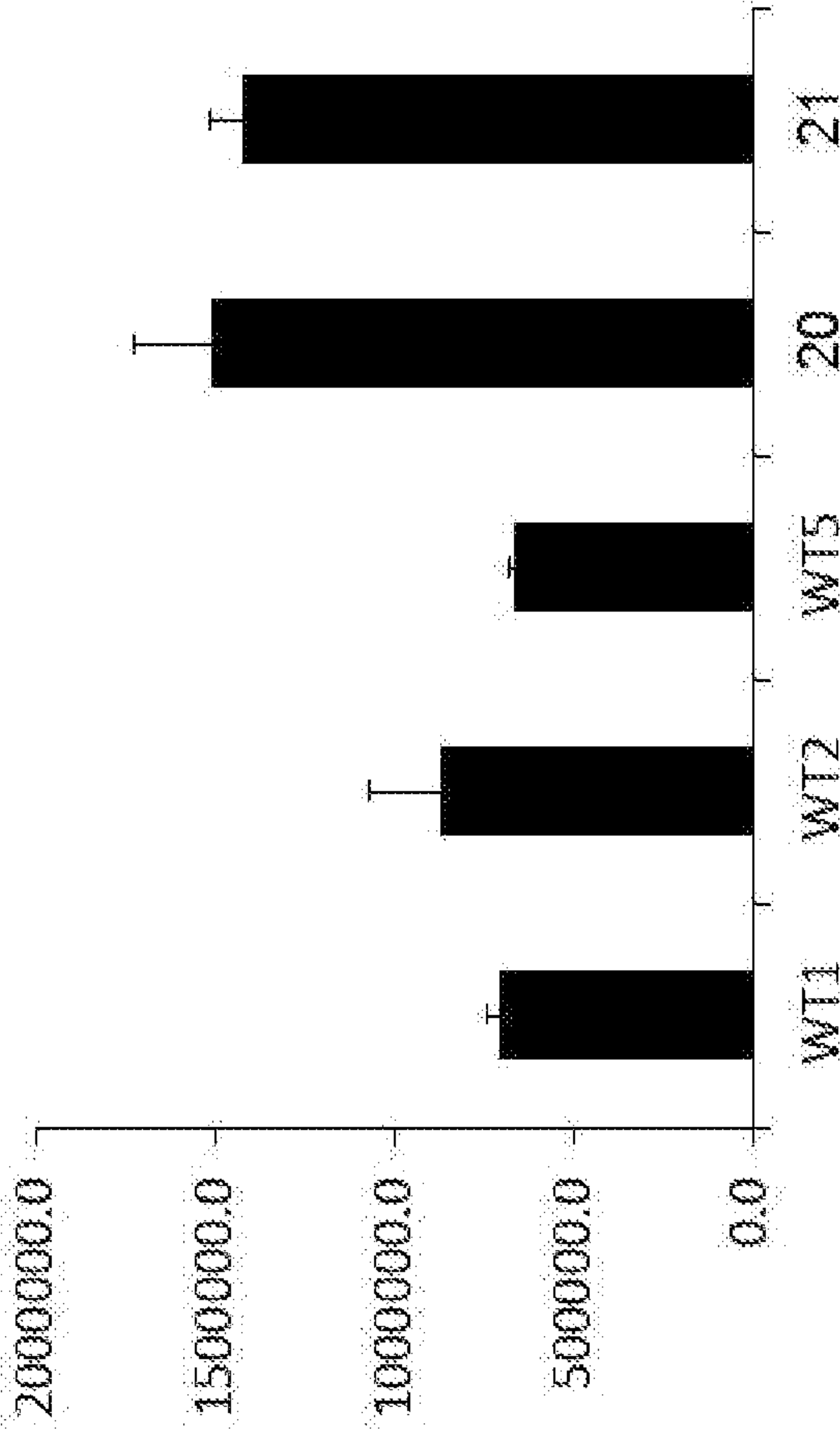


FIGURE 5C

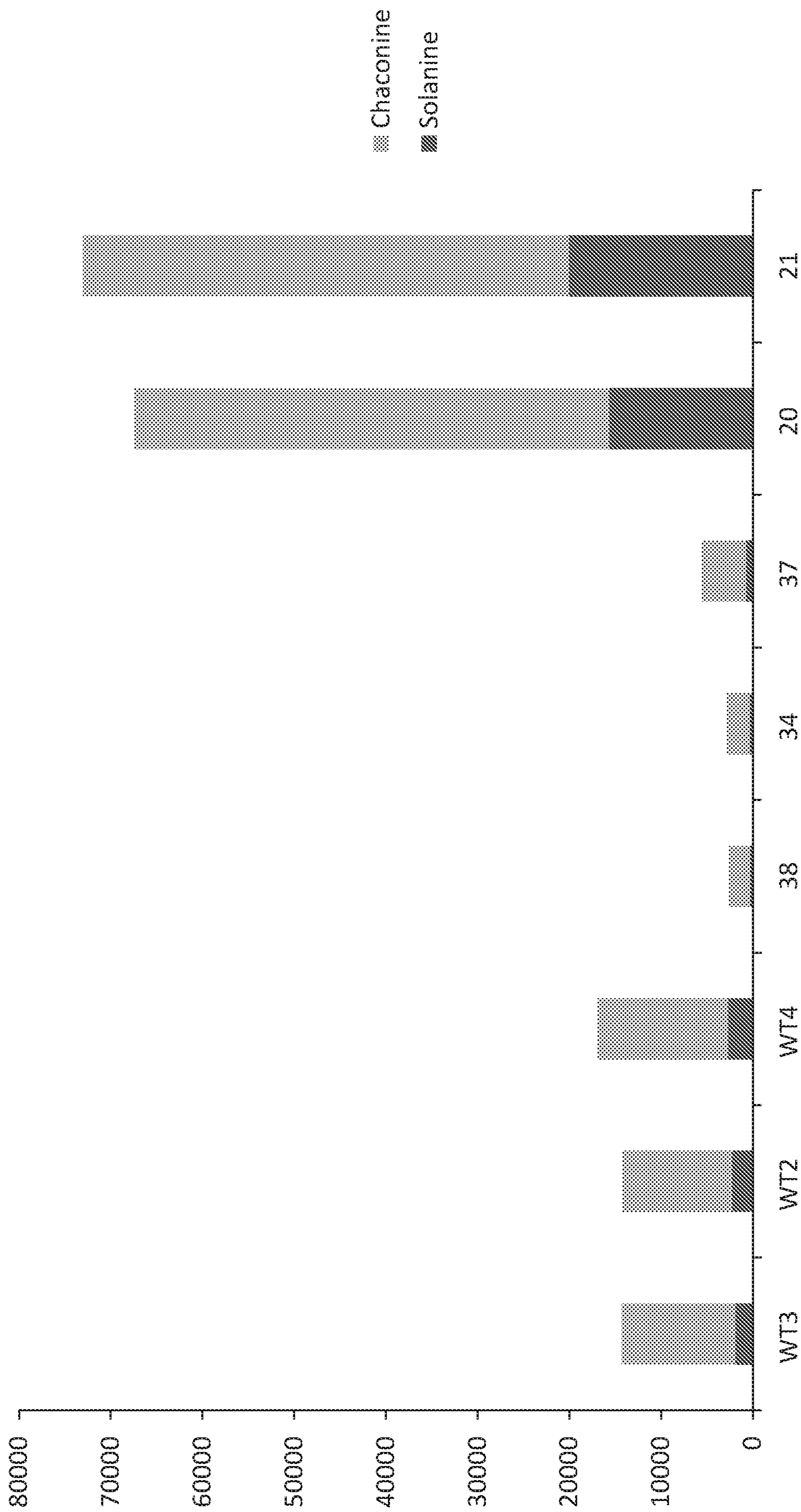


FIGURE 6

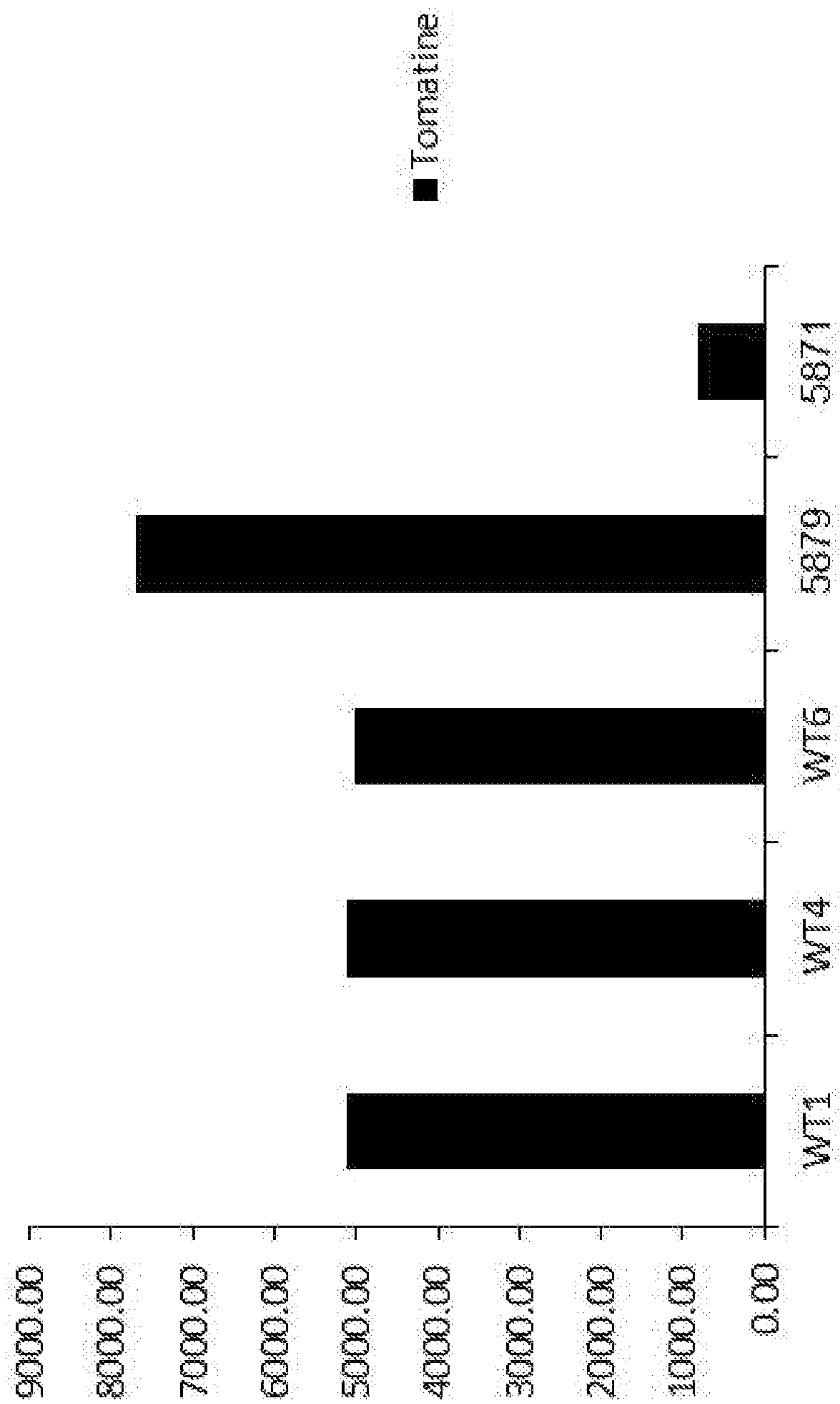


FIGURE 7

FIGURE 8A

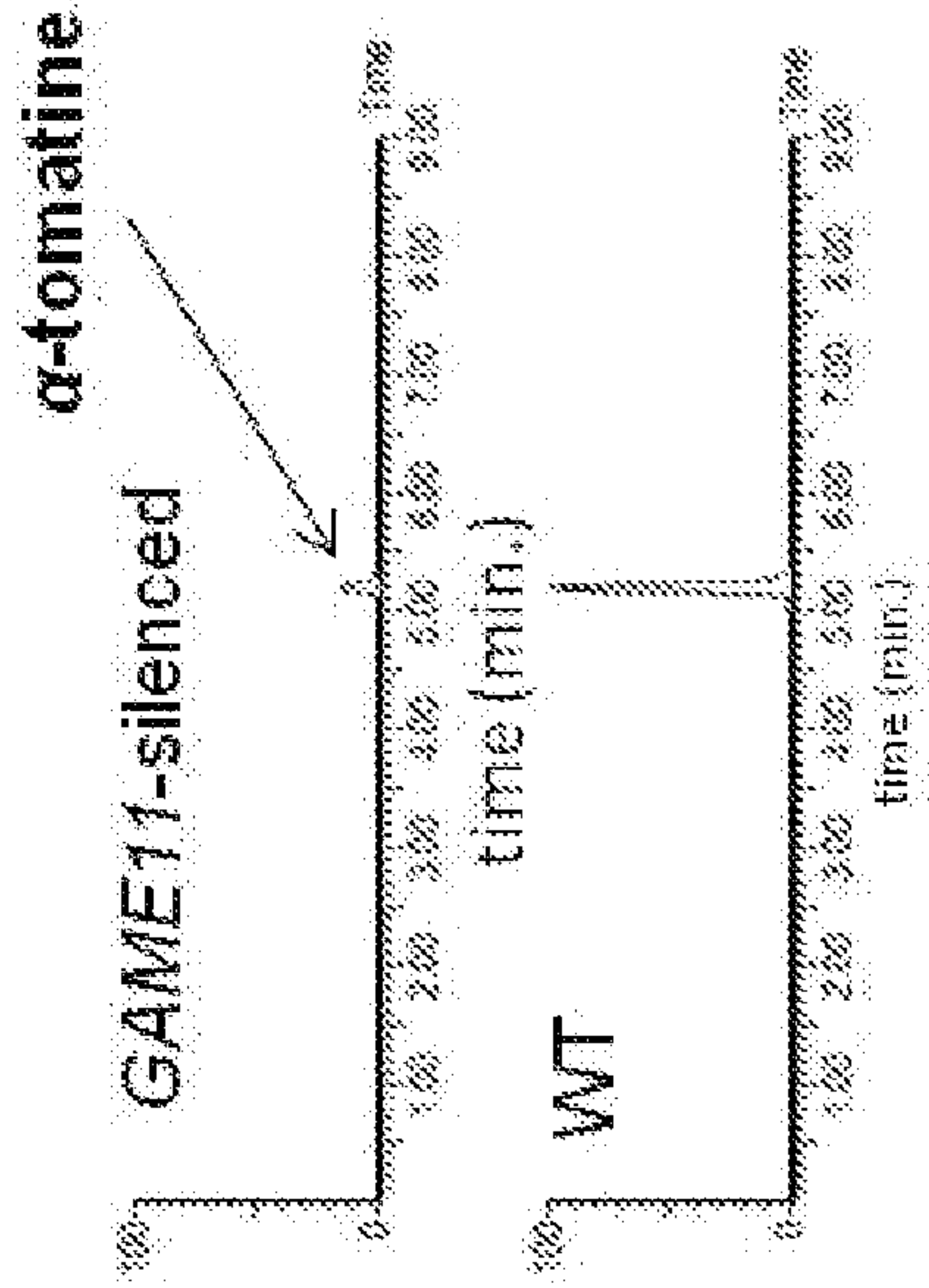


FIGURE 8B

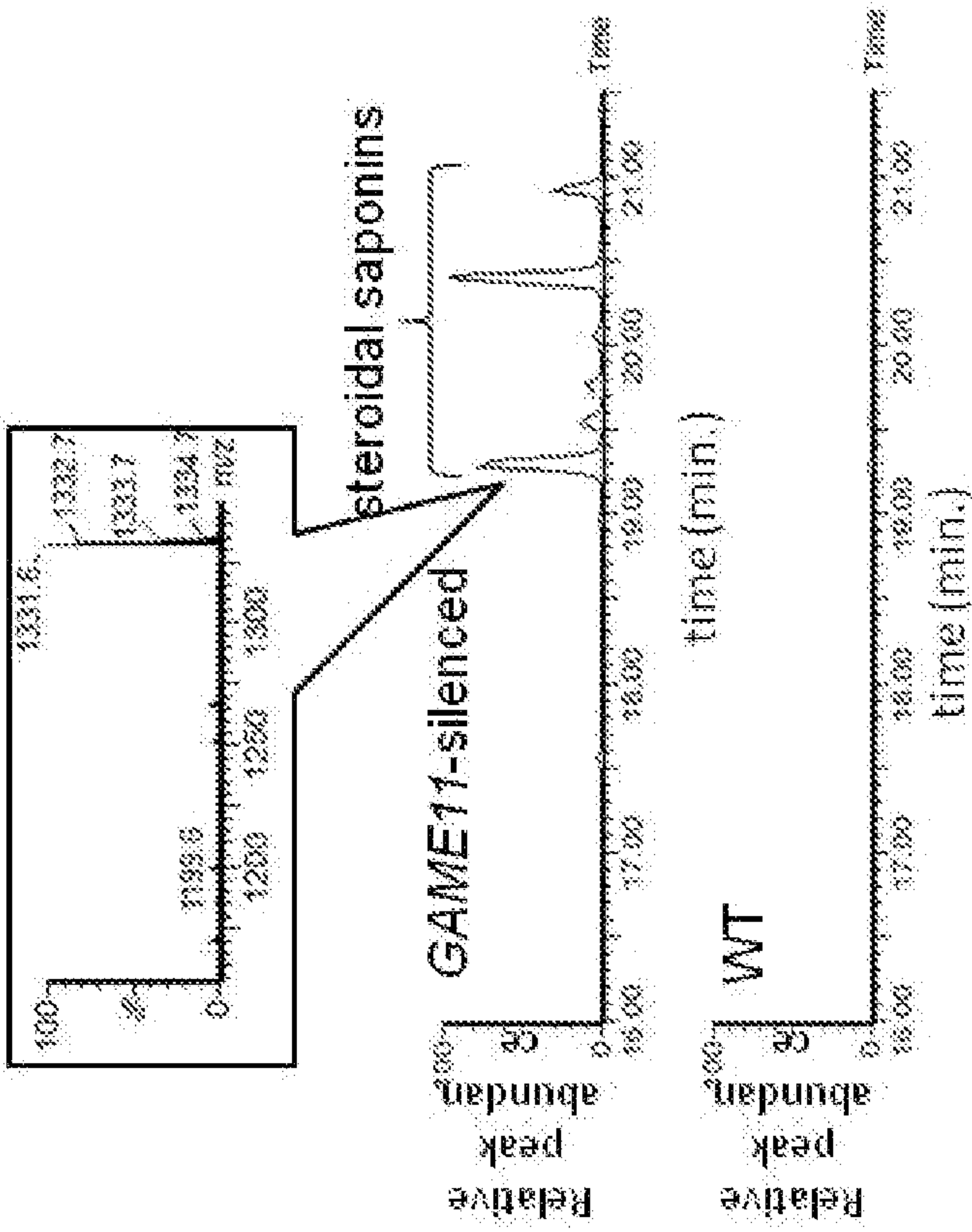
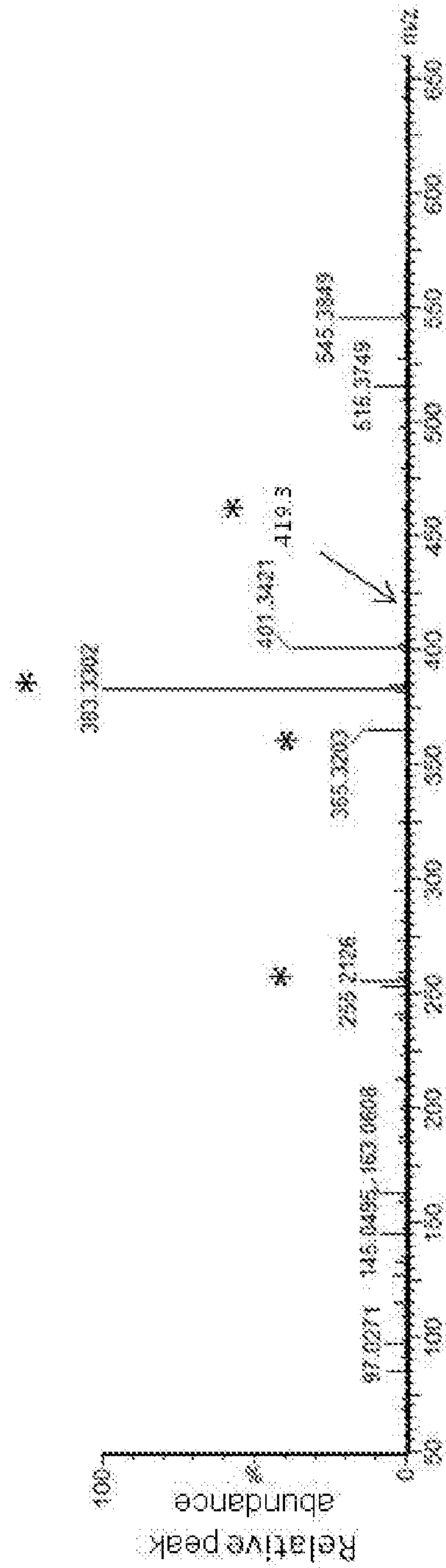


FIGURE 8C



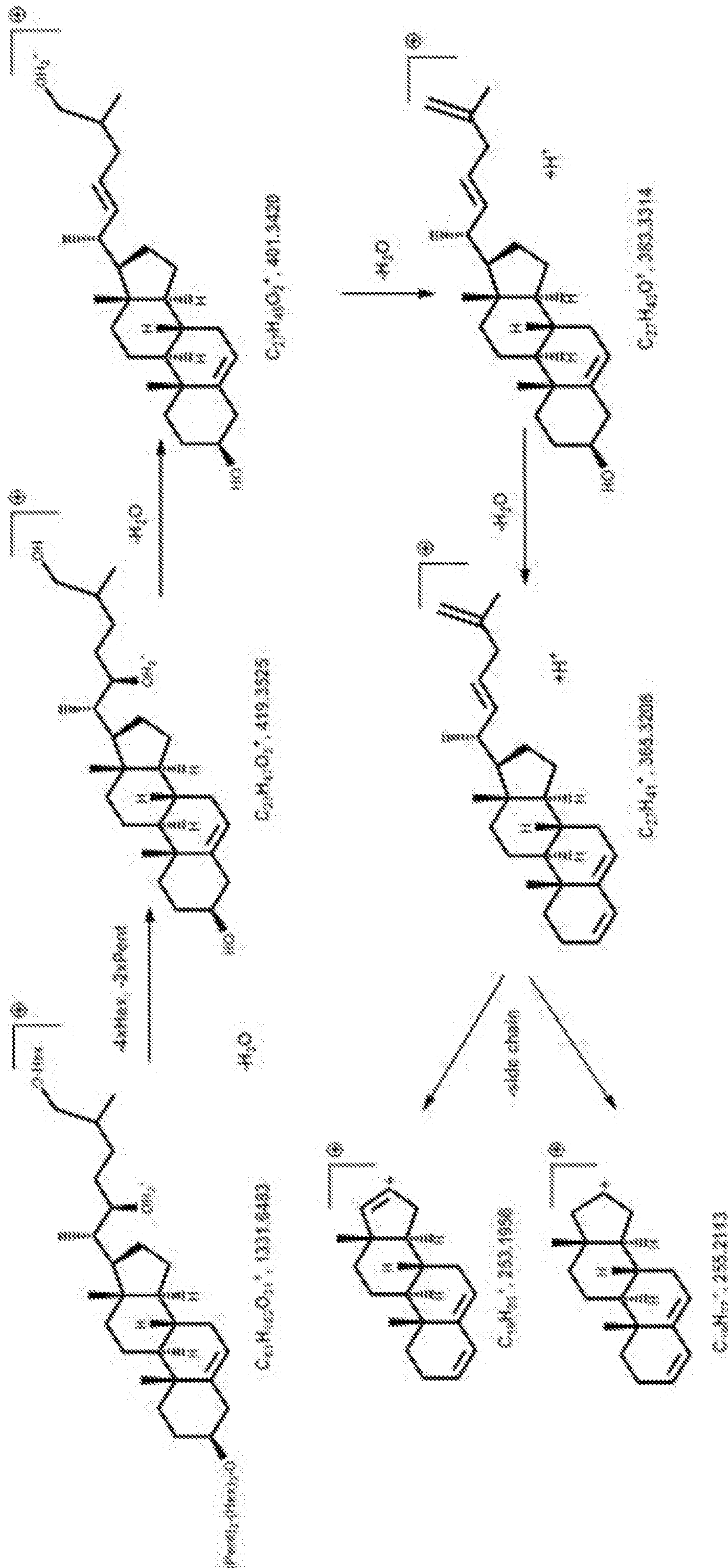
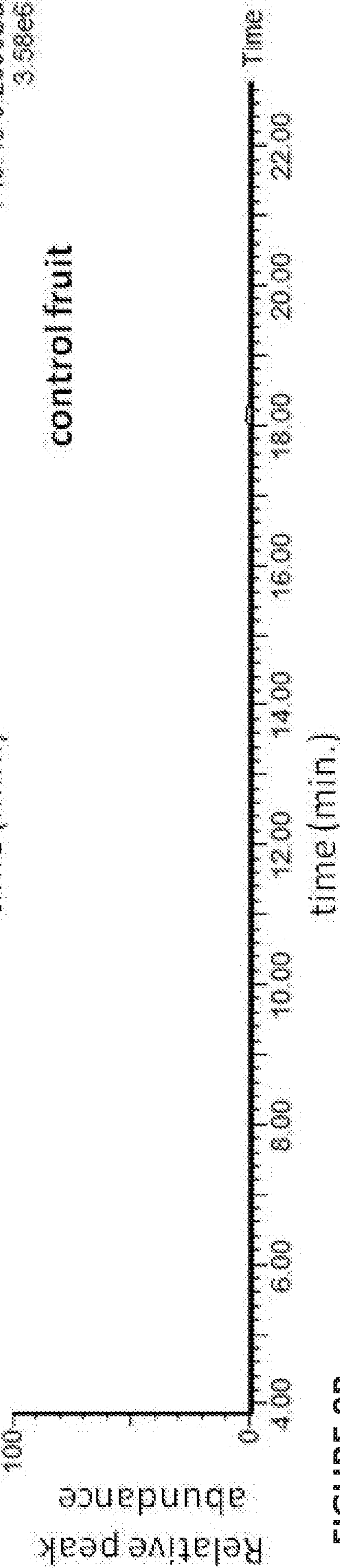
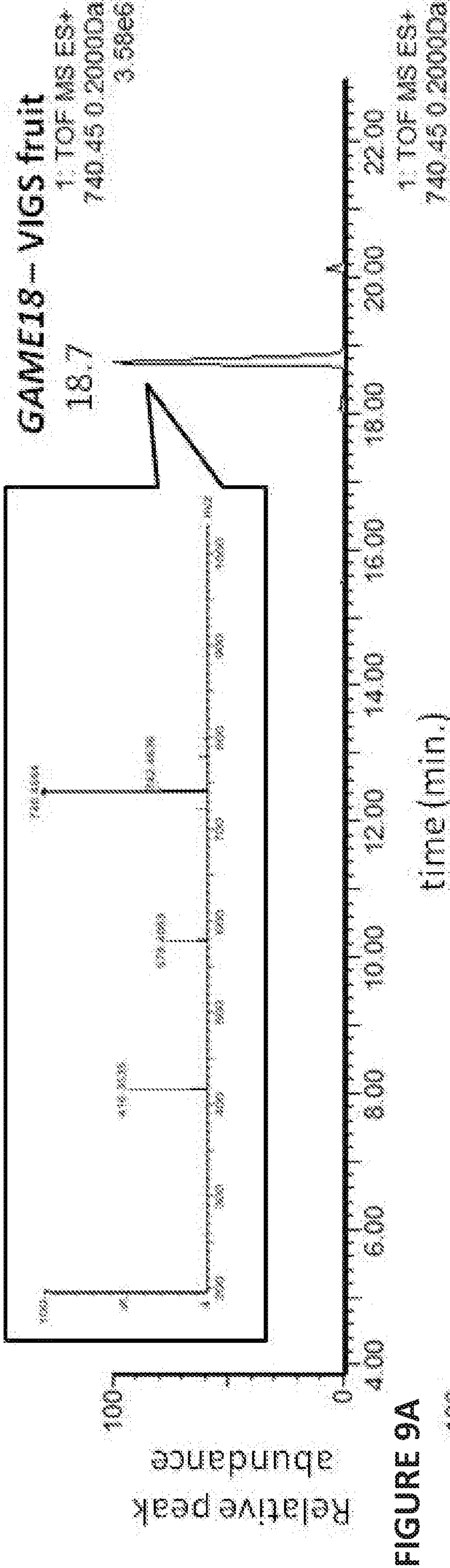


FIGURE 8D



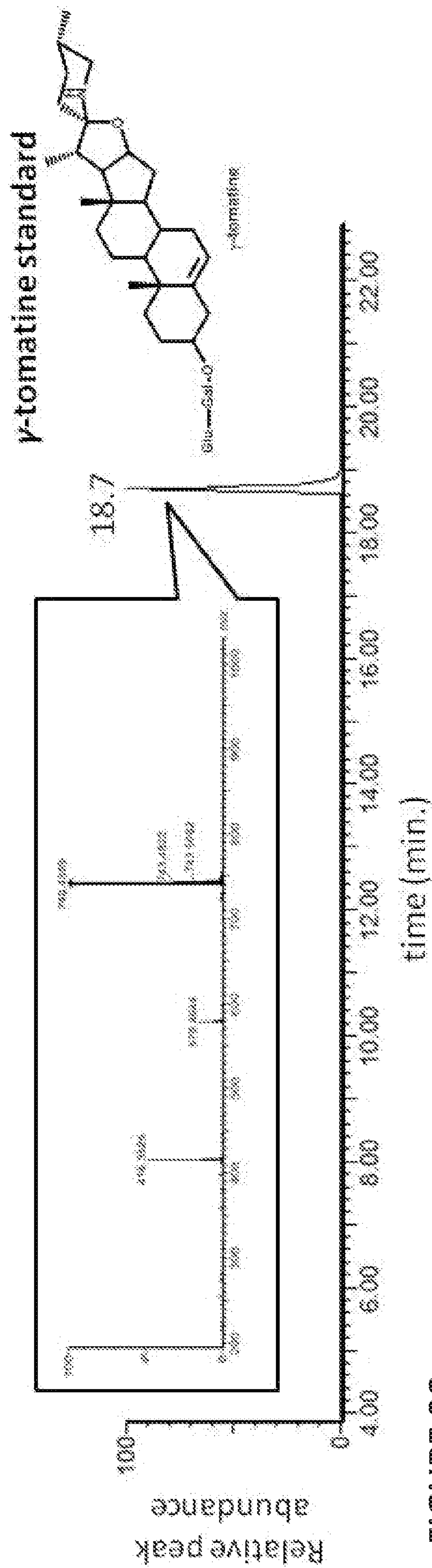


FIGURE 9C

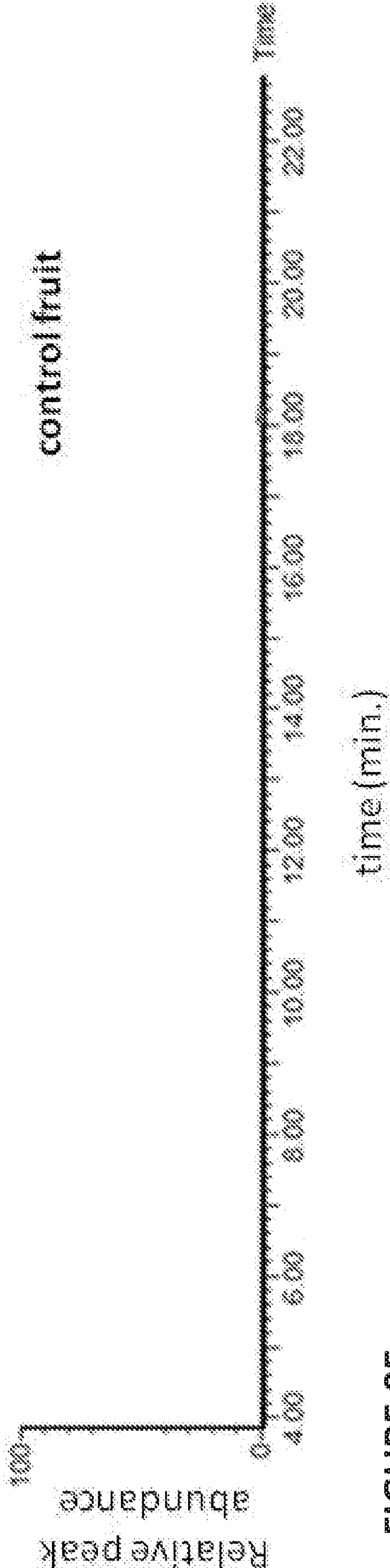
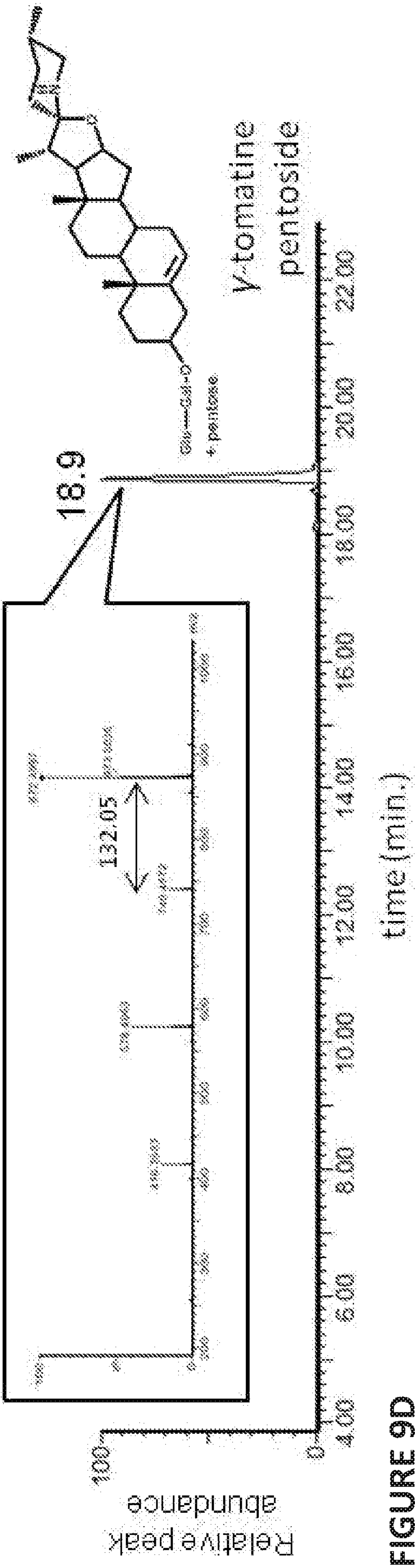


FIGURE 10A

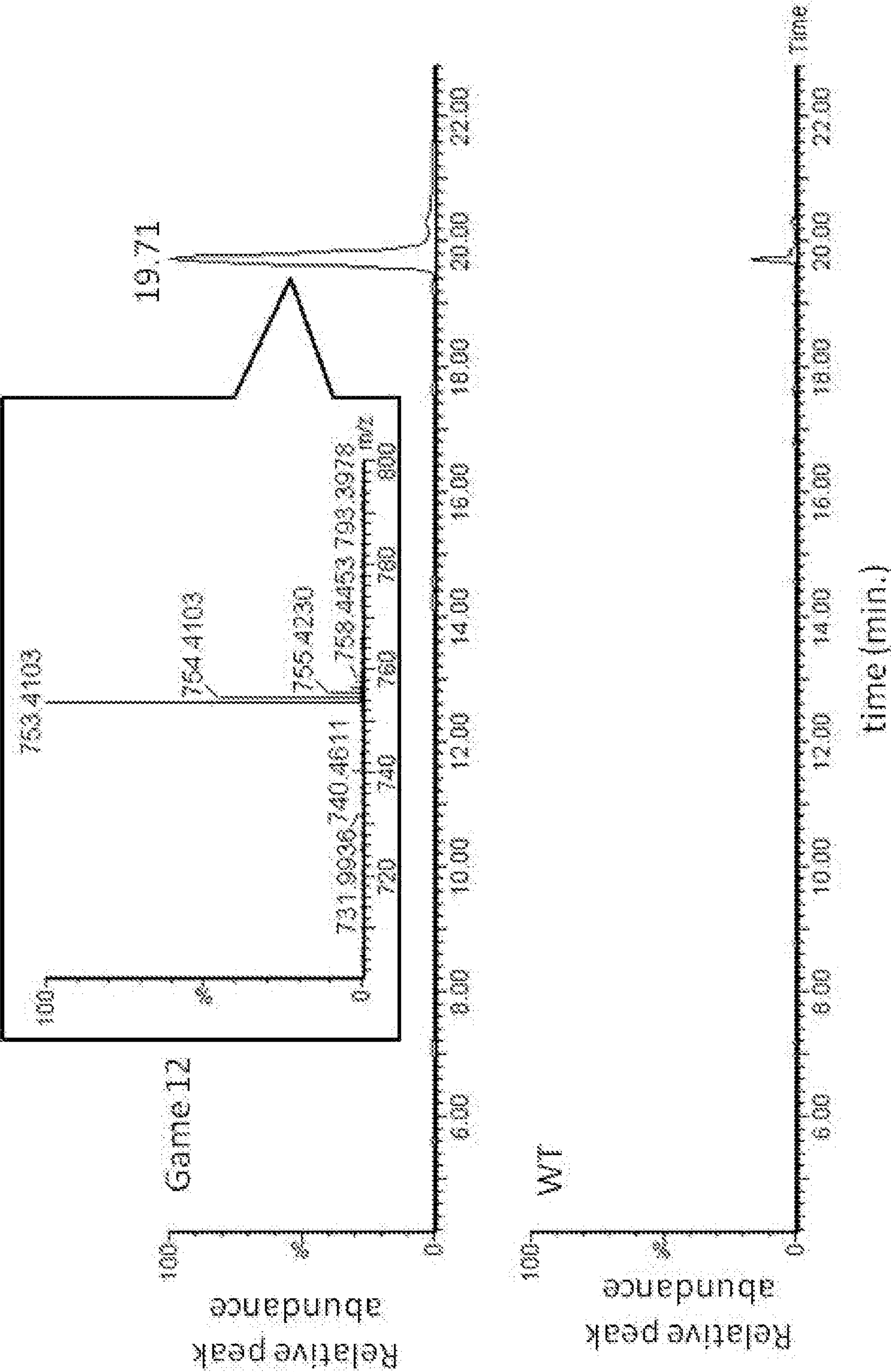
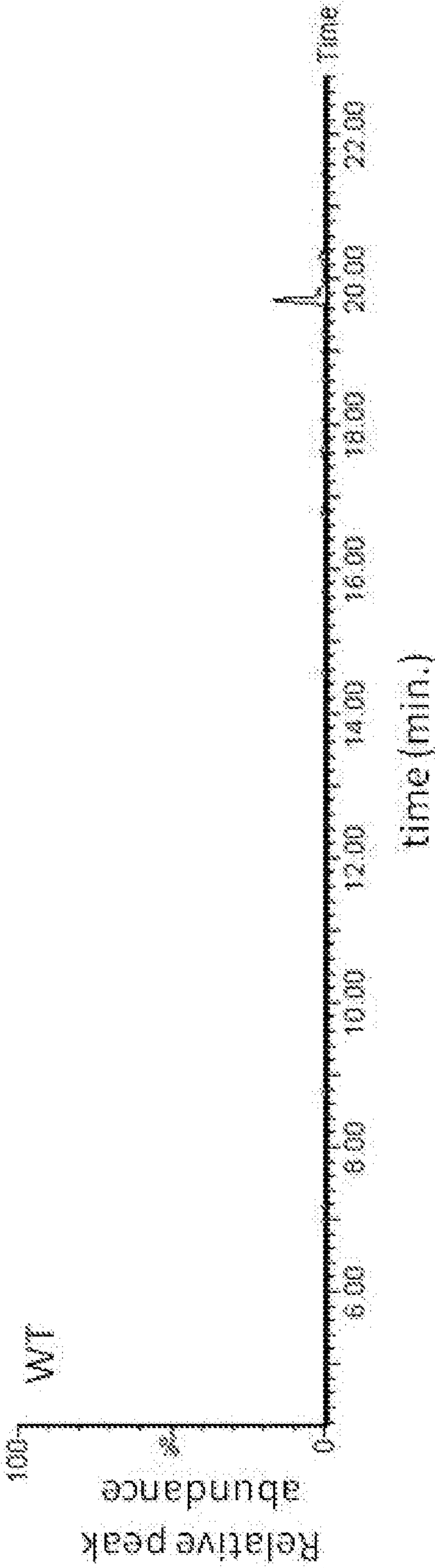
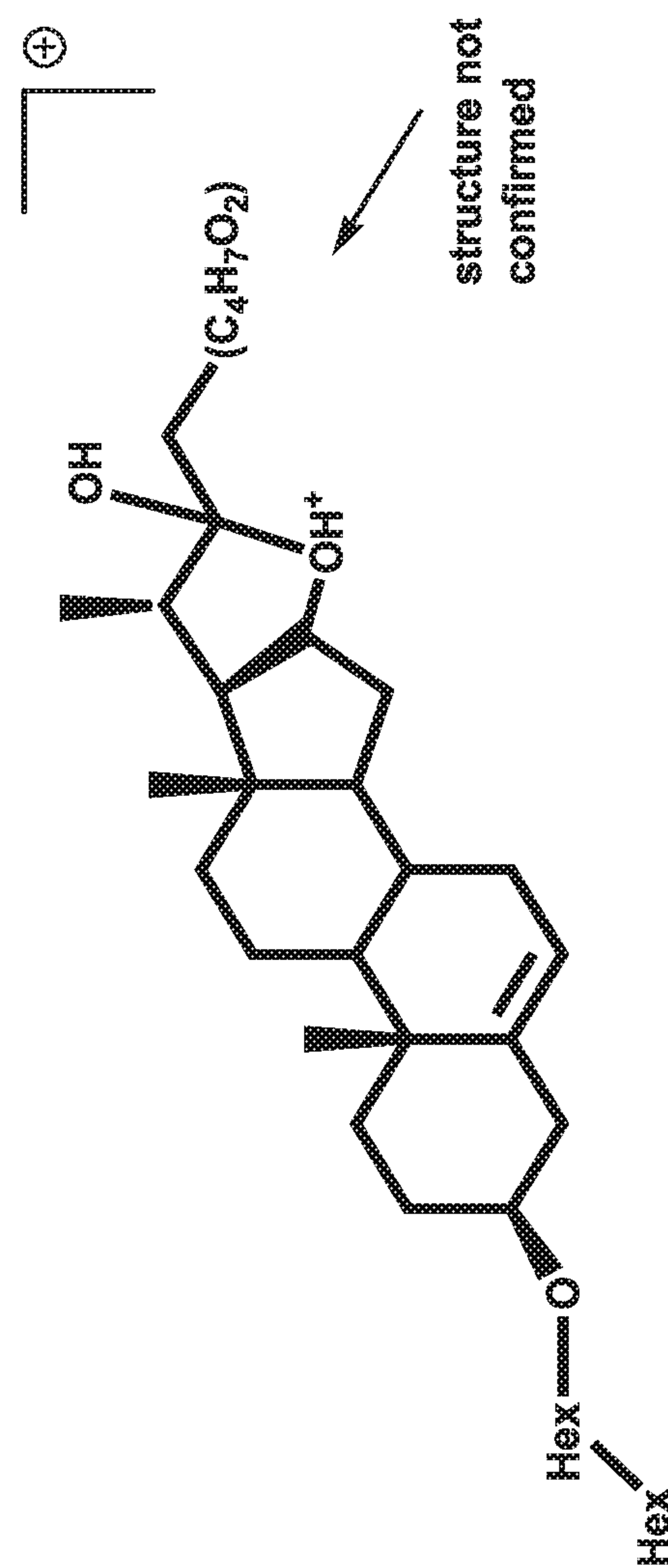
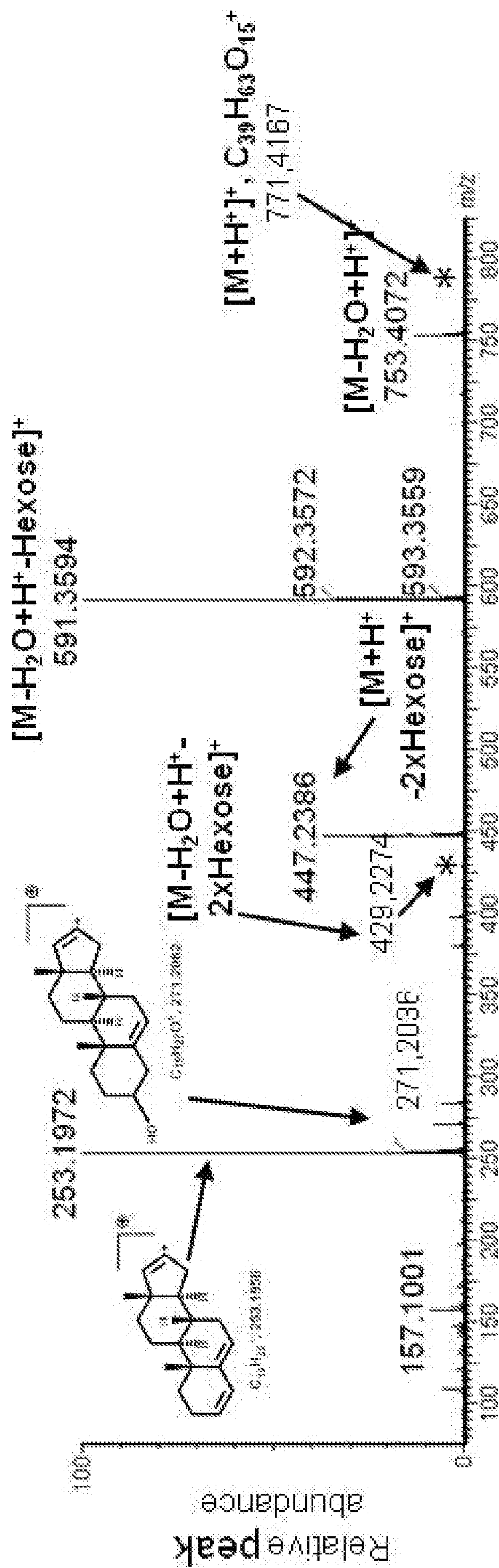


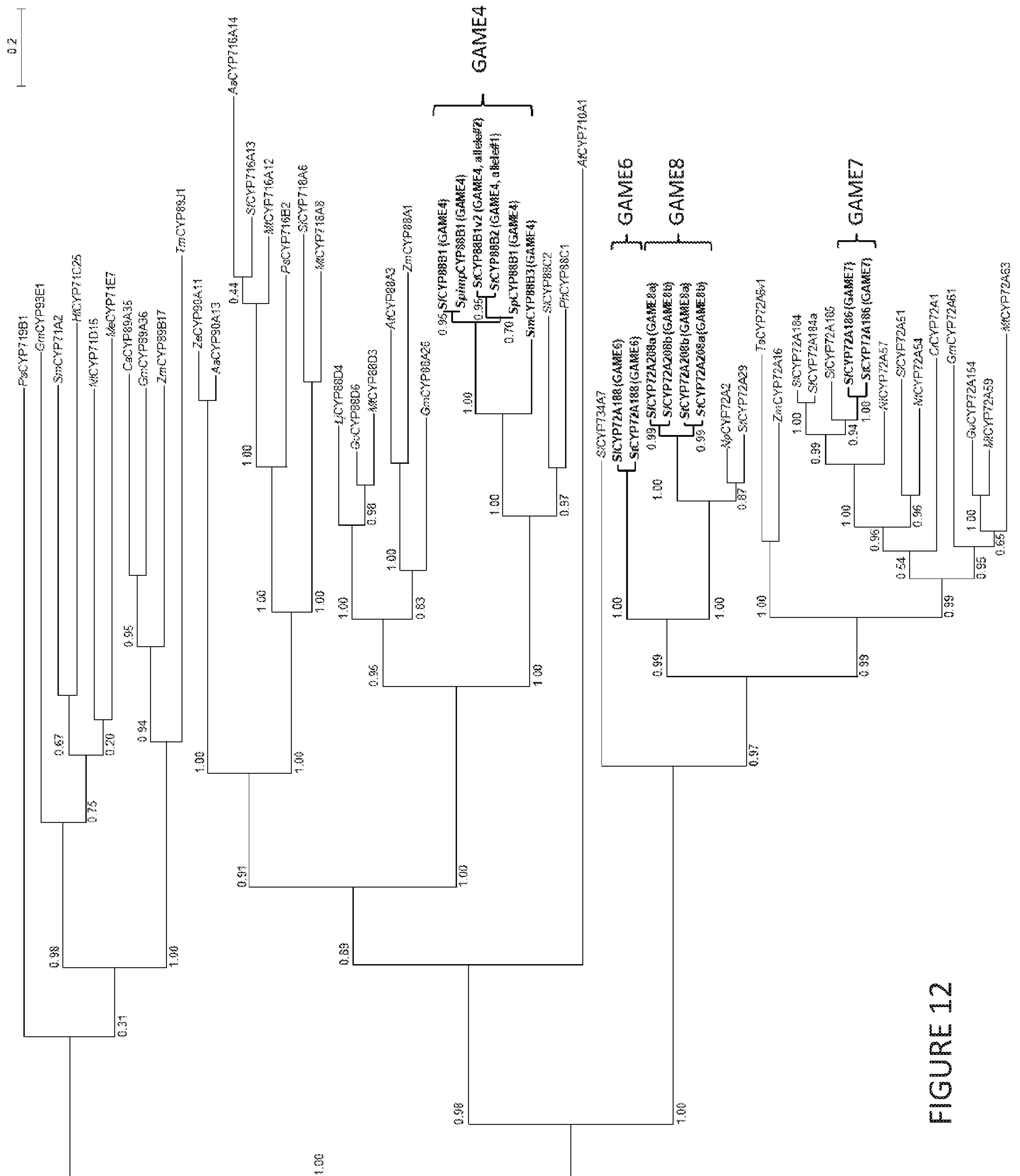
FIGURE 10B











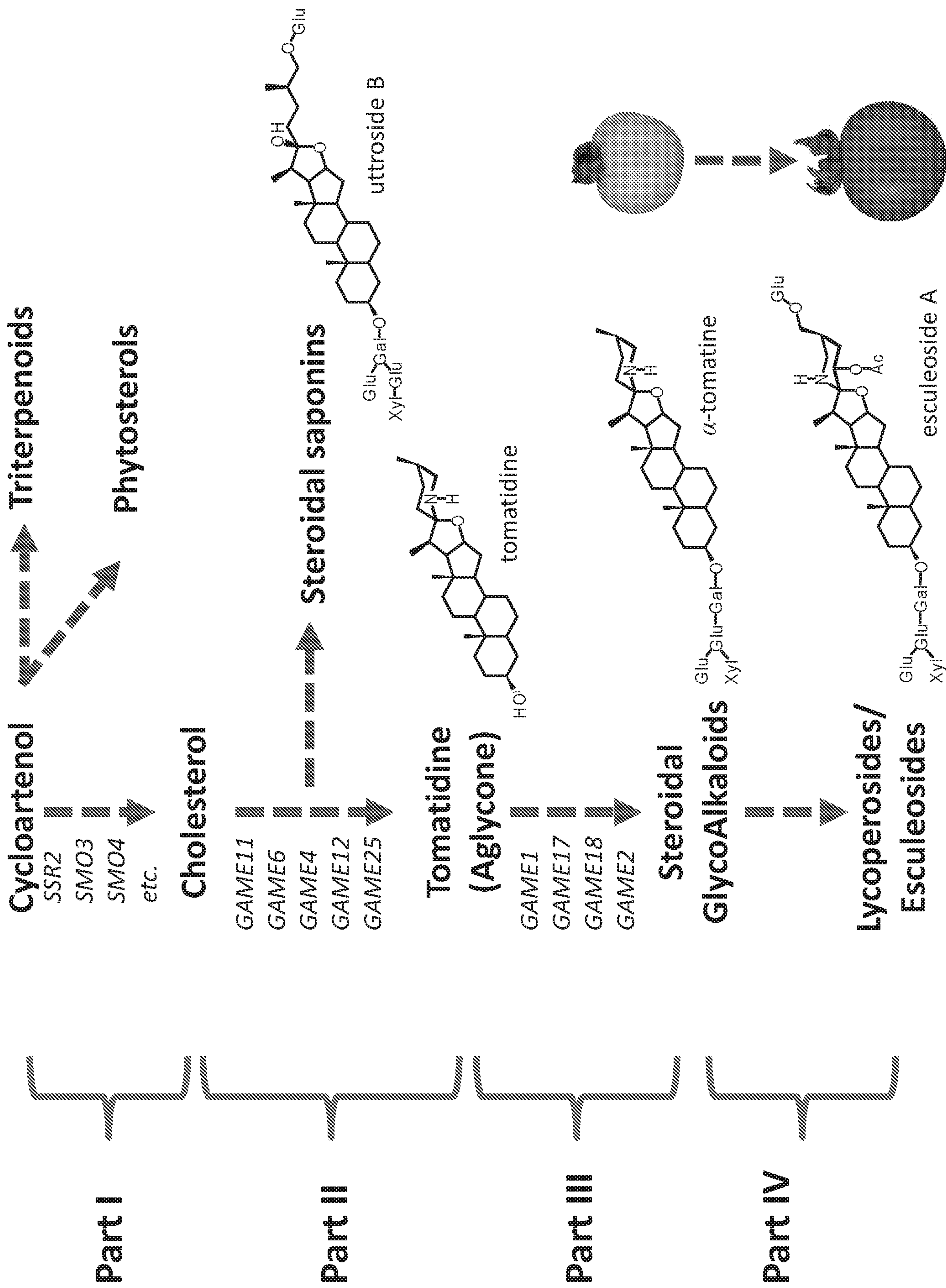


FIGURE 13

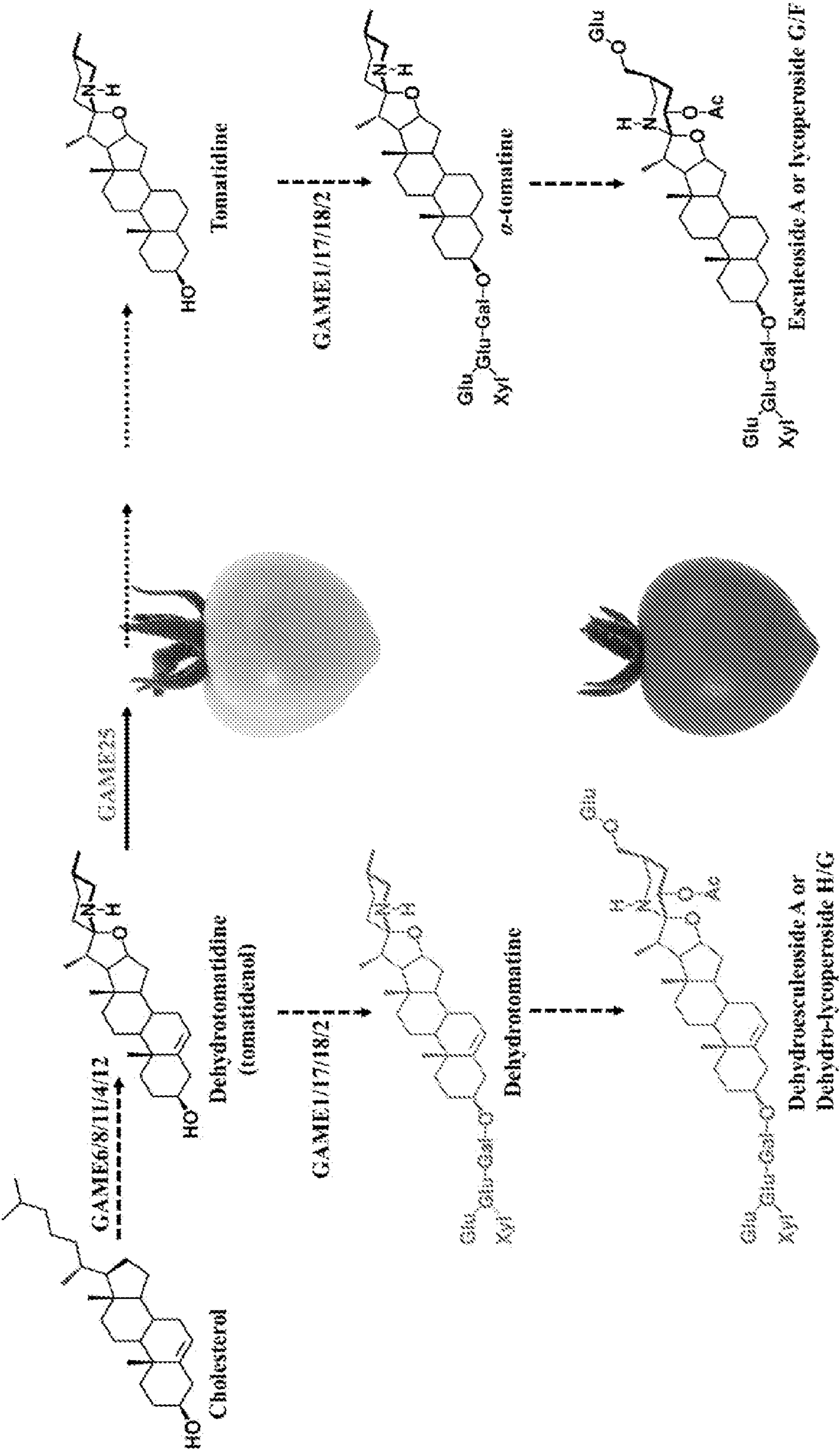


FIGURE 14A

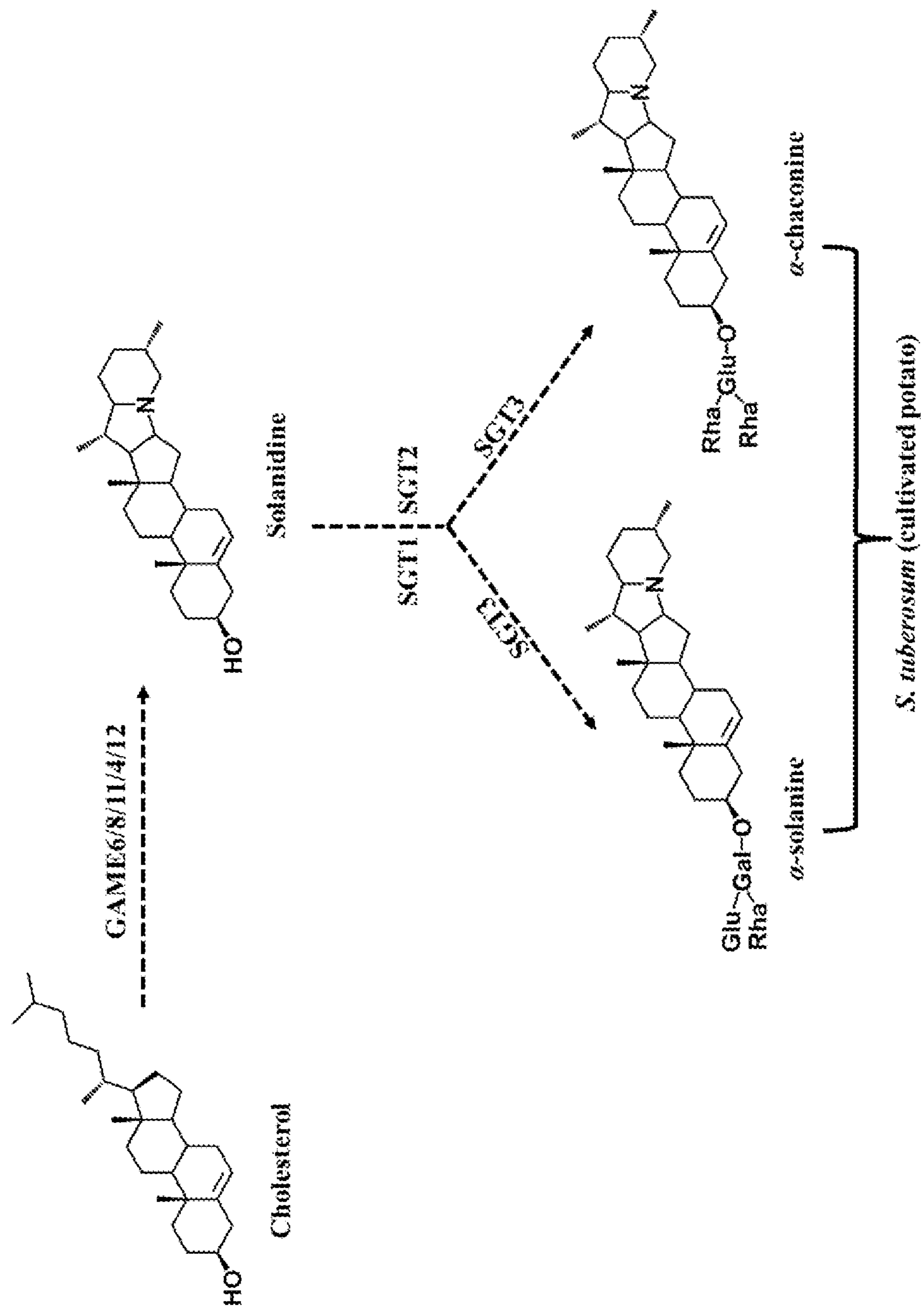


FIGURE 14B

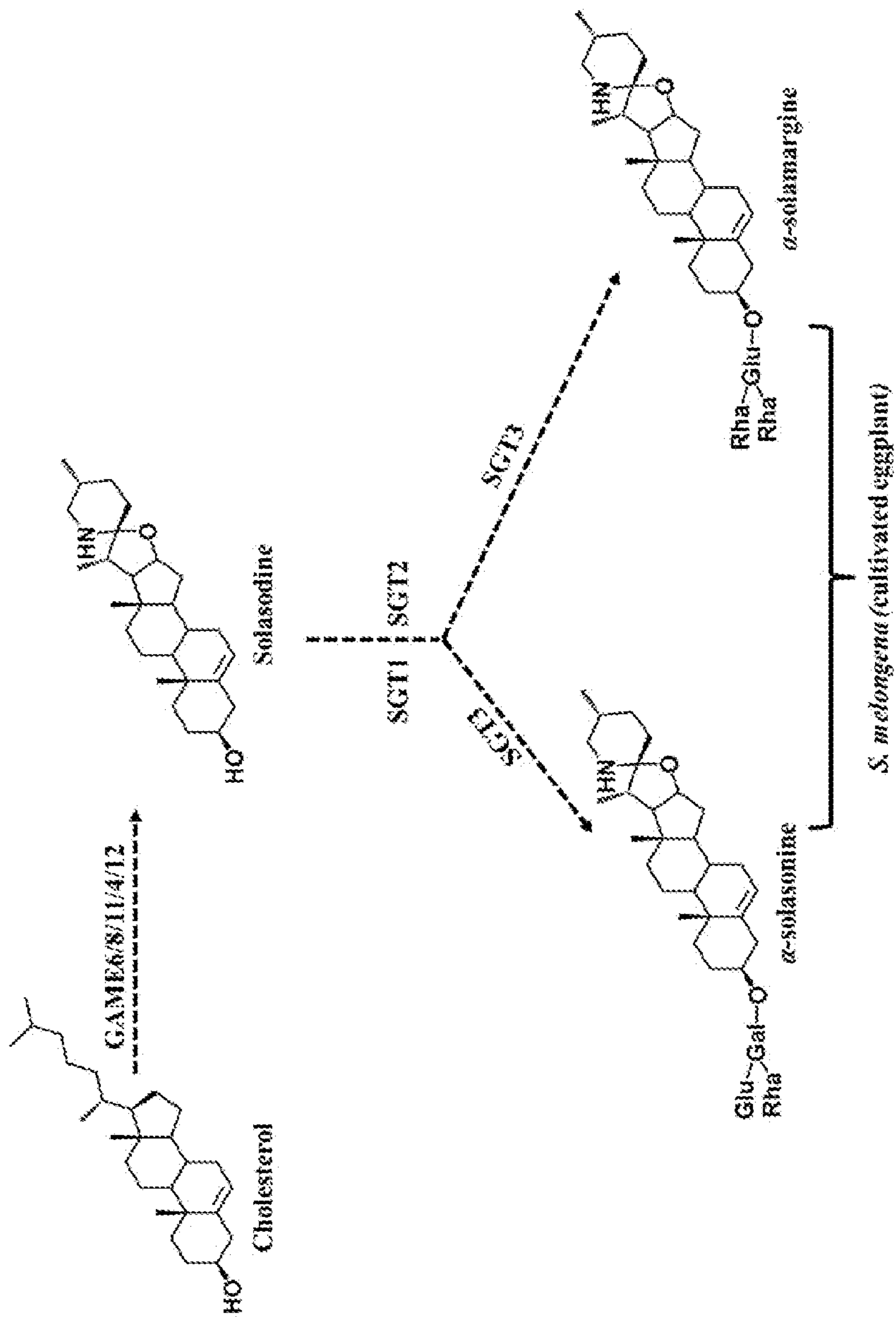


FIGURE 14C

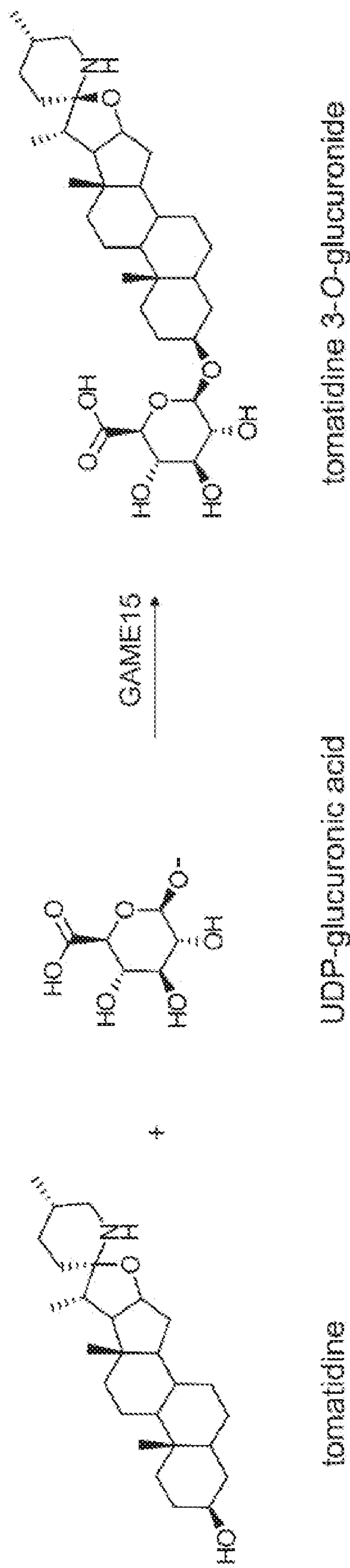


Figure 14D

FIGURE 15A

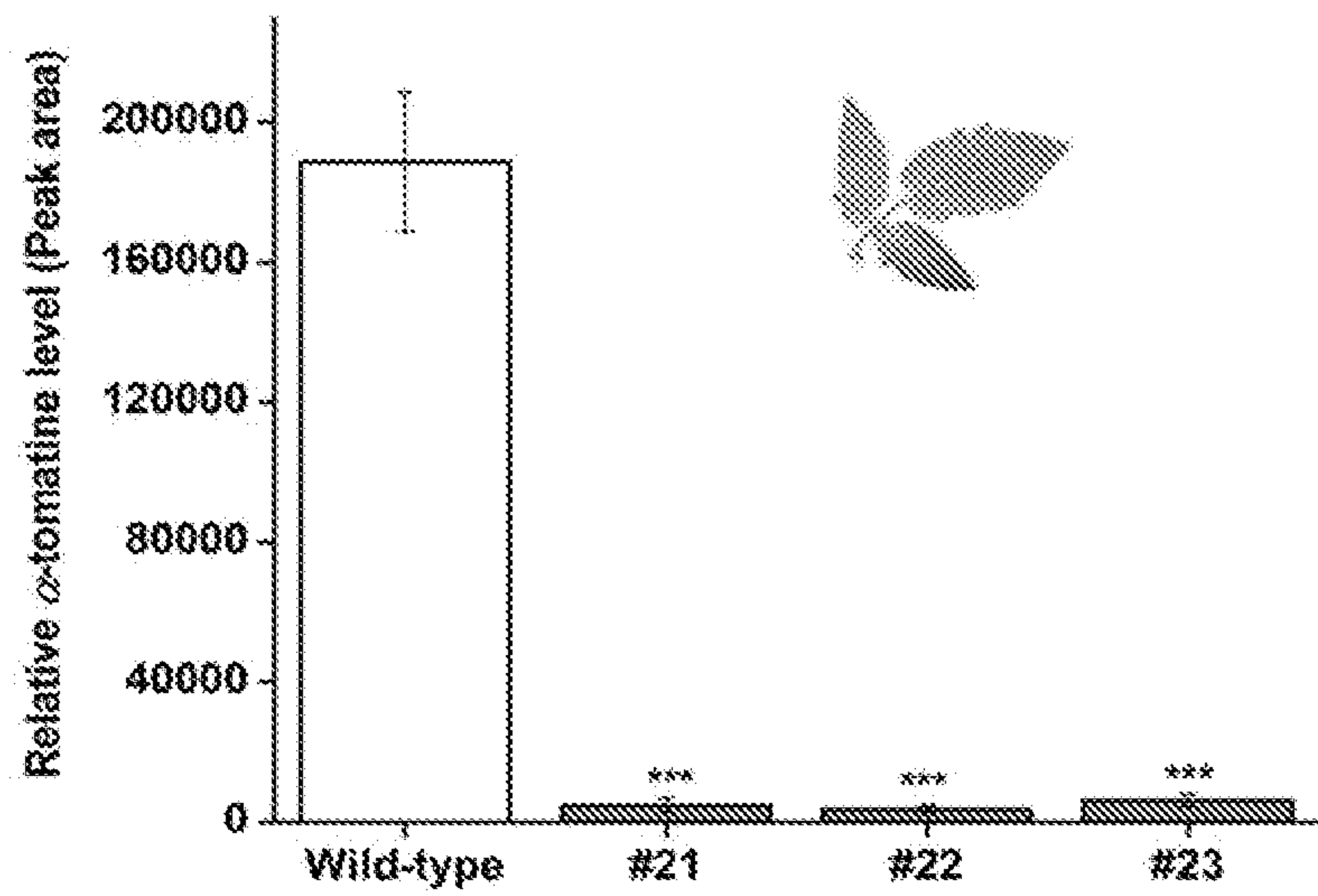


FIGURE 15B

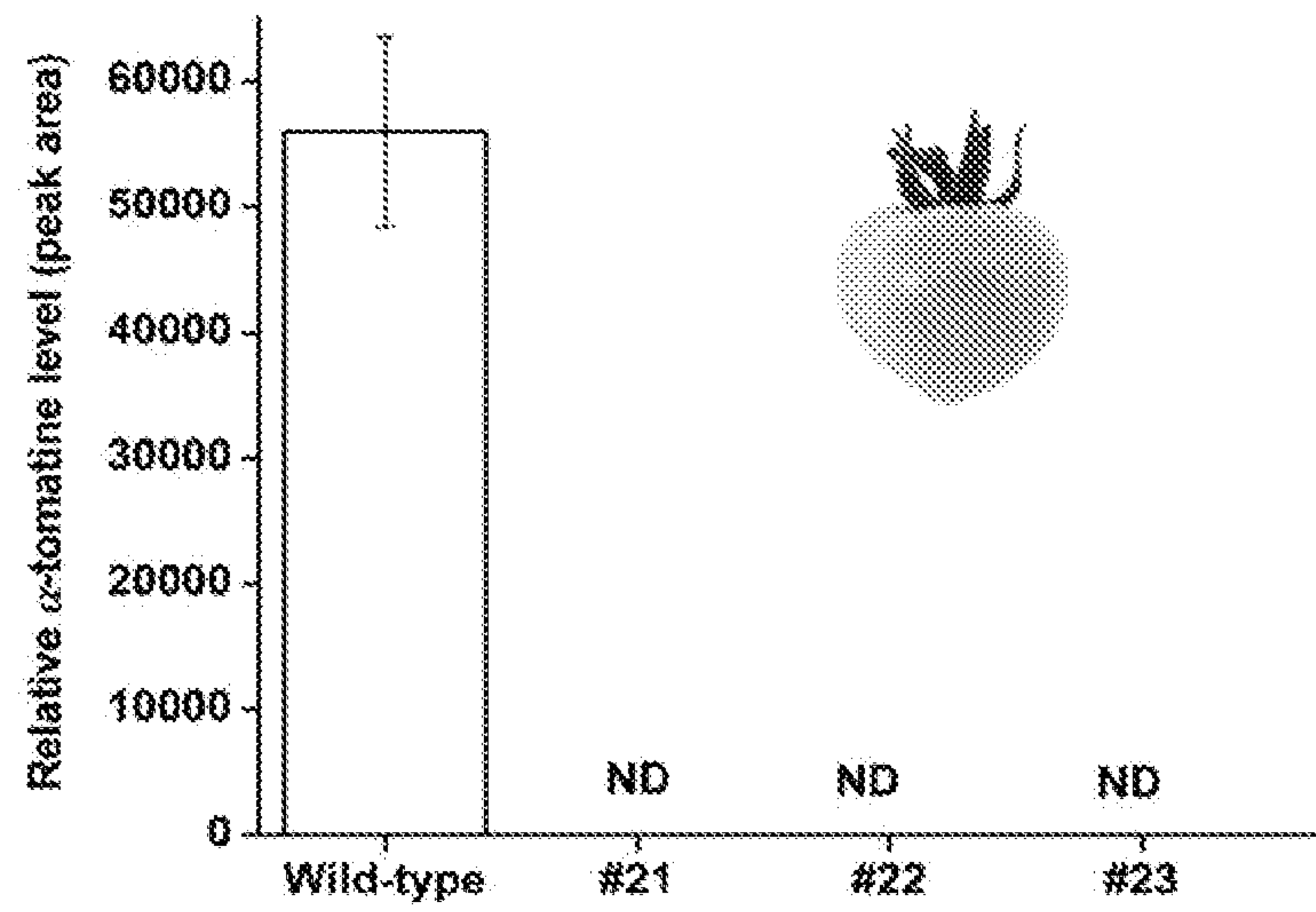
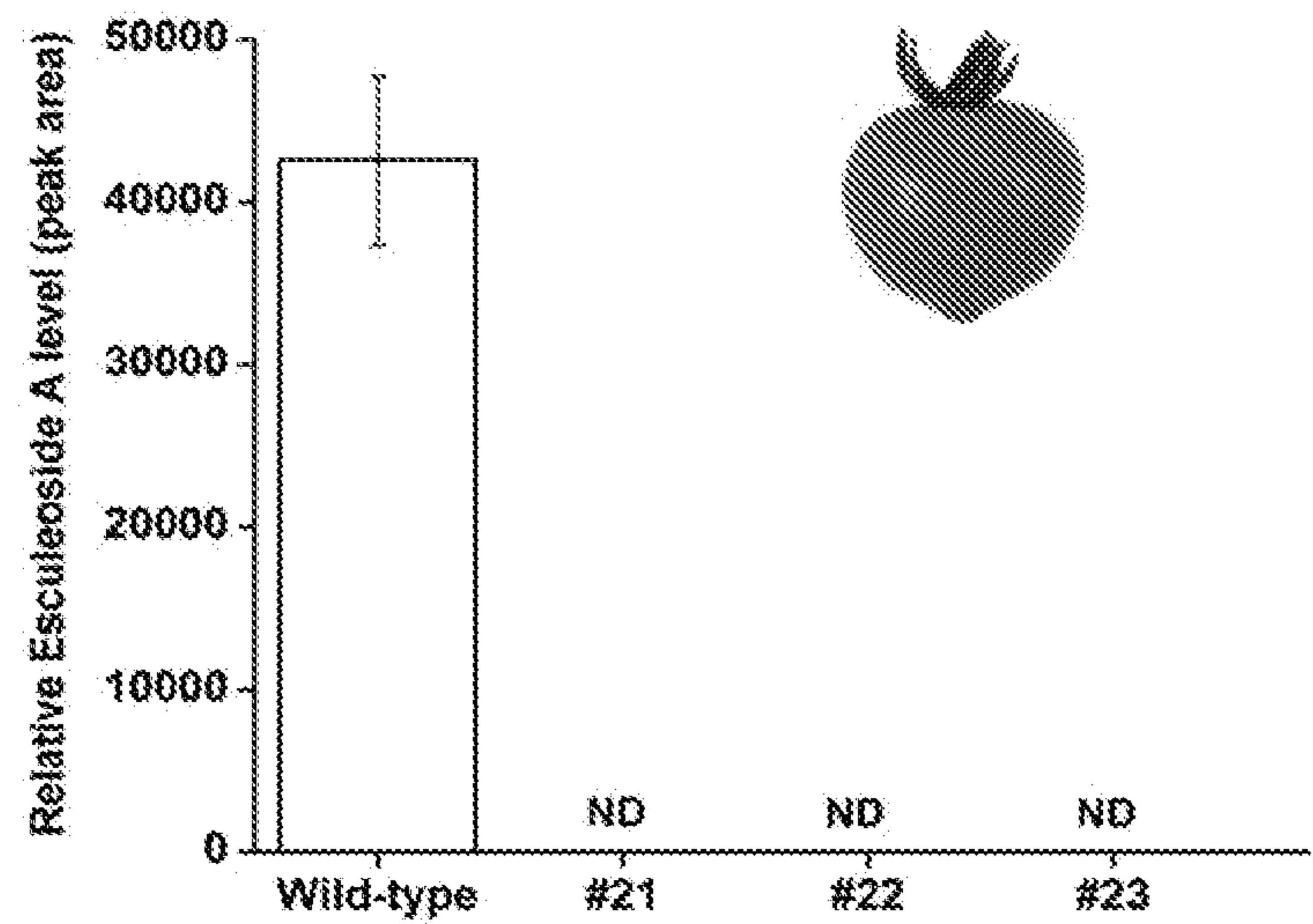


FIGURE 15C



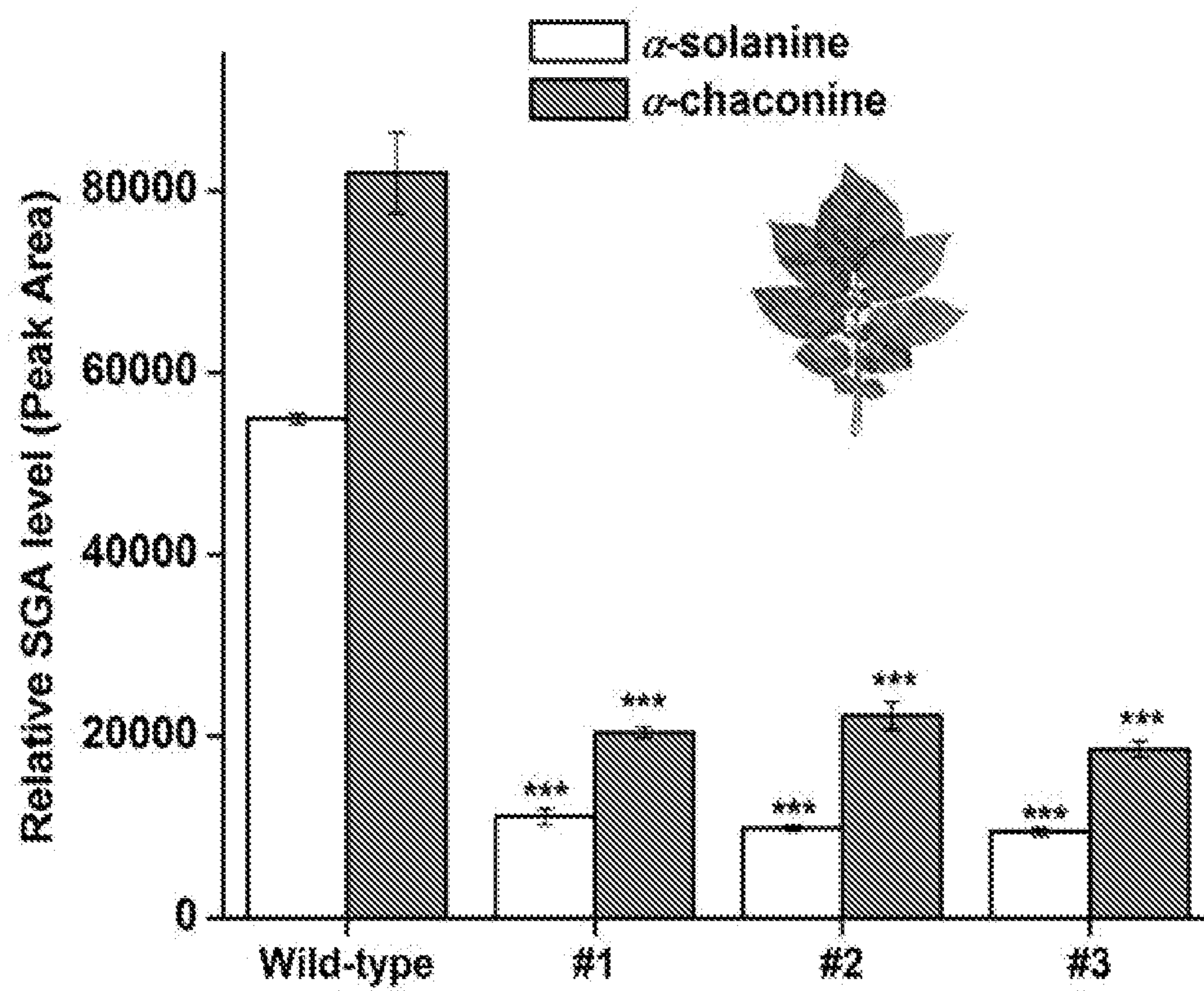


FIGURE 16

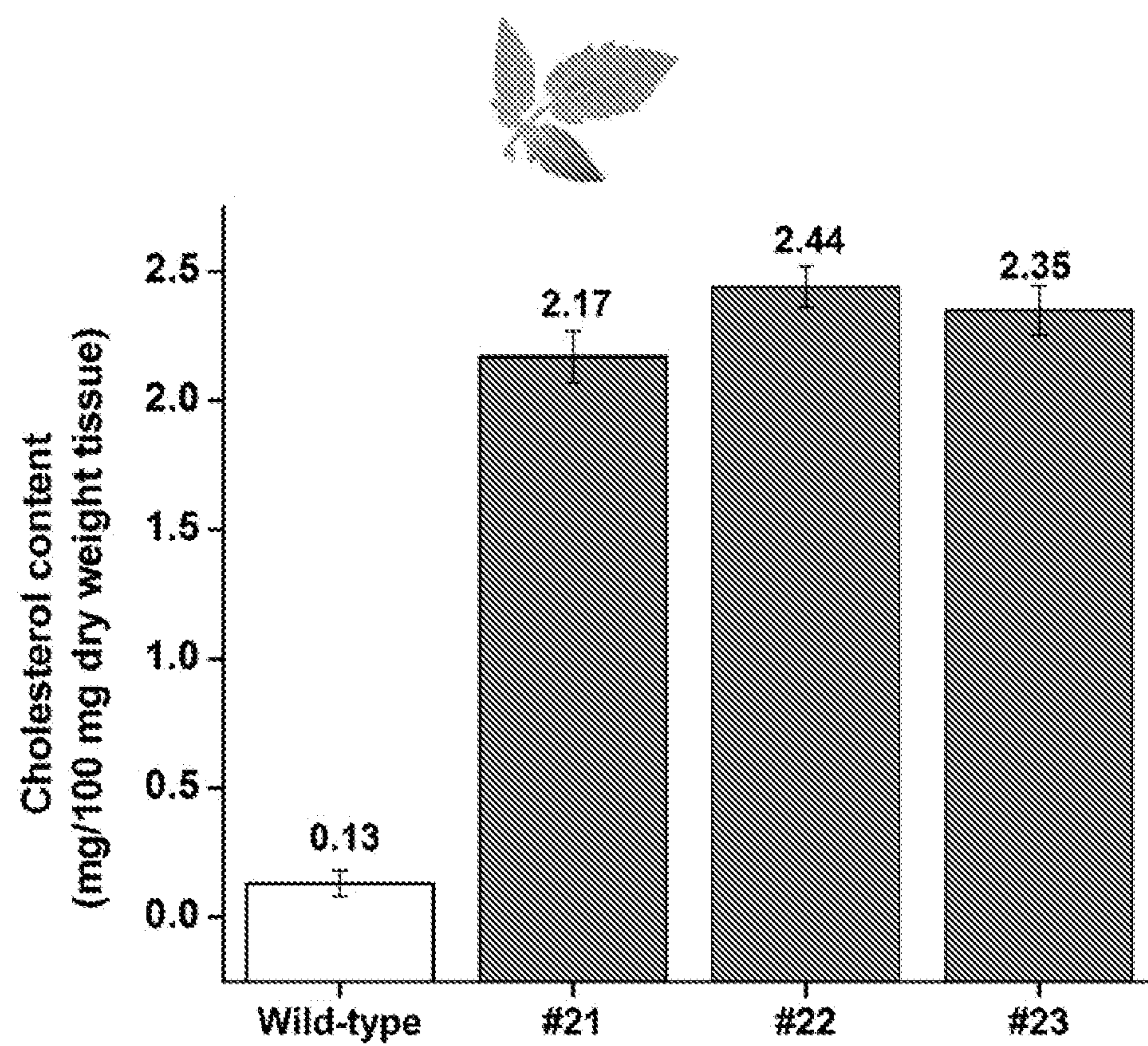


FIGURE 17

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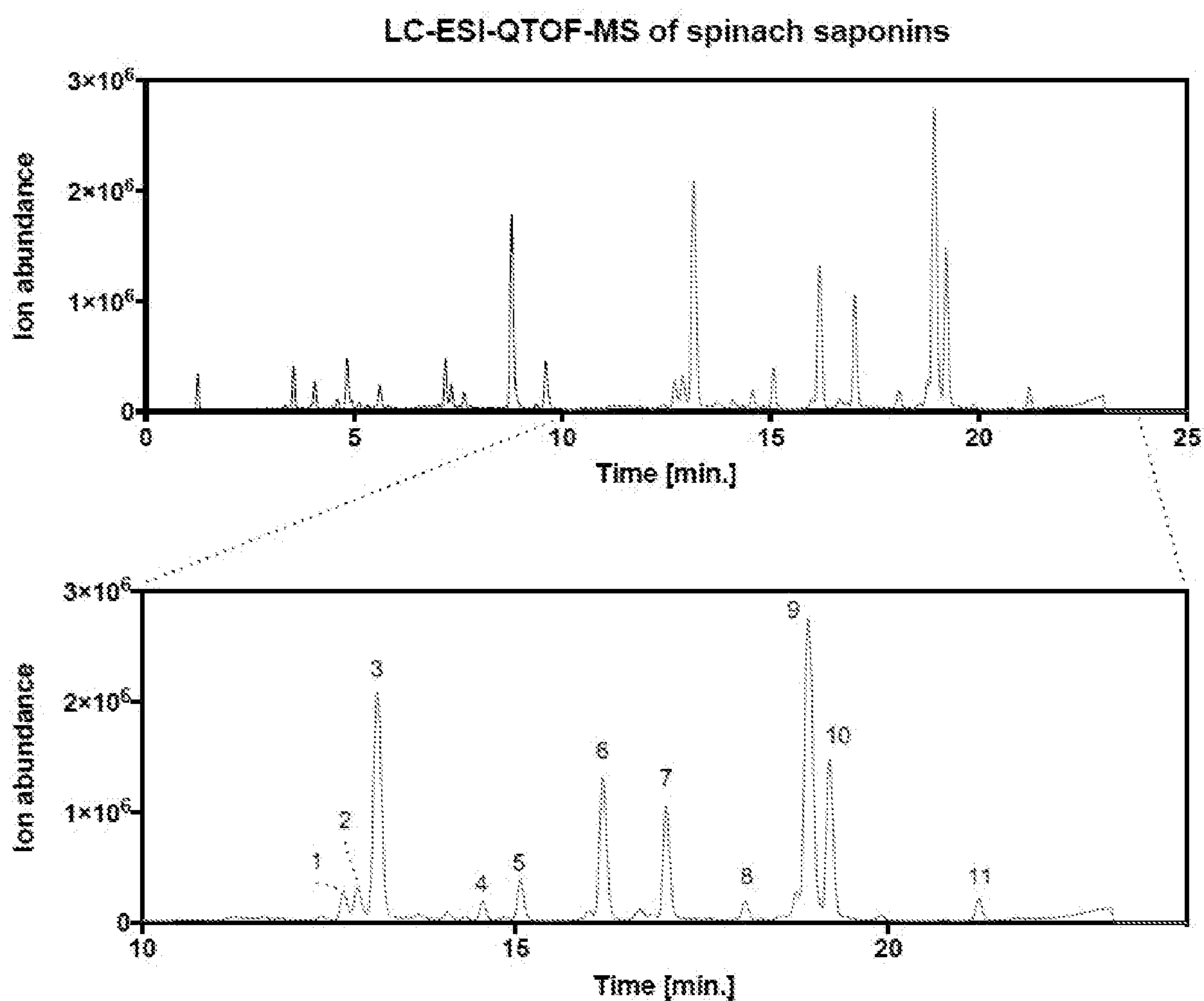


FIGURE 18

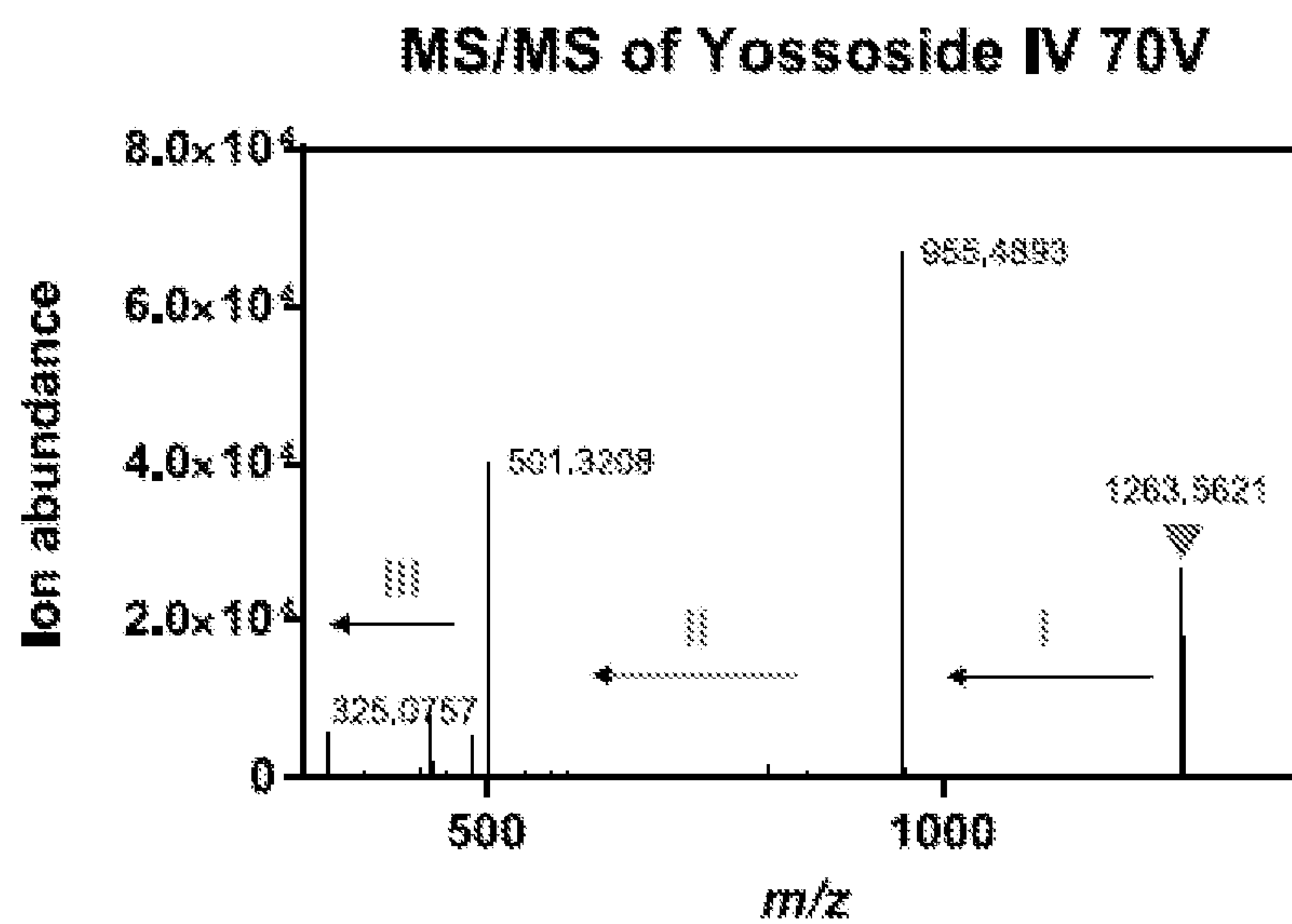


FIGURE 19A

MS/MS of Yossoside IV 70V

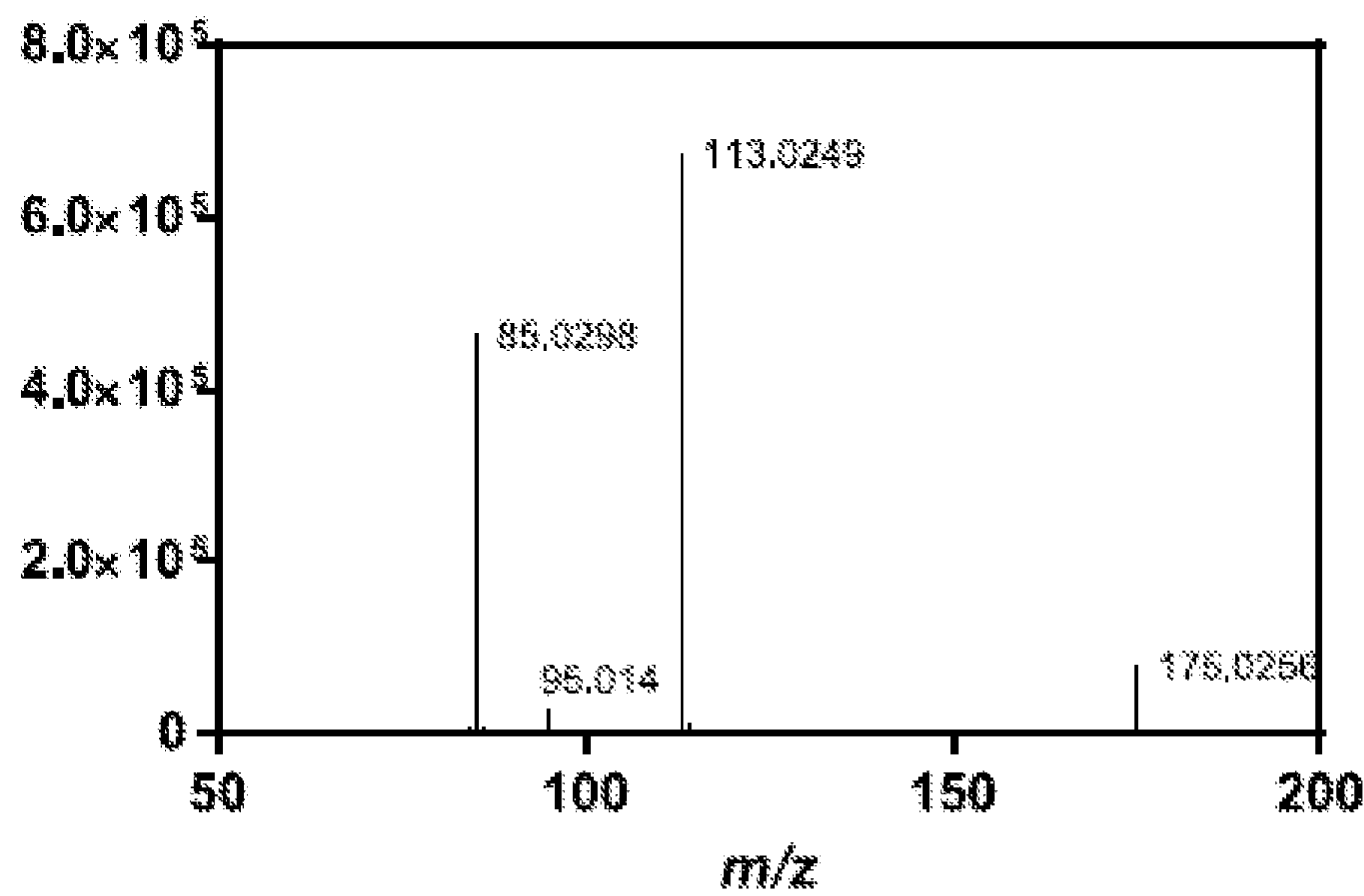


FIGURE 19B

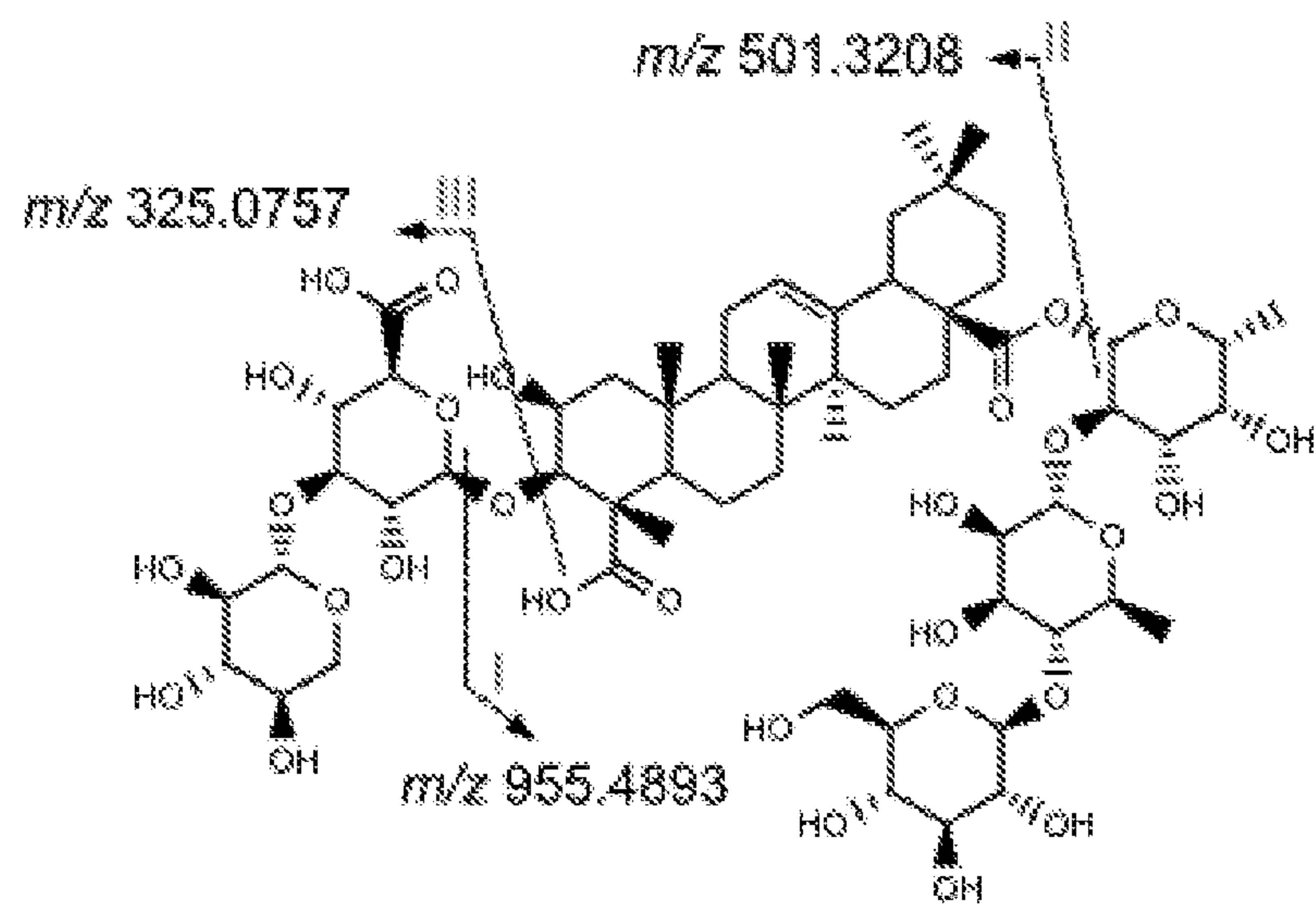


FIGURE 19C

m/z (observed)	Predicted formula	ion assignment	m/z (theoretical)	$\Delta m/z$ (ppm)
175.0256	C ₆ H ₇ O ₆	[GlcA-H ₂ O] ⁺	175.0246	7.4
113.0249	C ₅ H ₅ O ₃	[GlcA-2H ₂ O-CO ₂] ⁺	113.0239	8.8
95.0140	C ₅ H ₃ O ₂	[GlcA-3H ₂ O-CO ₂] ⁺	95.0133	7.4
85.0298	C ₄ H ₅ O ₂	[GlcA-2H ₂ O-CO ₂ -CO] ⁺	85.0290	9.4

FIGURE 19D

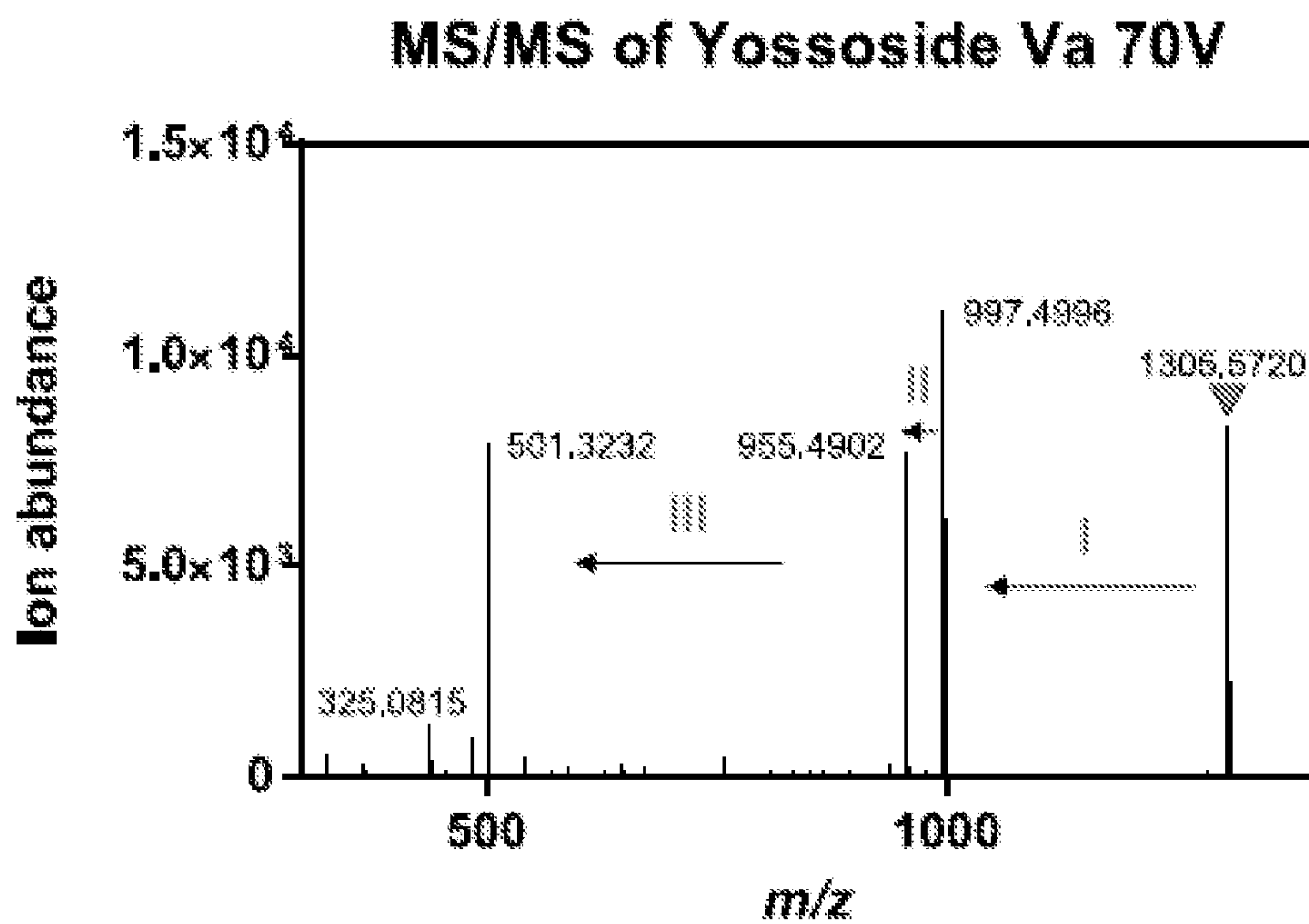


FIGURE 19E

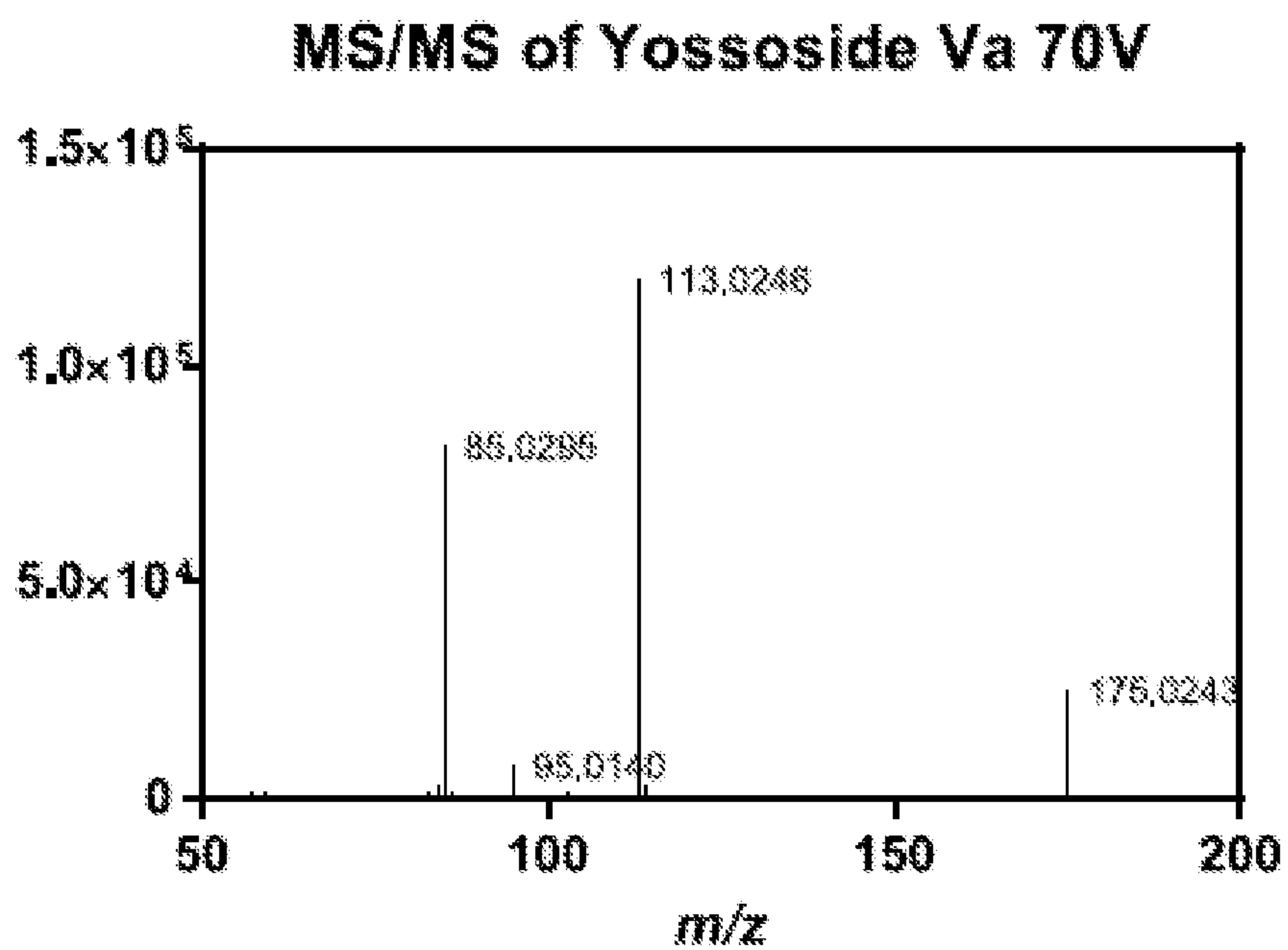


FIGURE 19F

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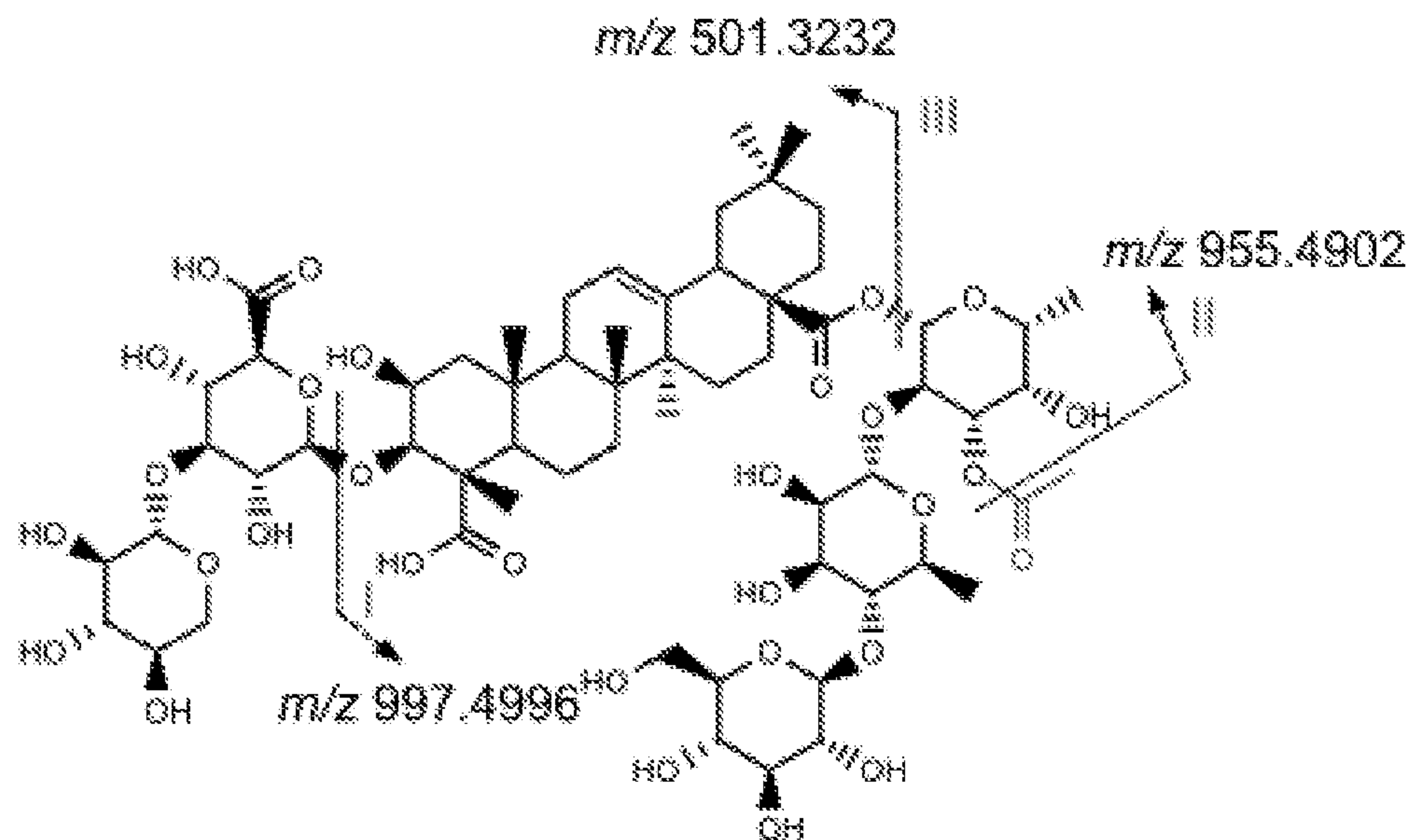


FIGURE 19G

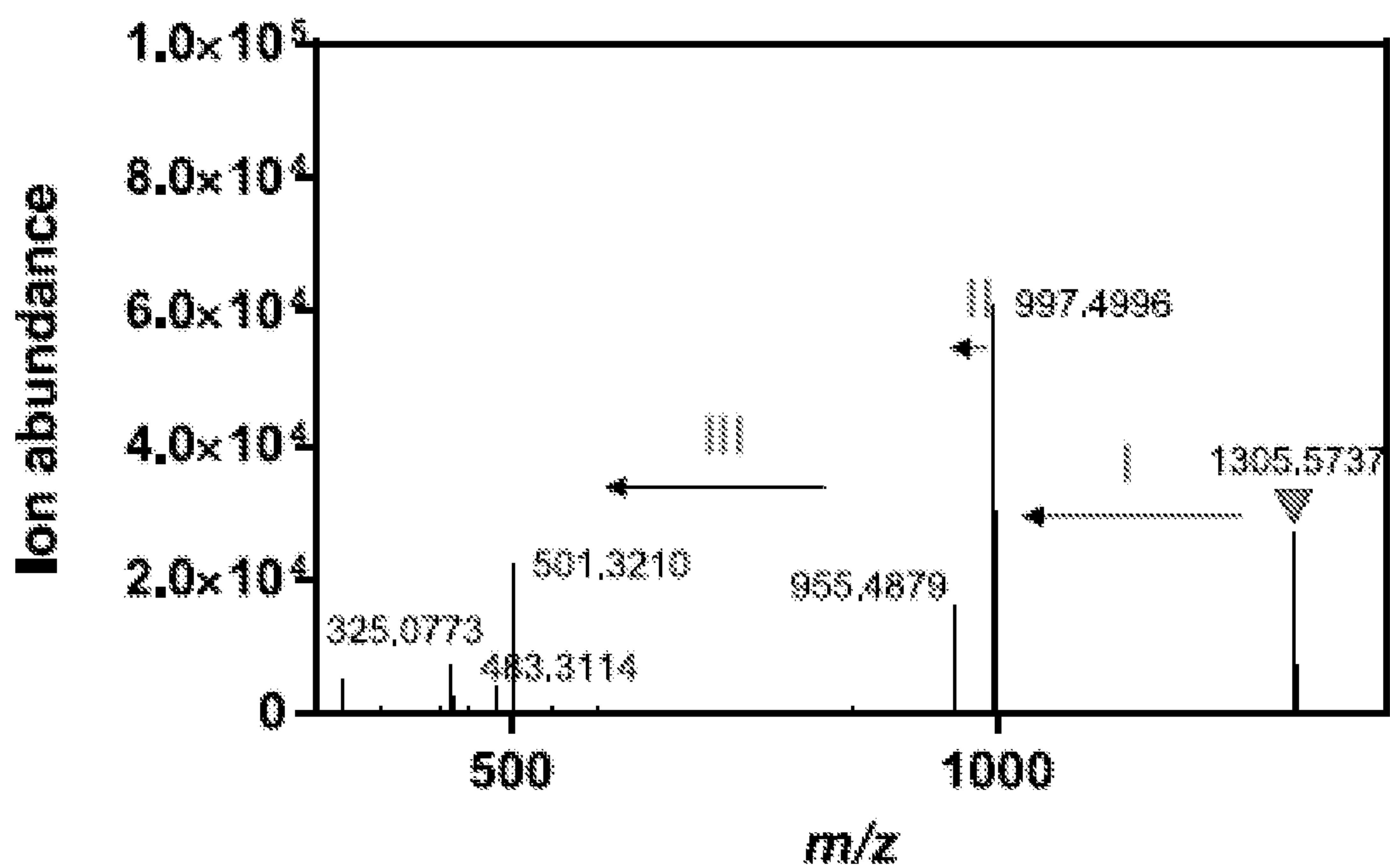
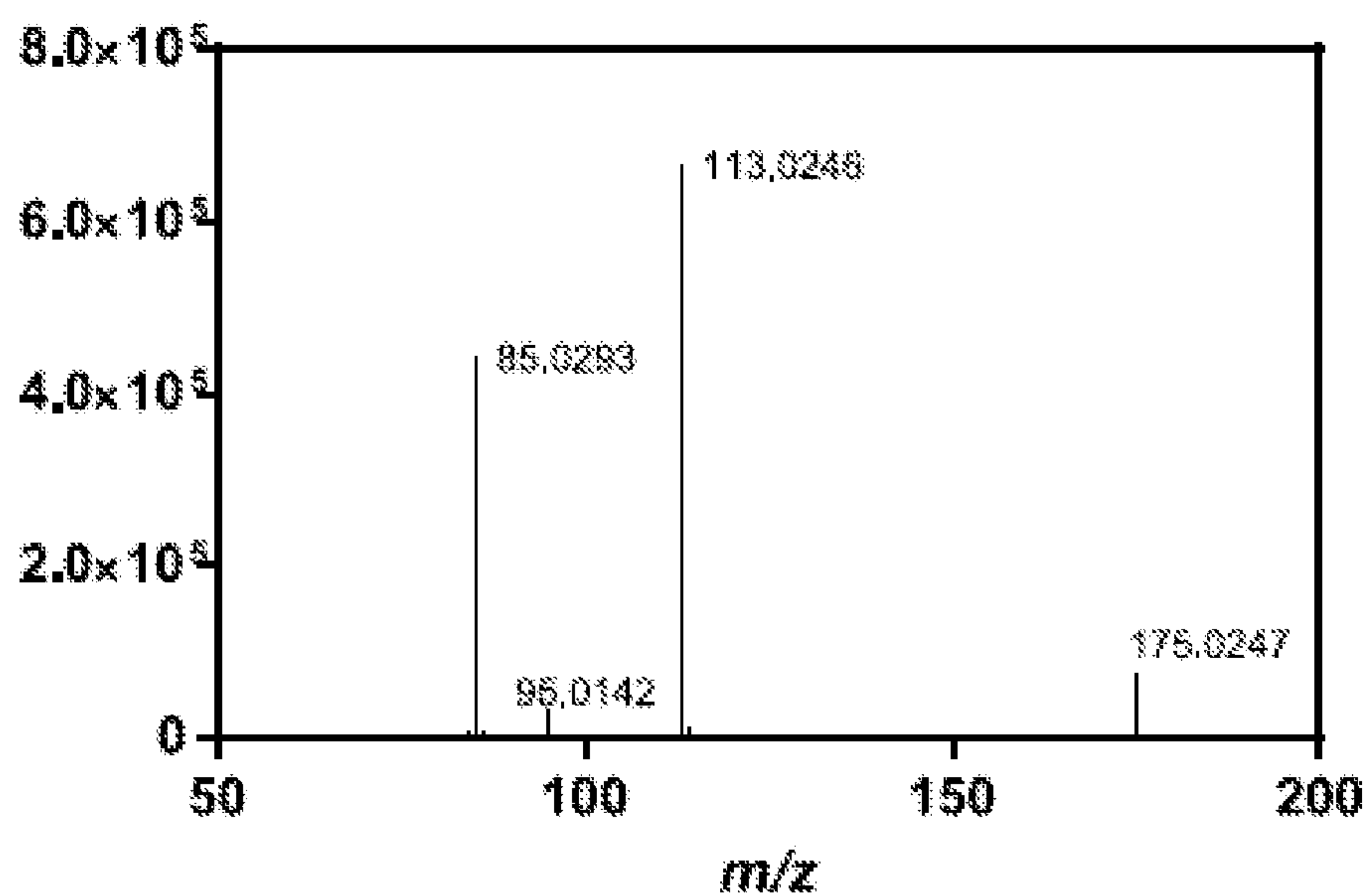
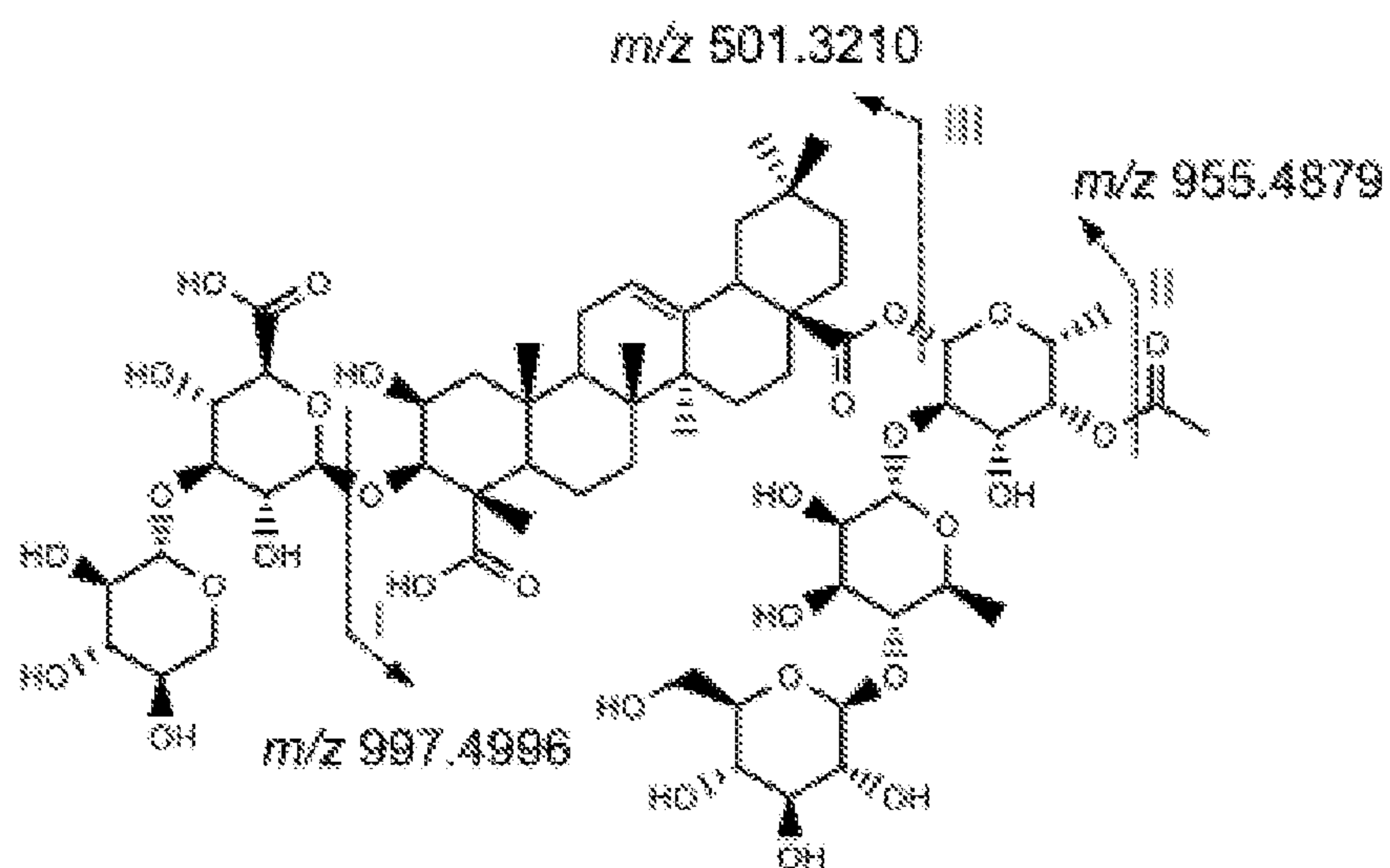
MS/MS of Yossoside V 70V

FIGURE 19H

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MS/MS of Yossoside V 70V**FIGURE 19I****FIGURE 19J**

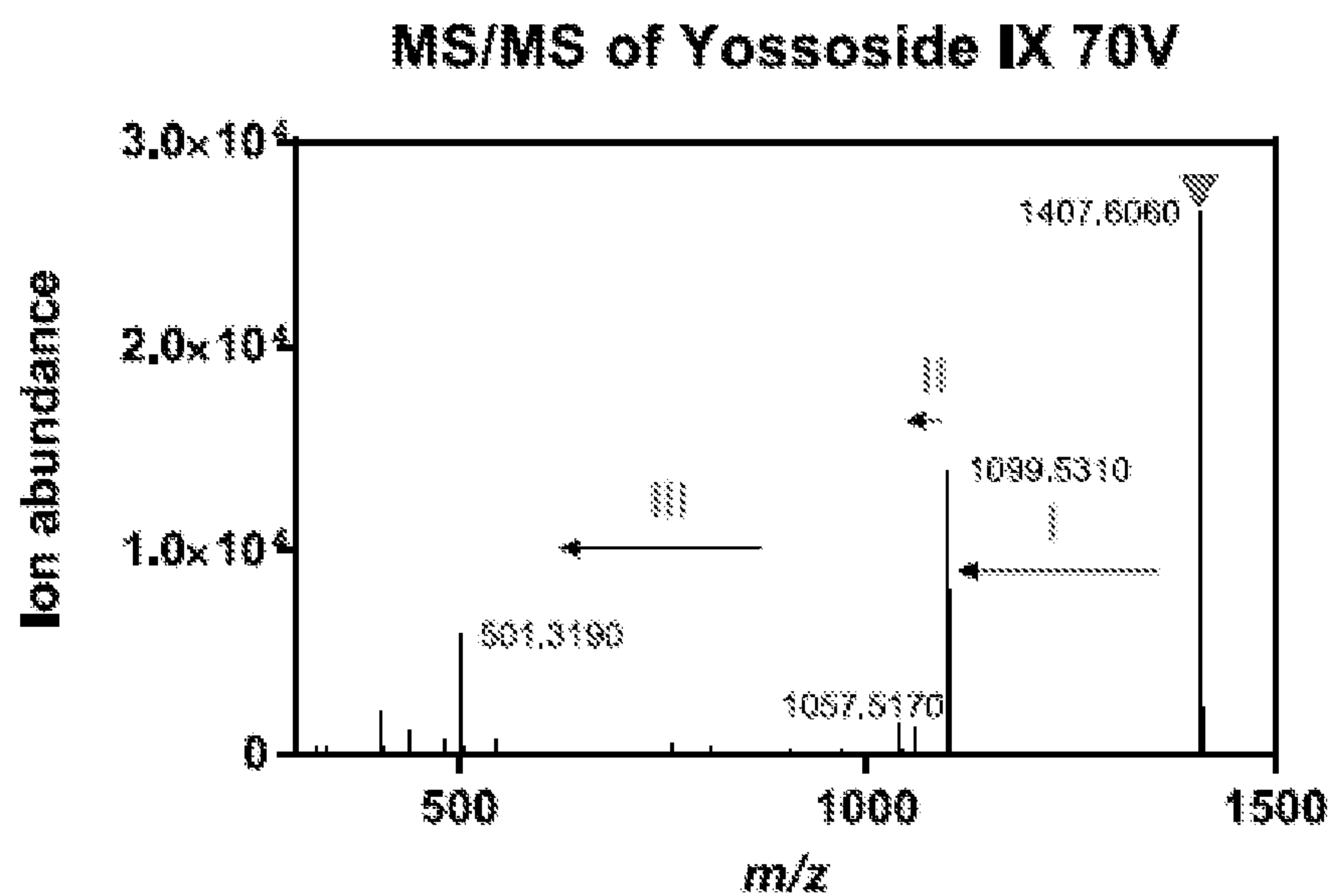


FIGURE 19K

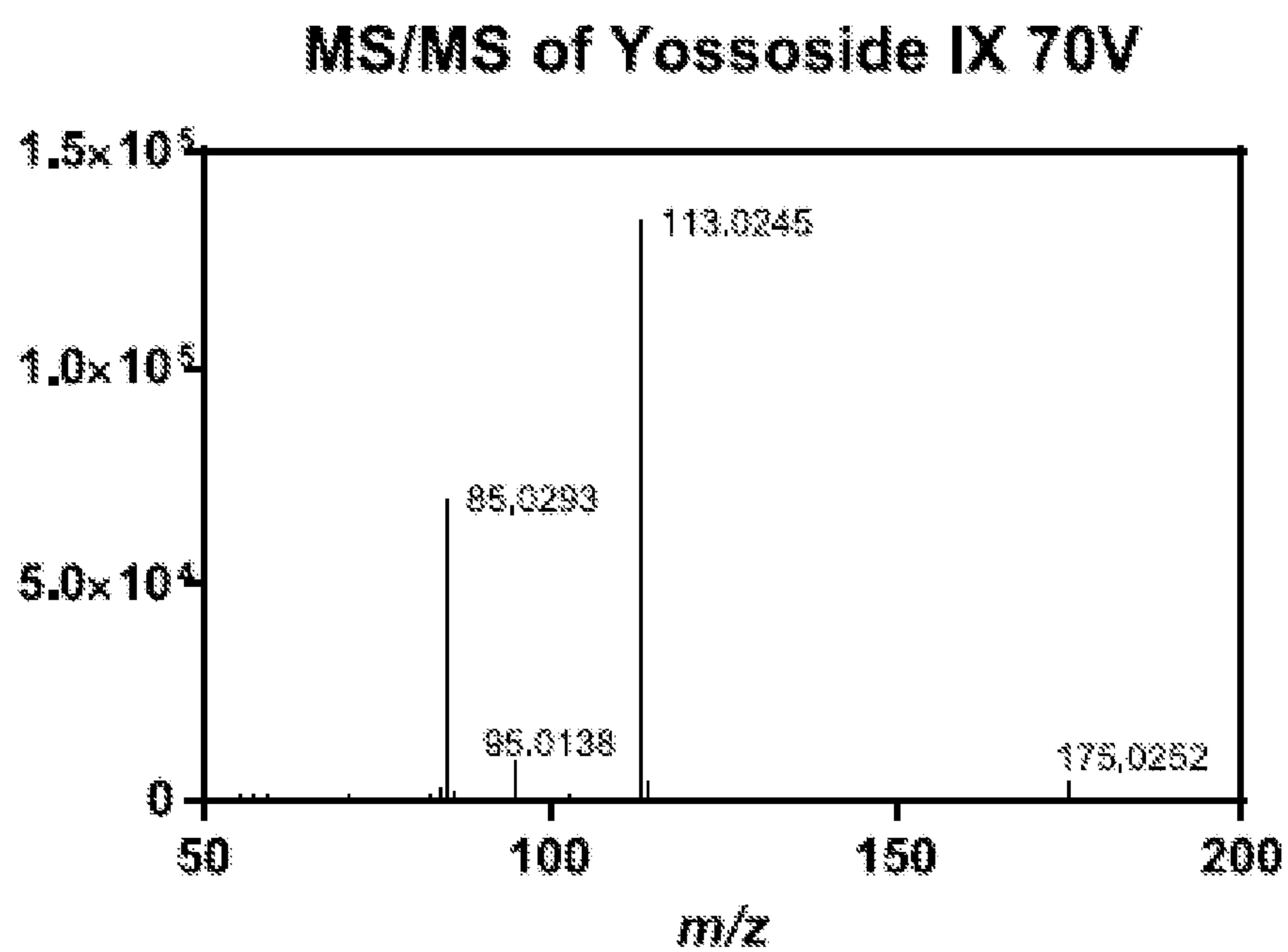


FIGURE 19L

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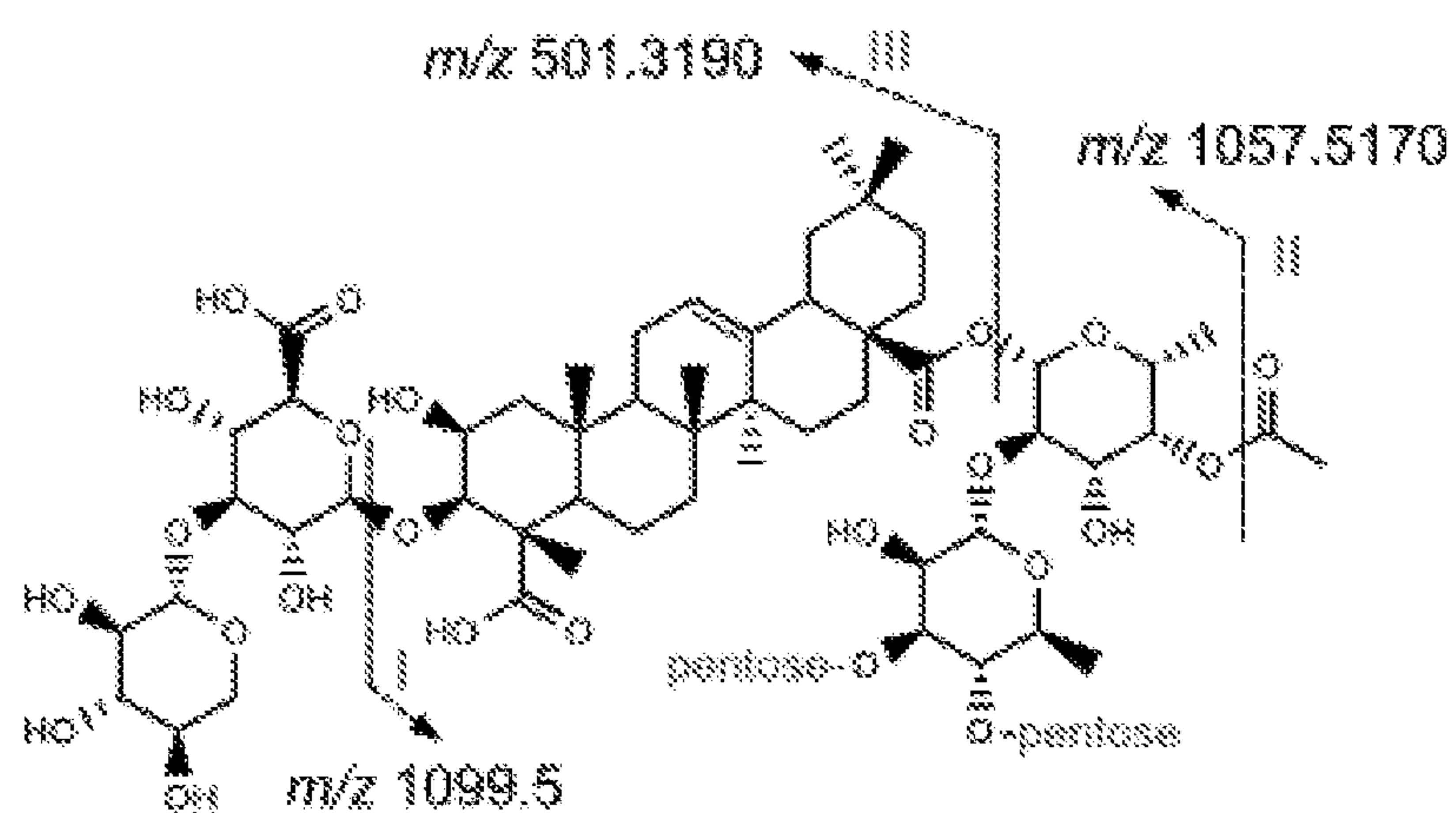


FIGURE 19M

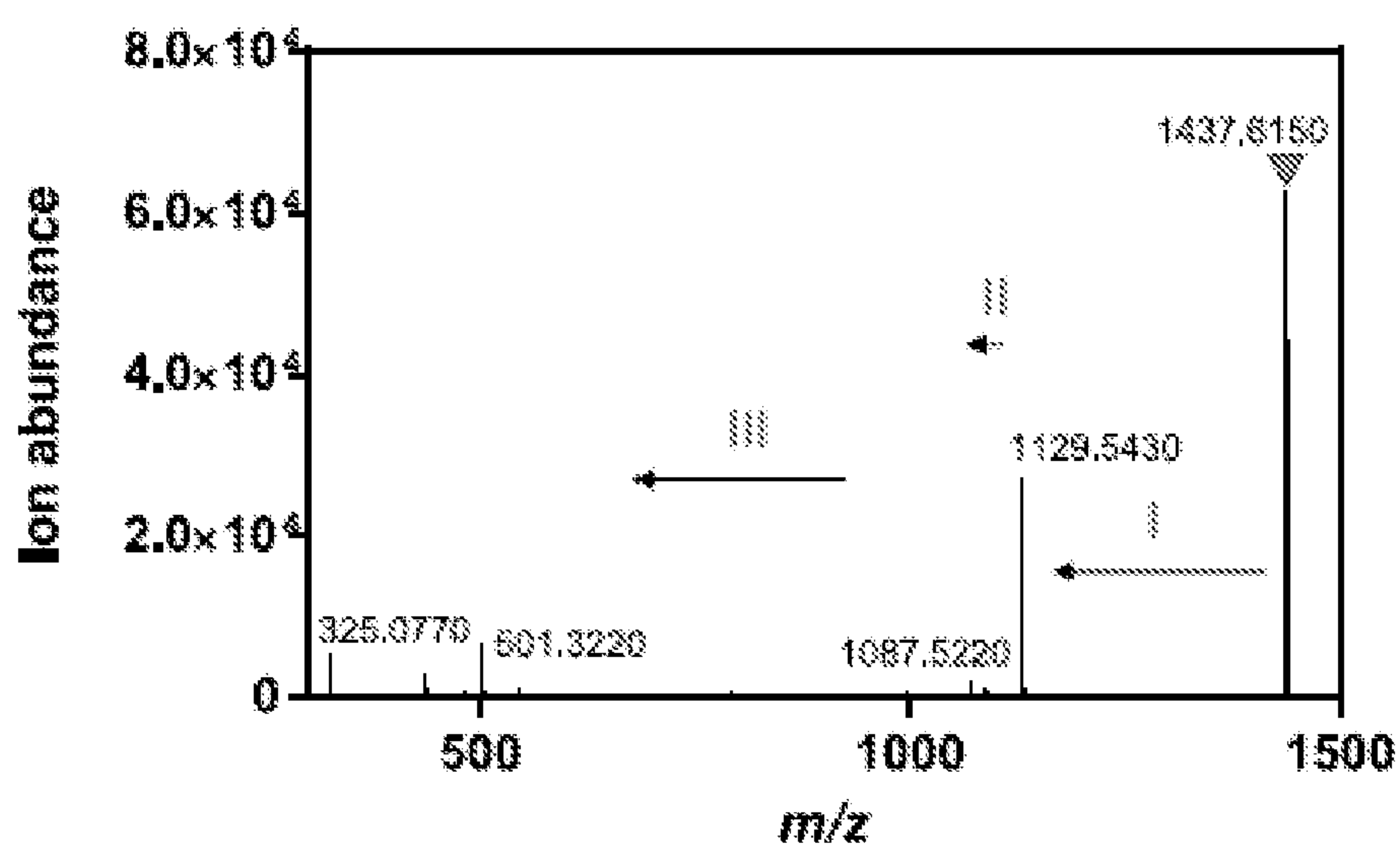
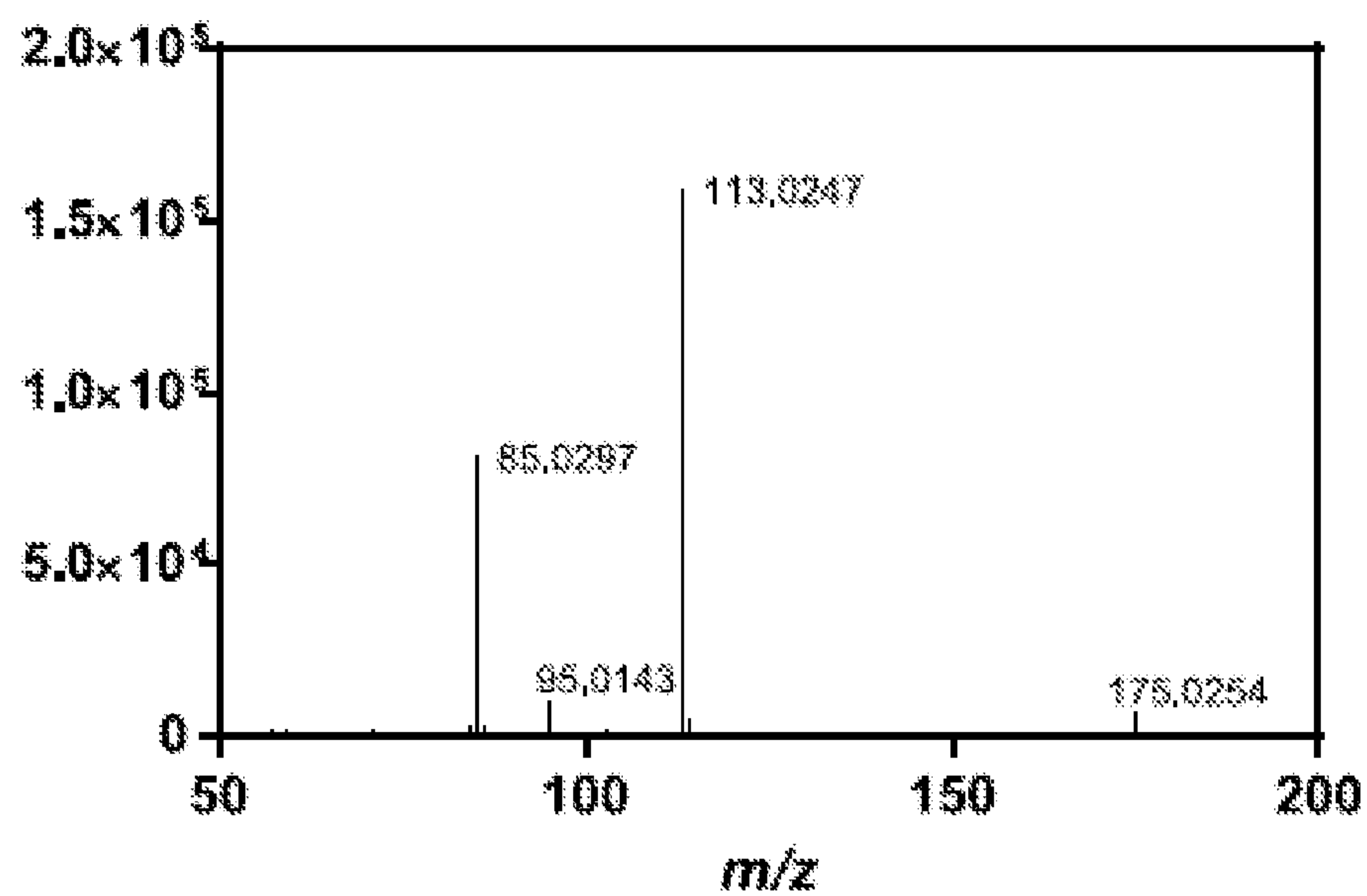
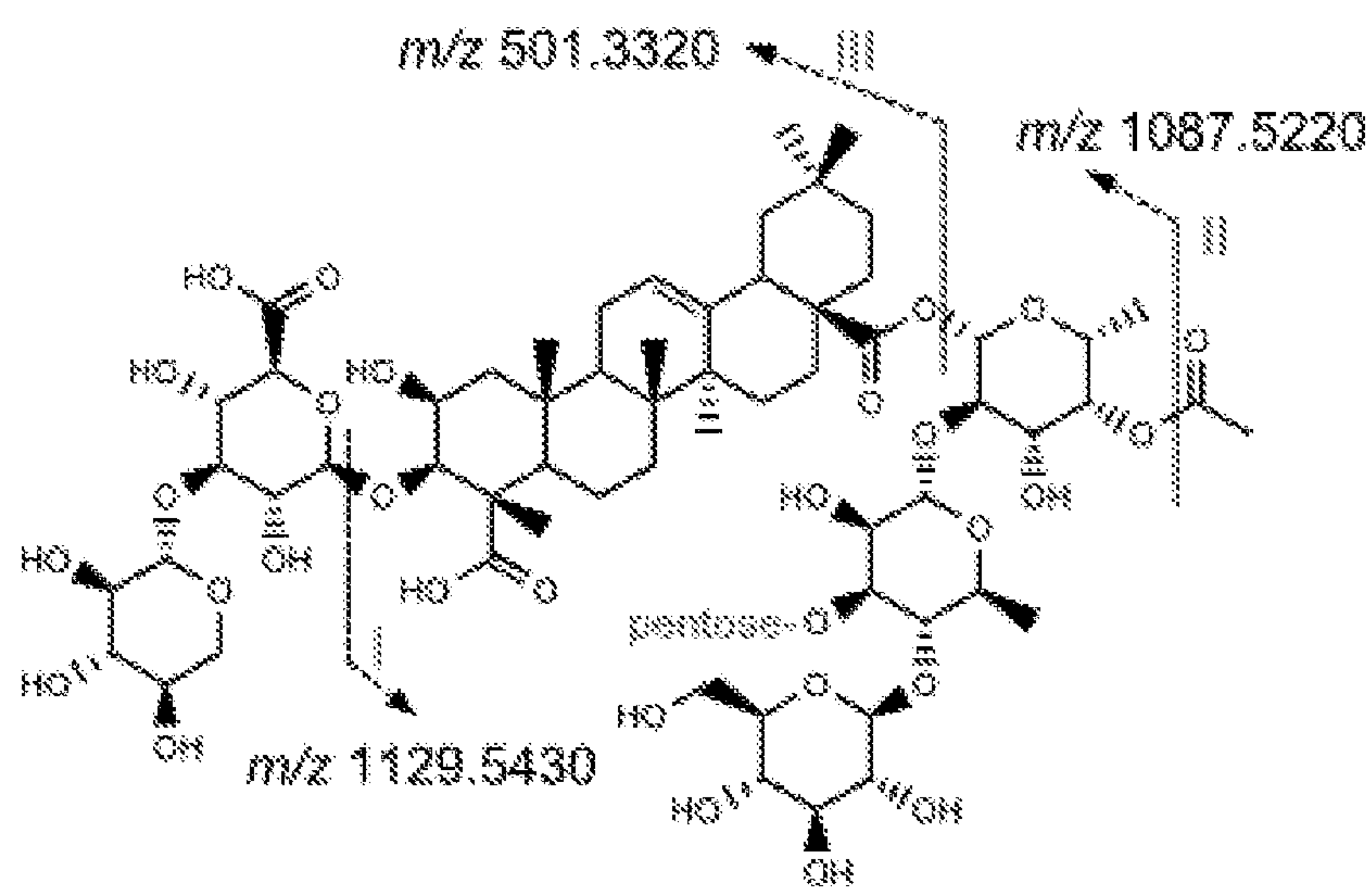
MS/MS of Yossoside X 70V

FIGURE 19N

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MS/MS of Yossoside X 70V**FIGURE 19O****FIGURE 19P**

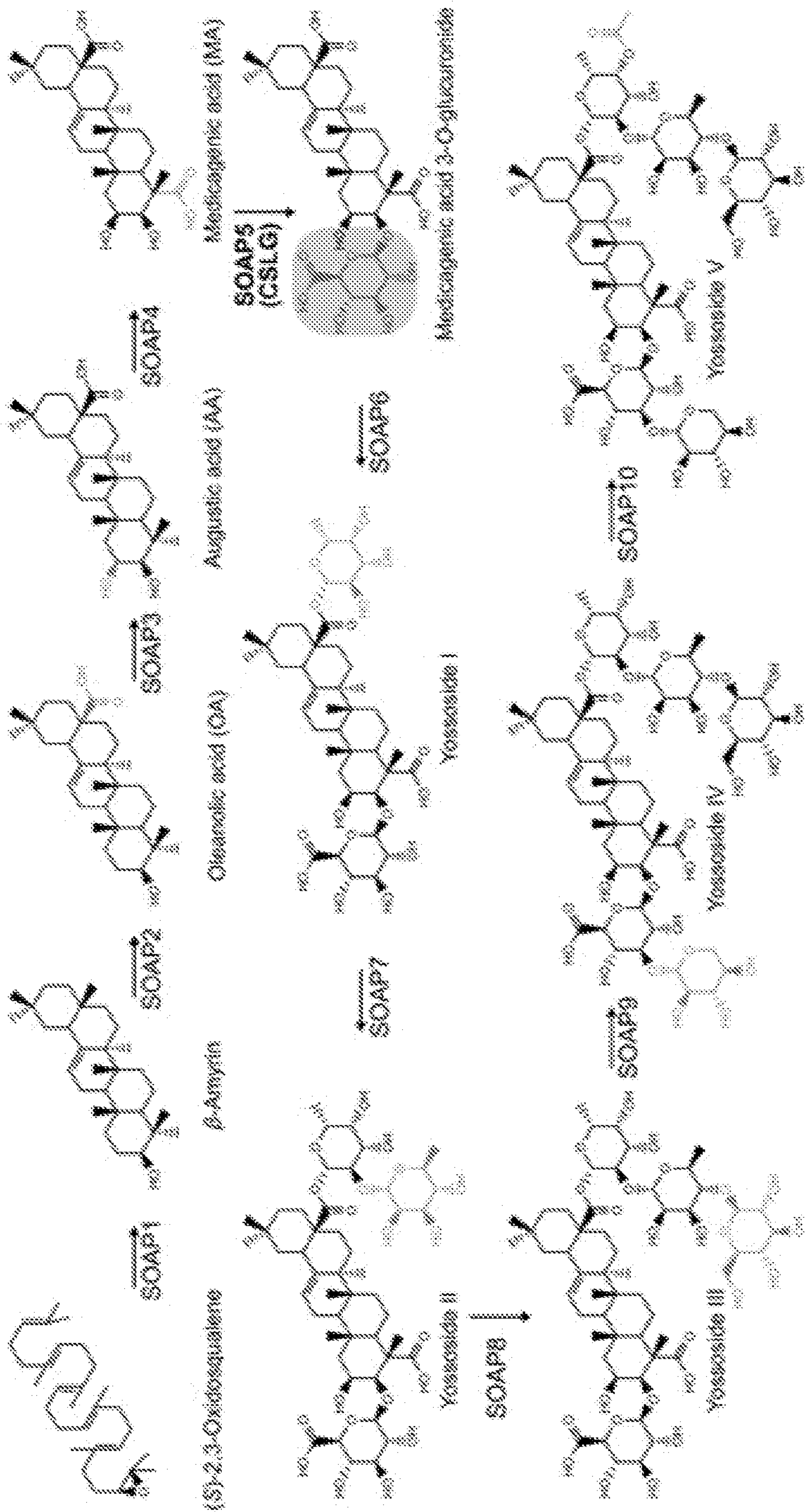


FIGURE 20A

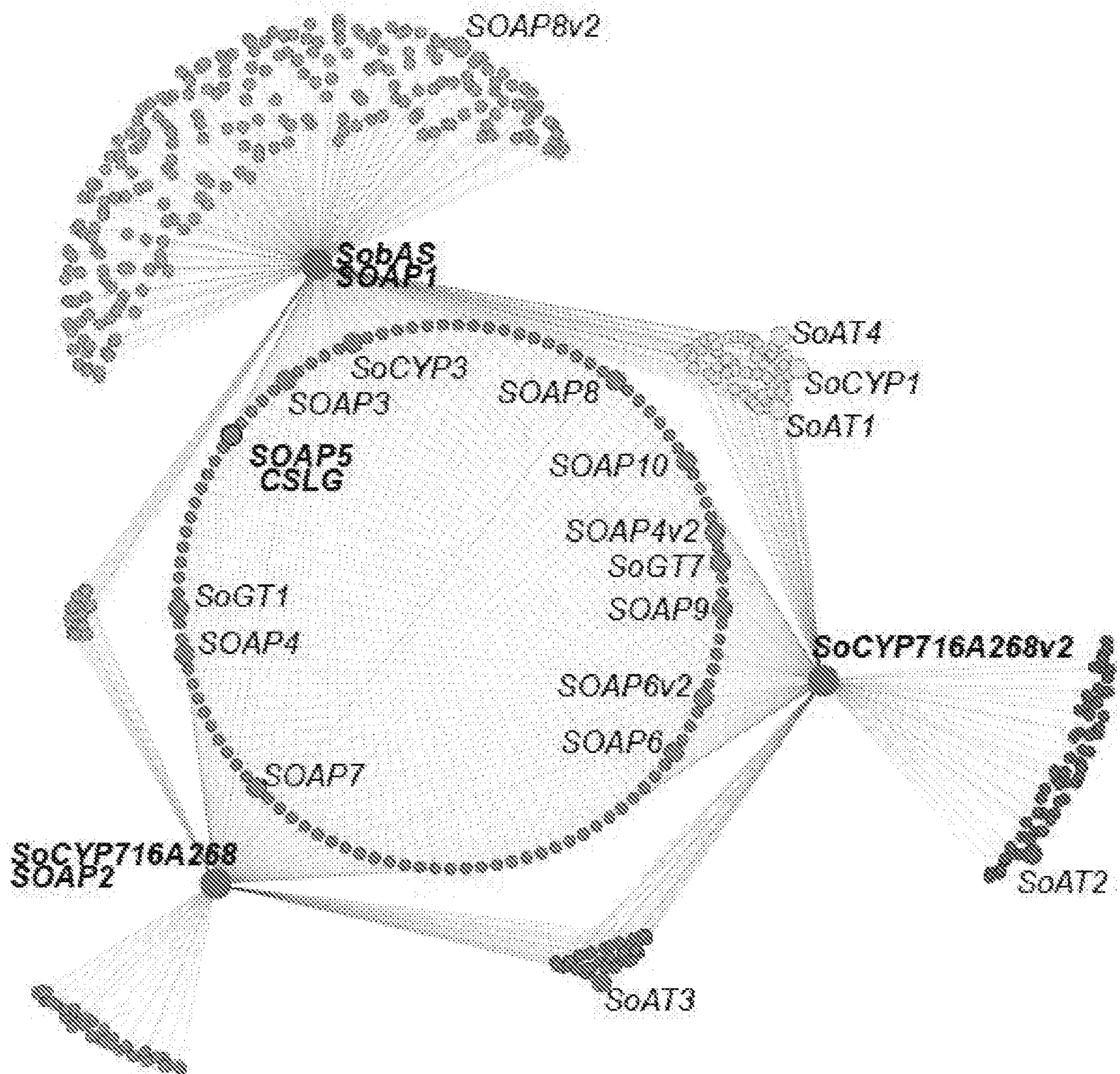


FIGURE 20B

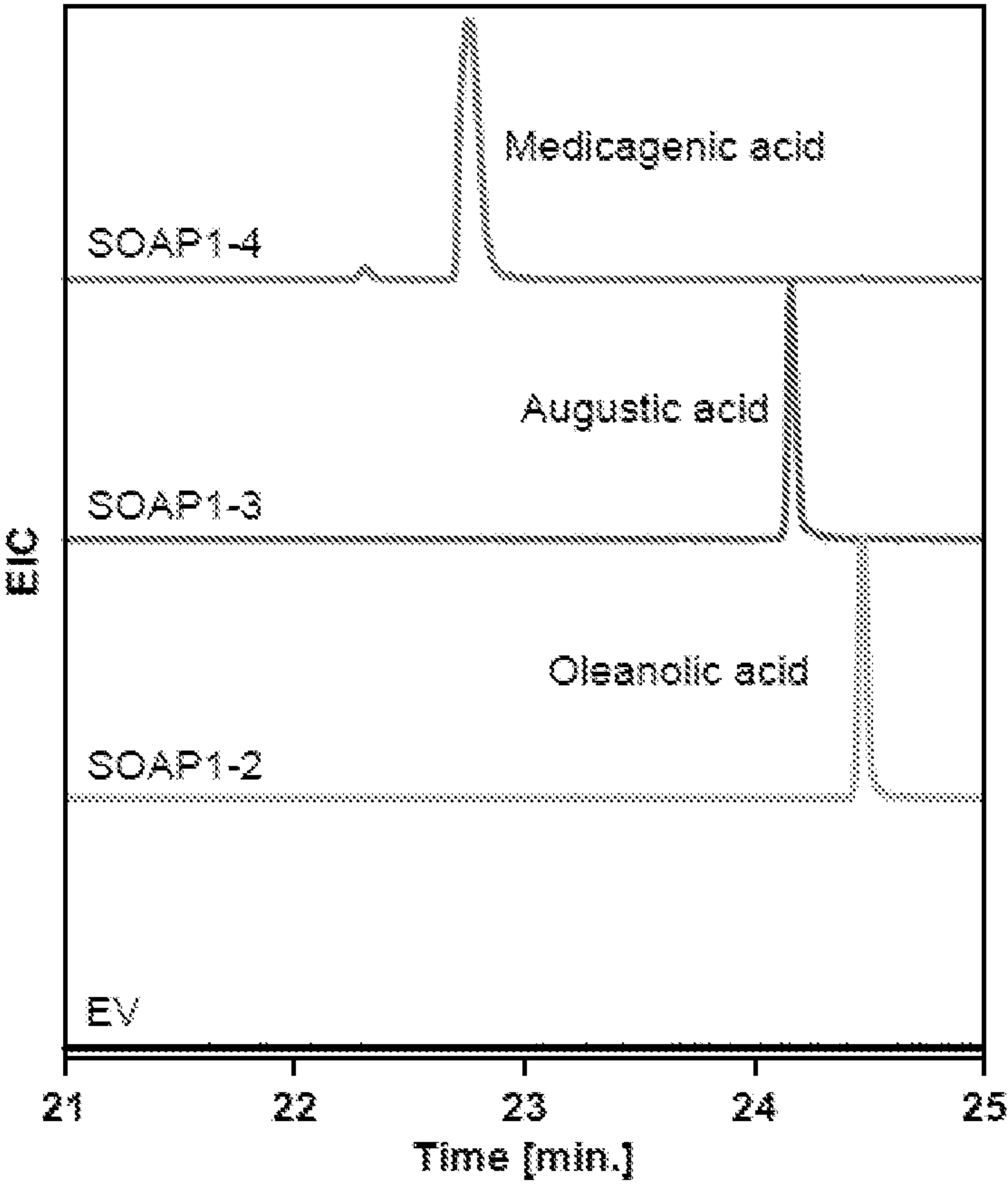


FIGURE 20C

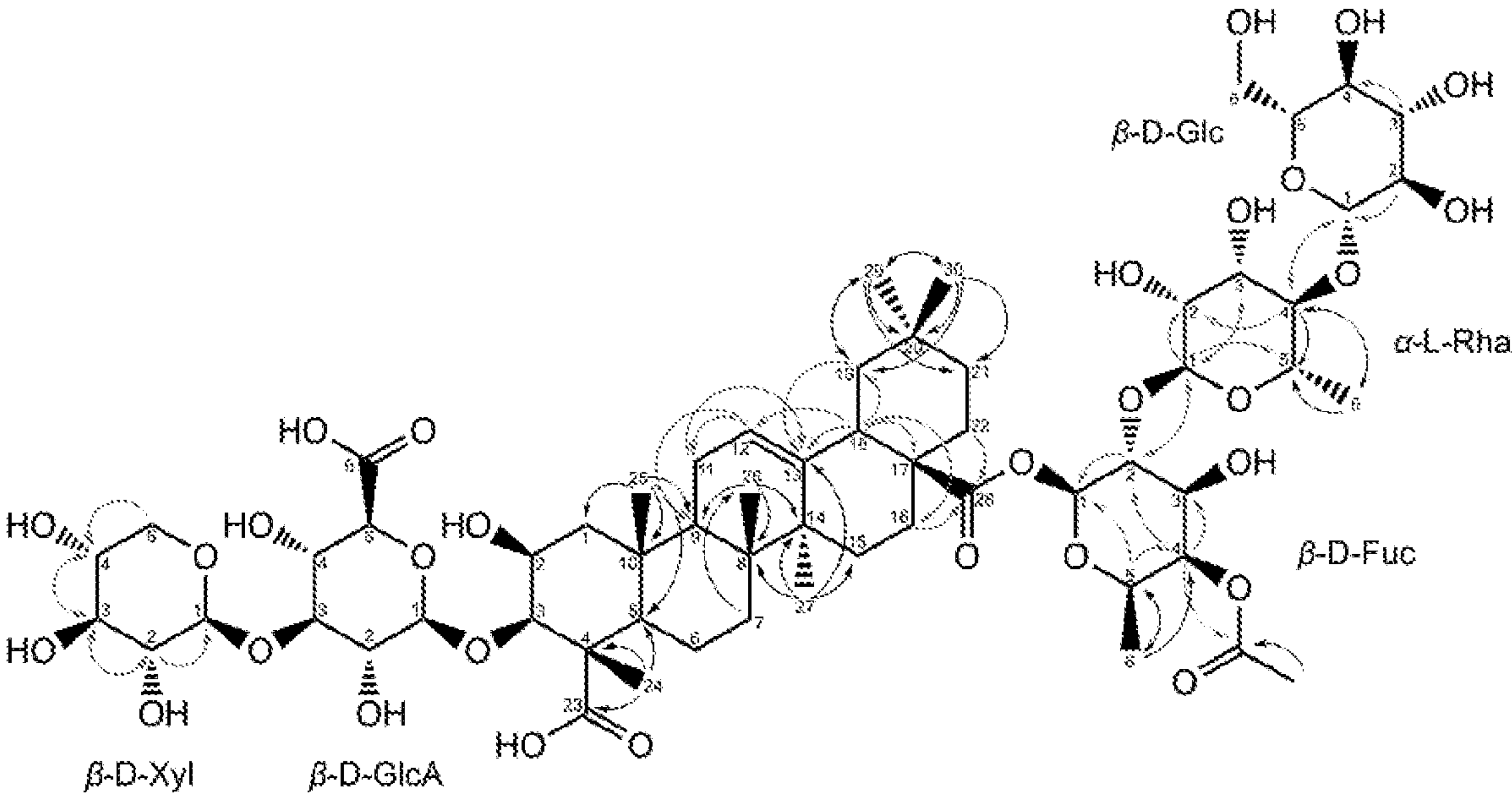


FIGURE 21

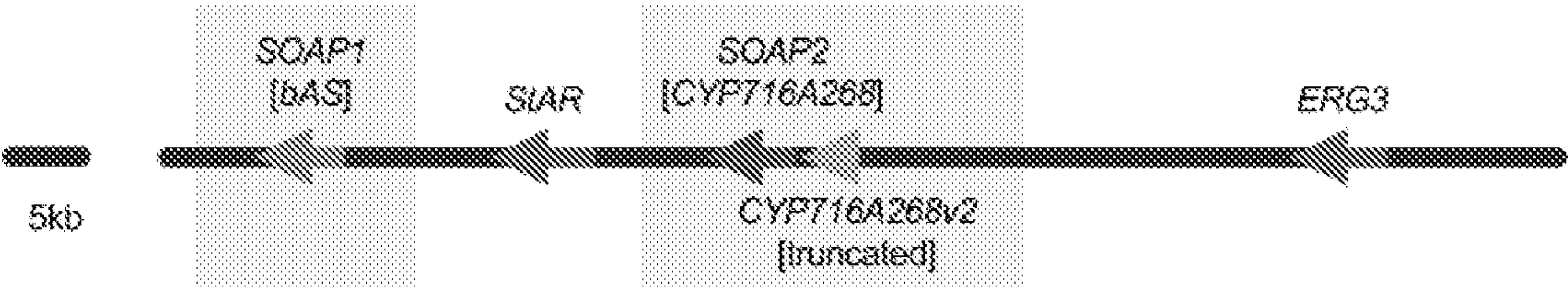


FIGURE 22A

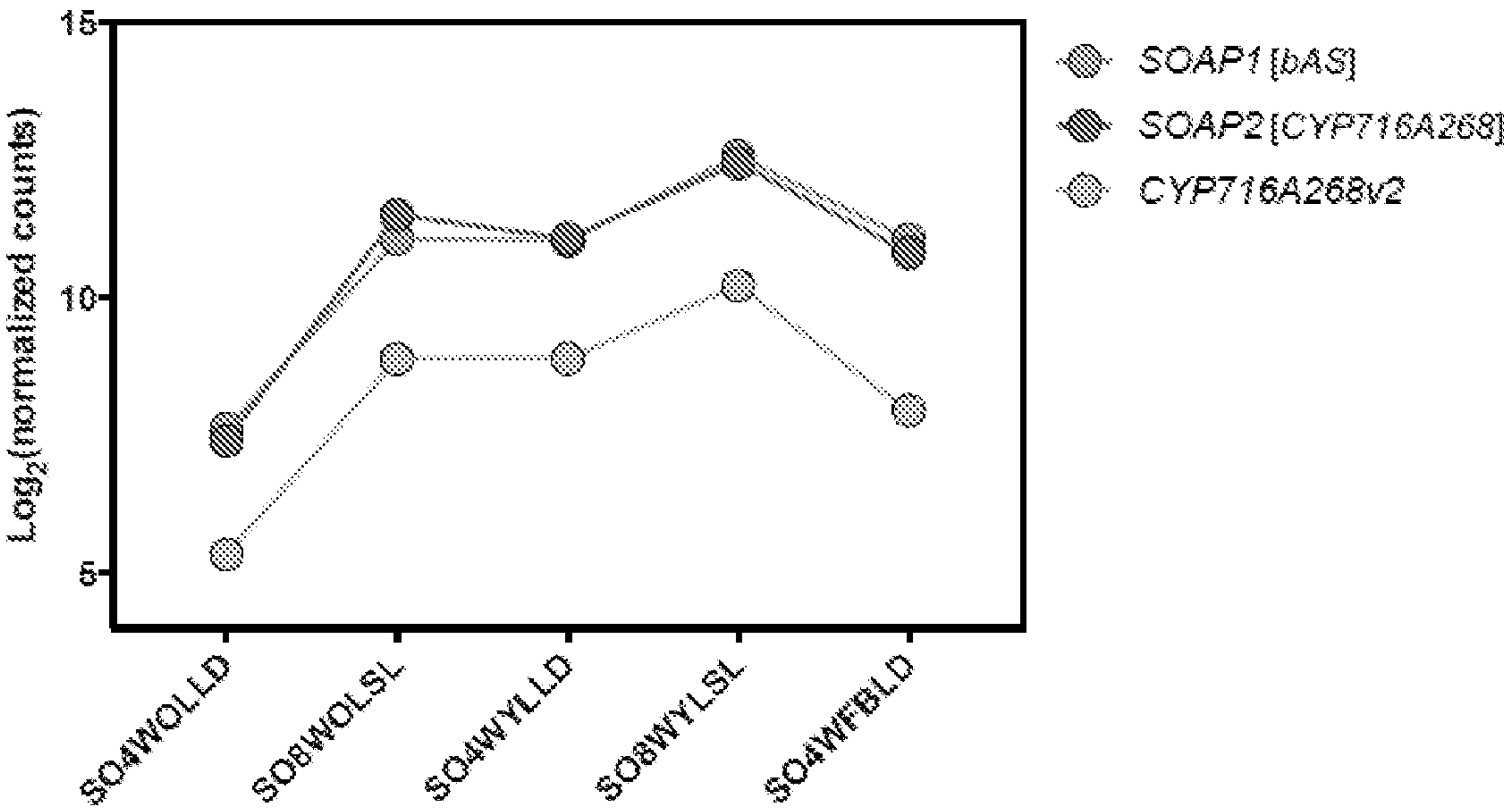


FIGURE 22B

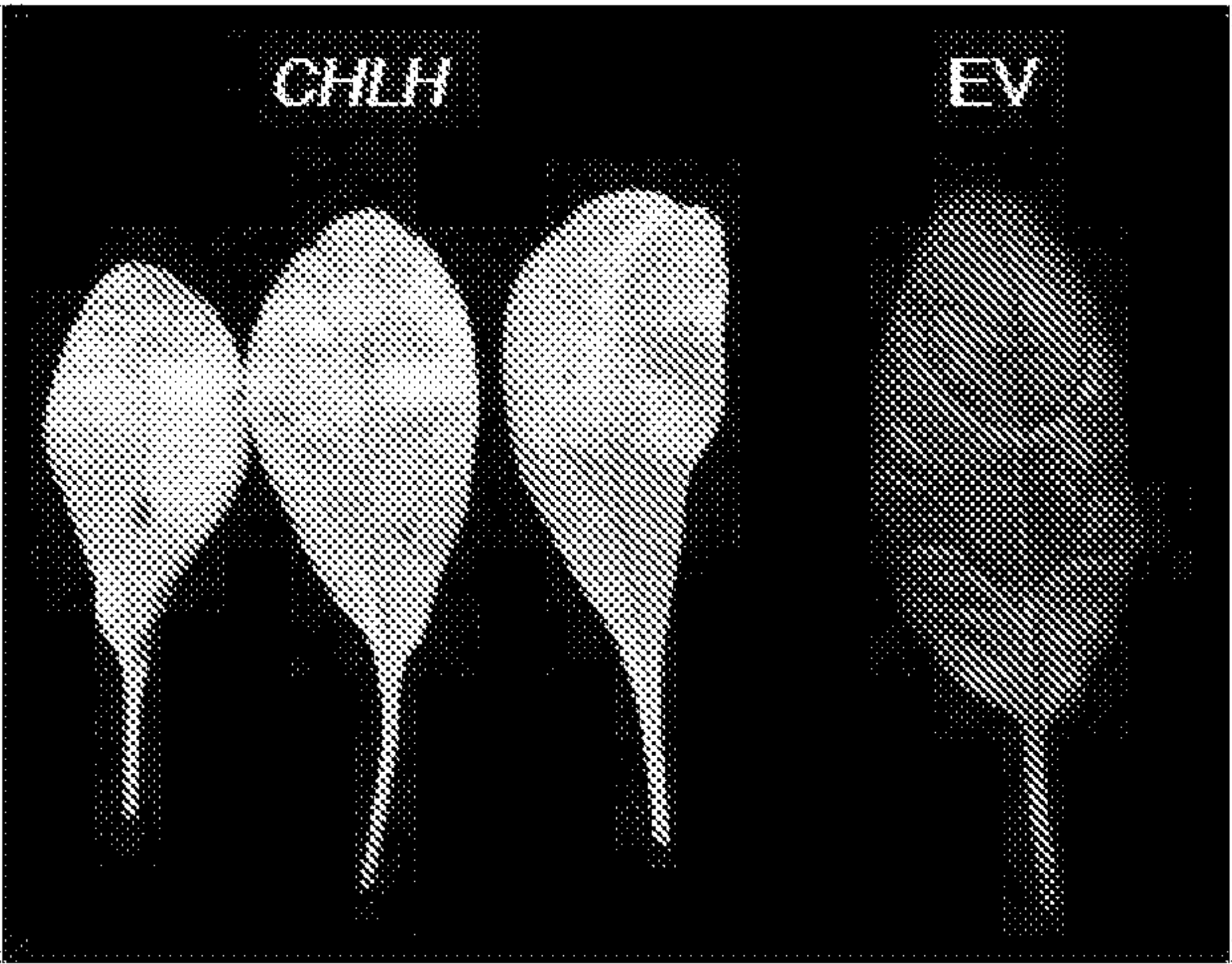


FIGURE 23A

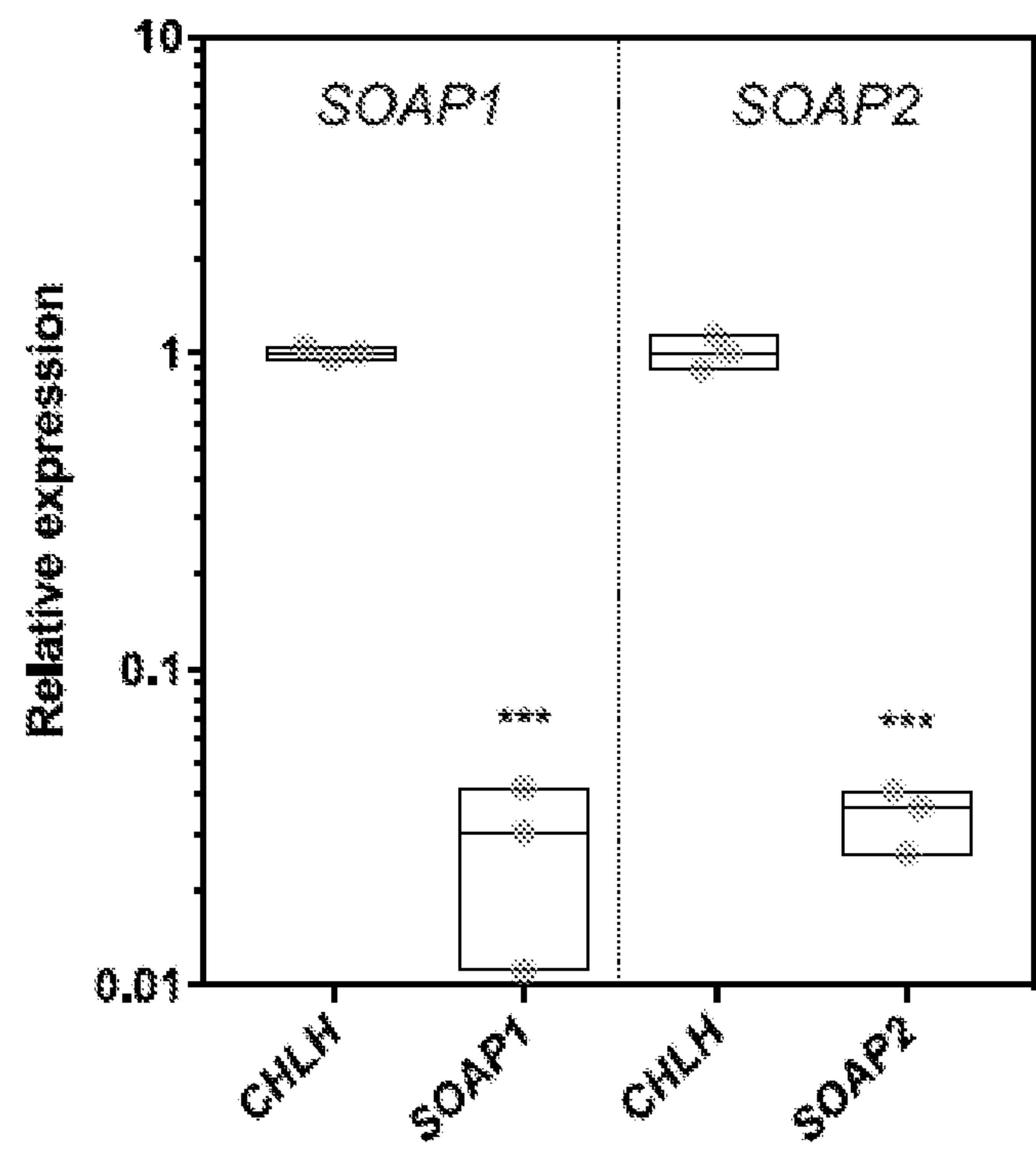


FIGURE 23B

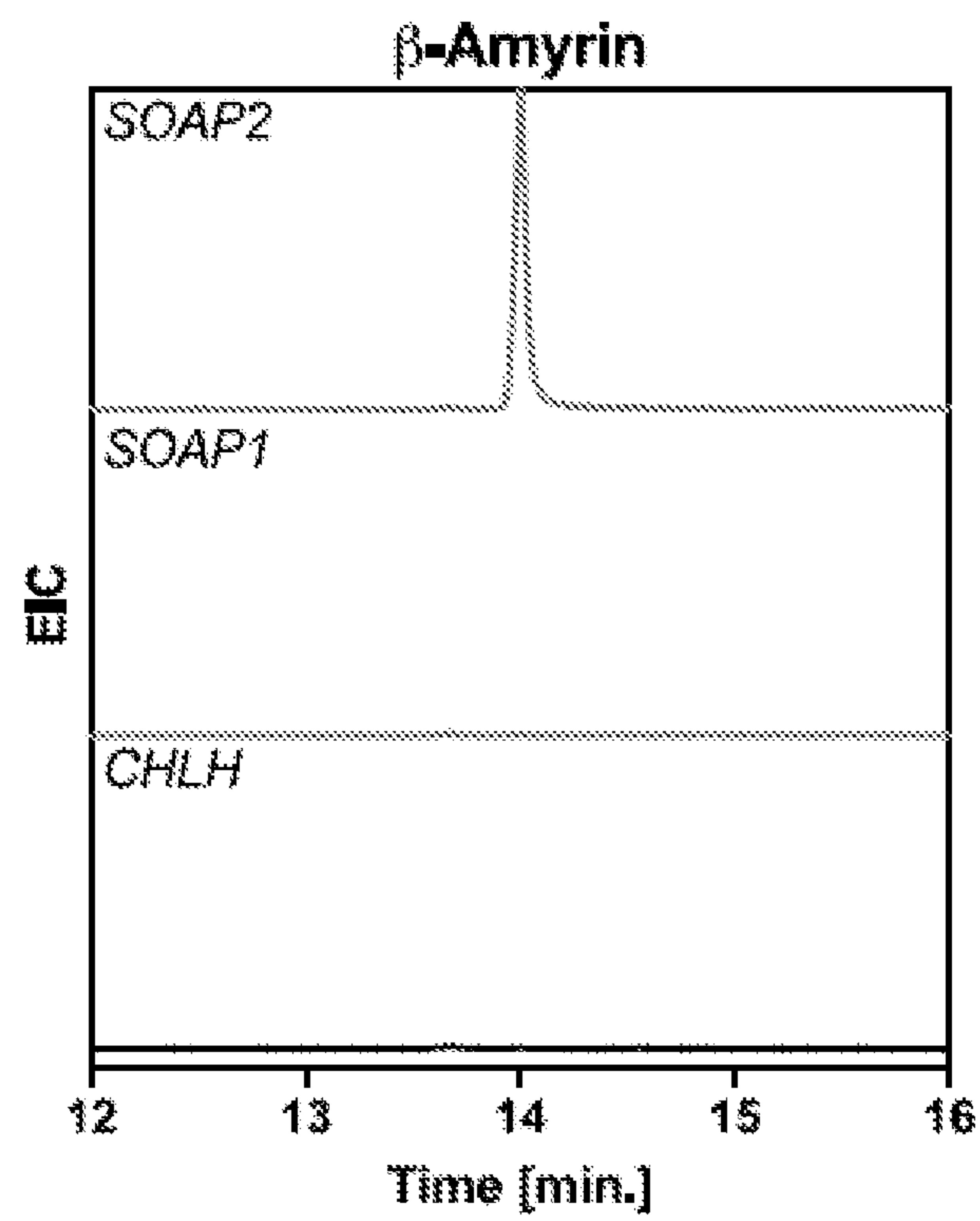


FIGURE 23C

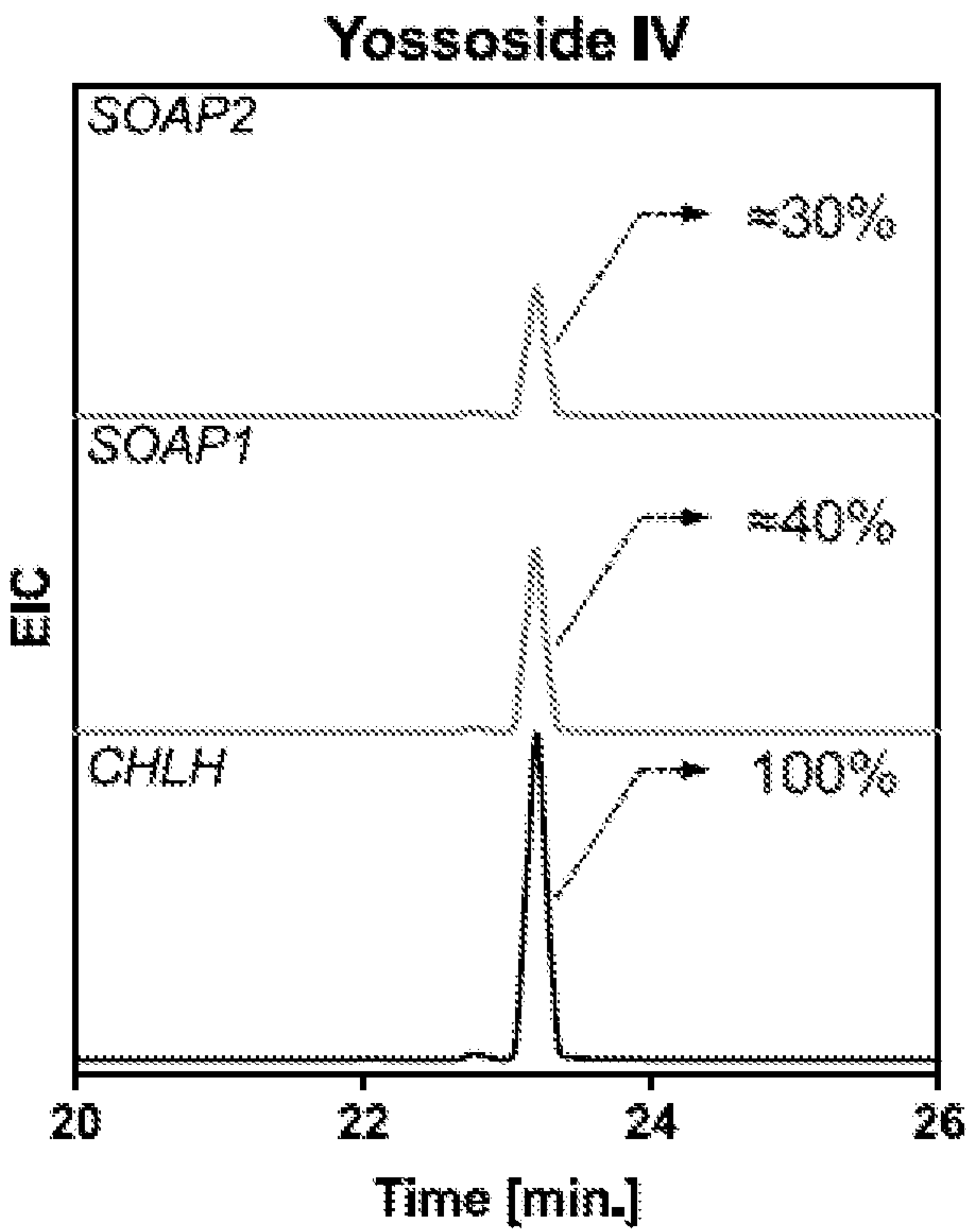


FIGURE 23D

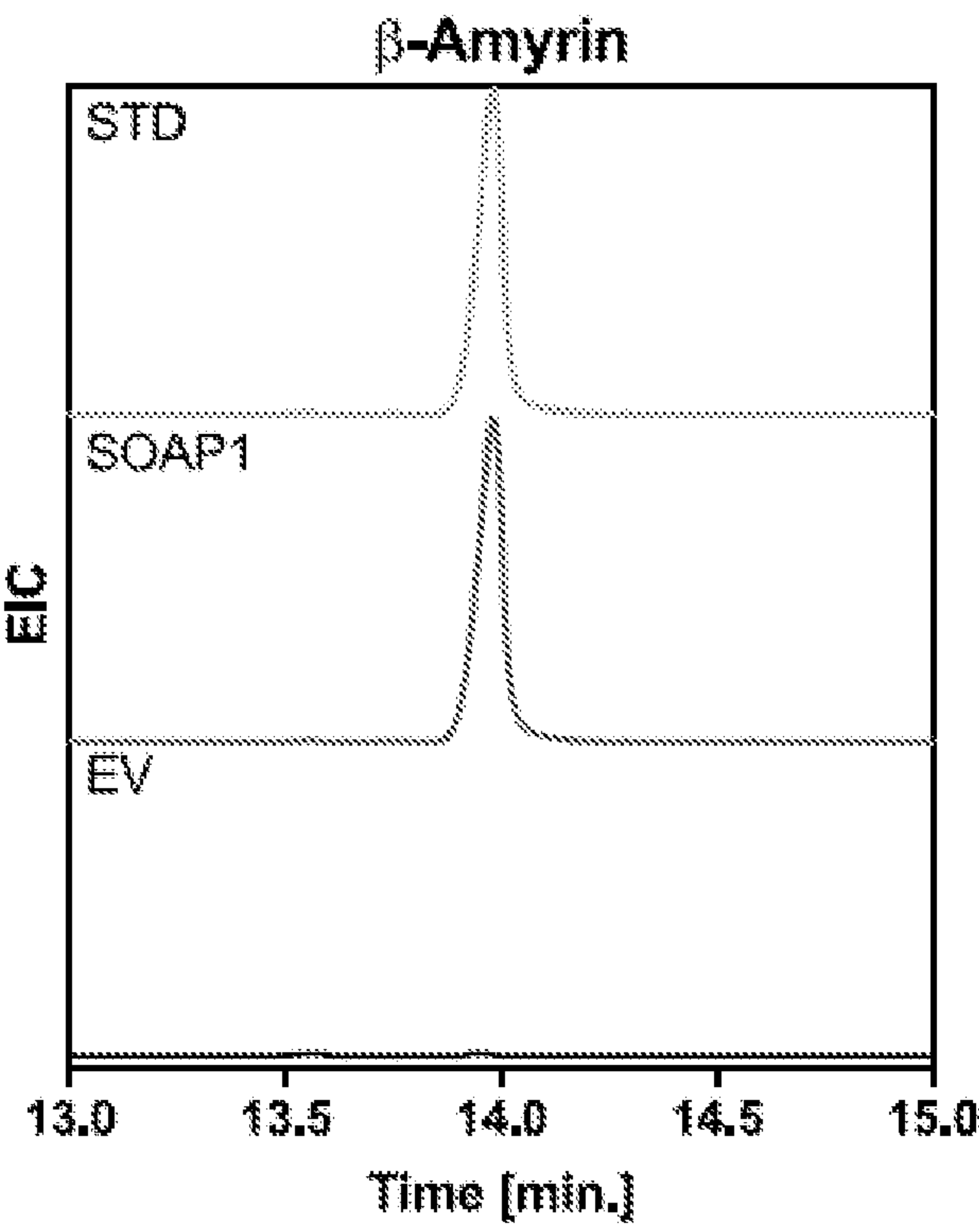


FIGURE 24A

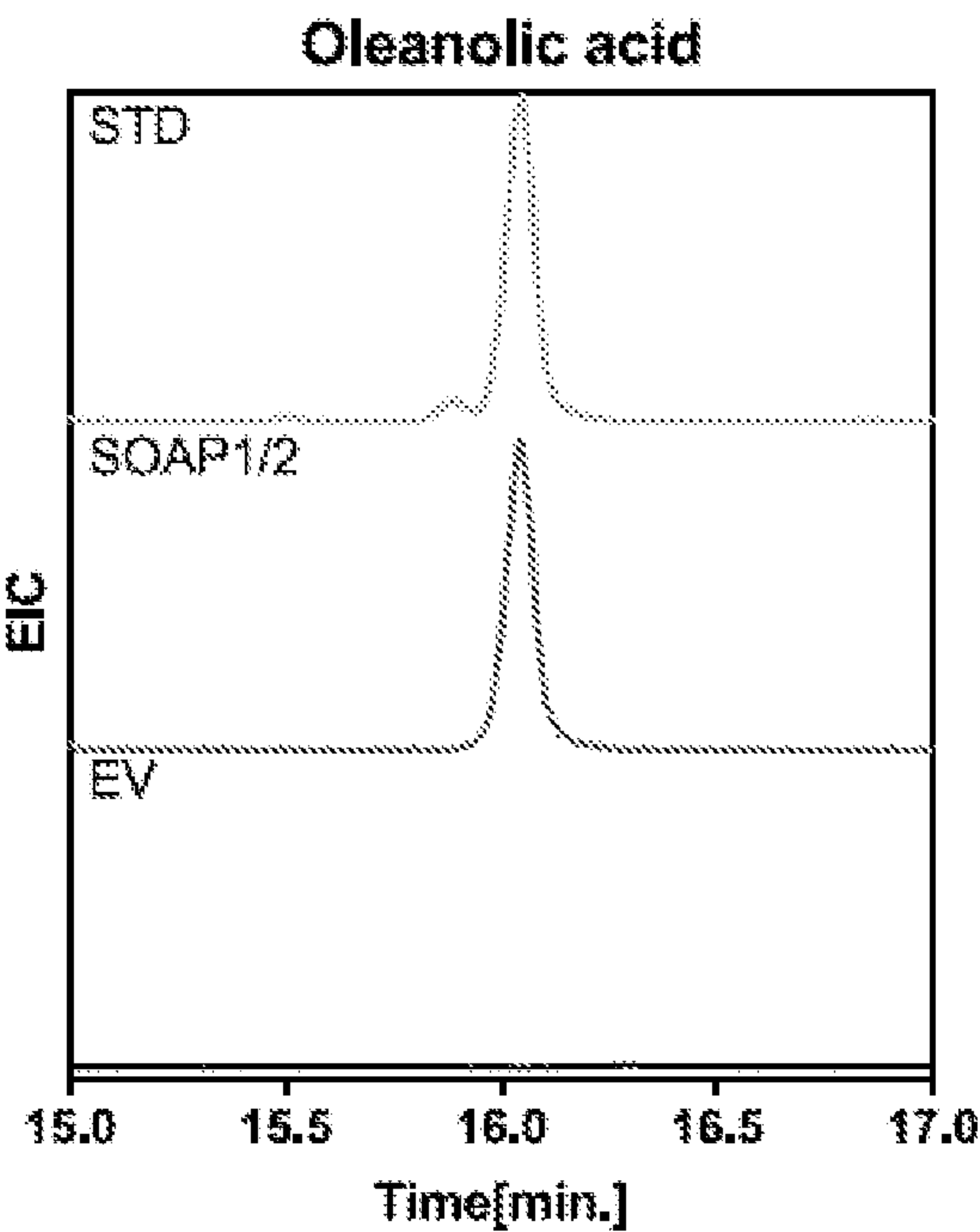


FIGURE 24B

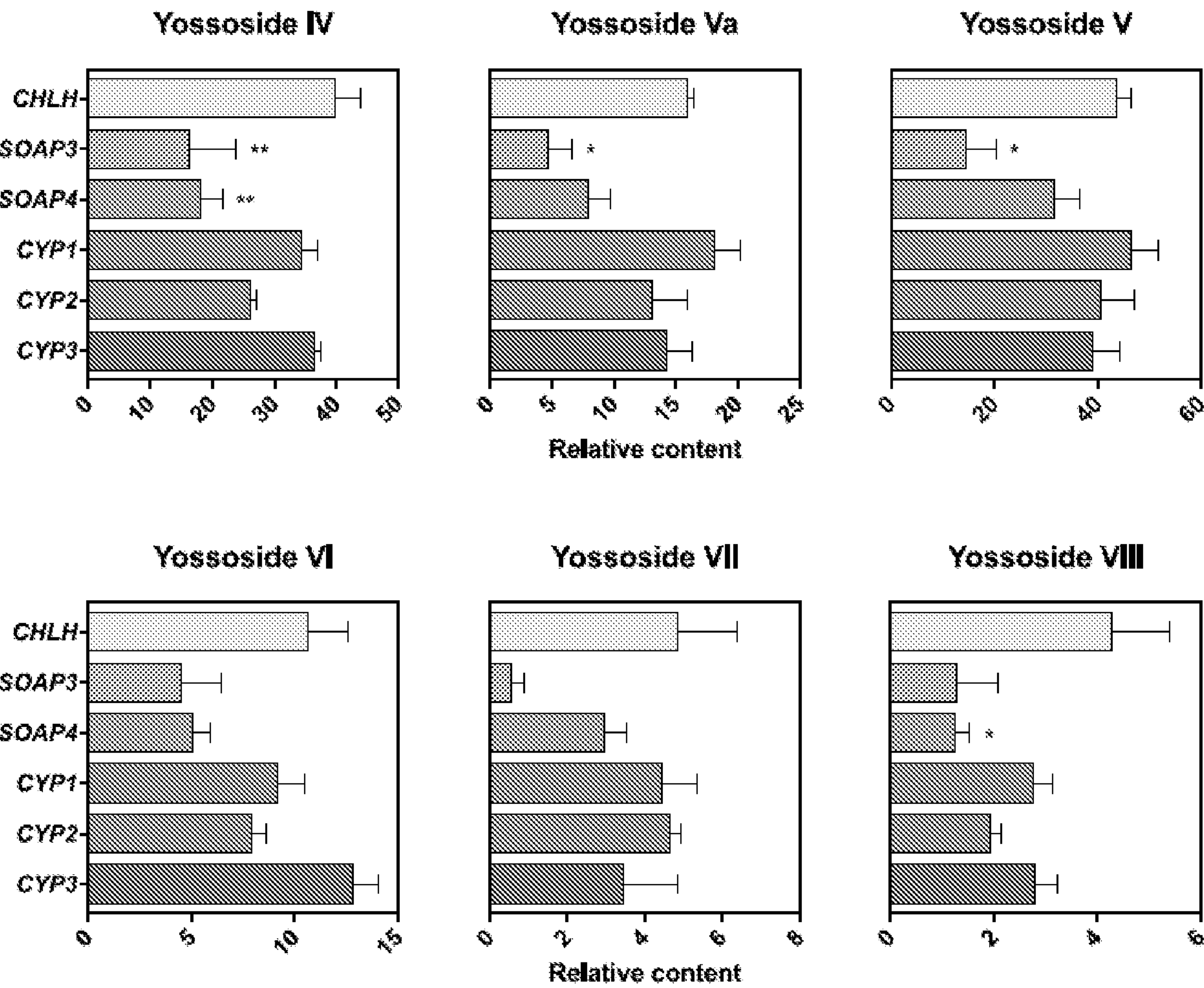


FIGURE 25

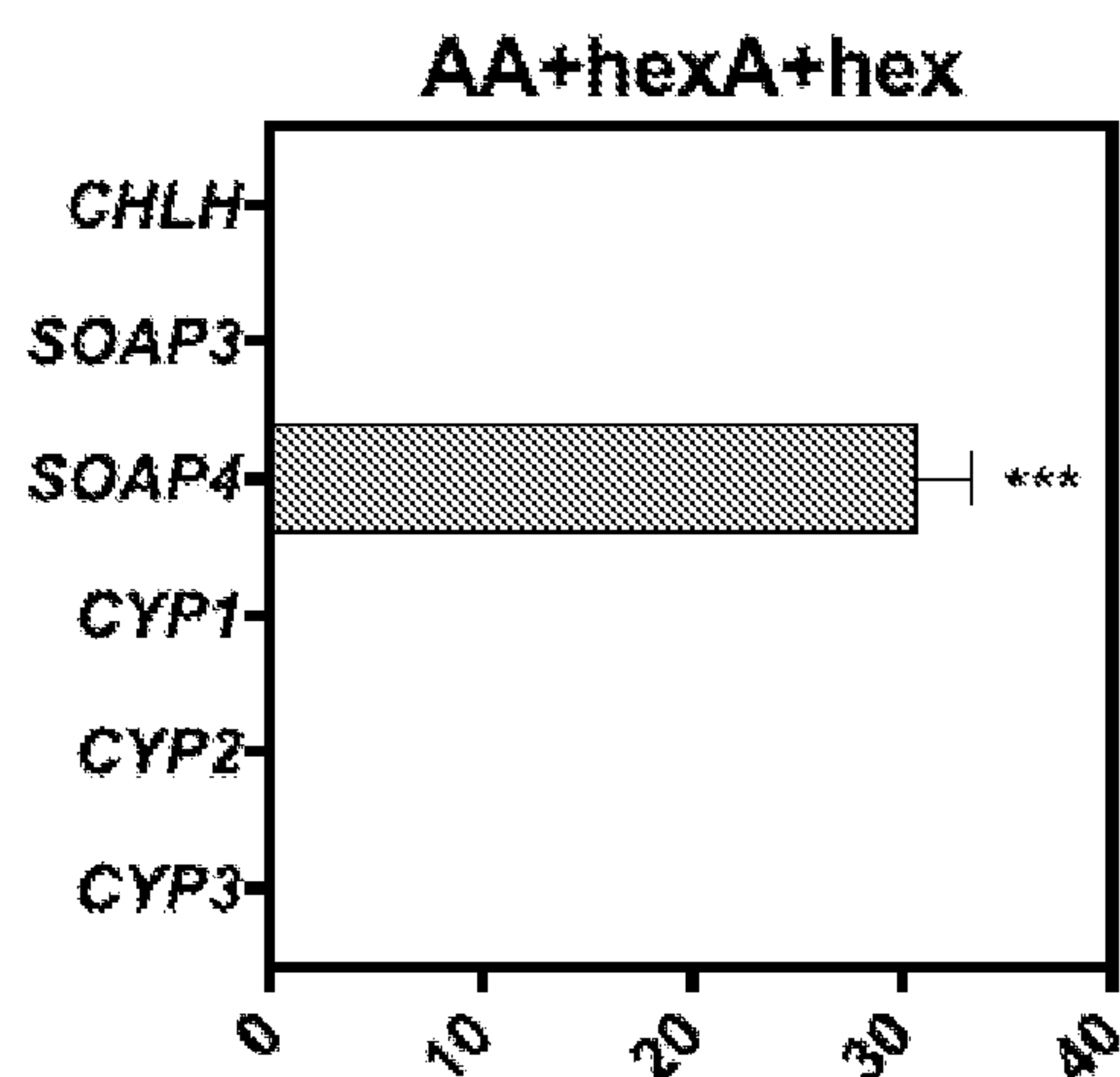


FIGURE 26A

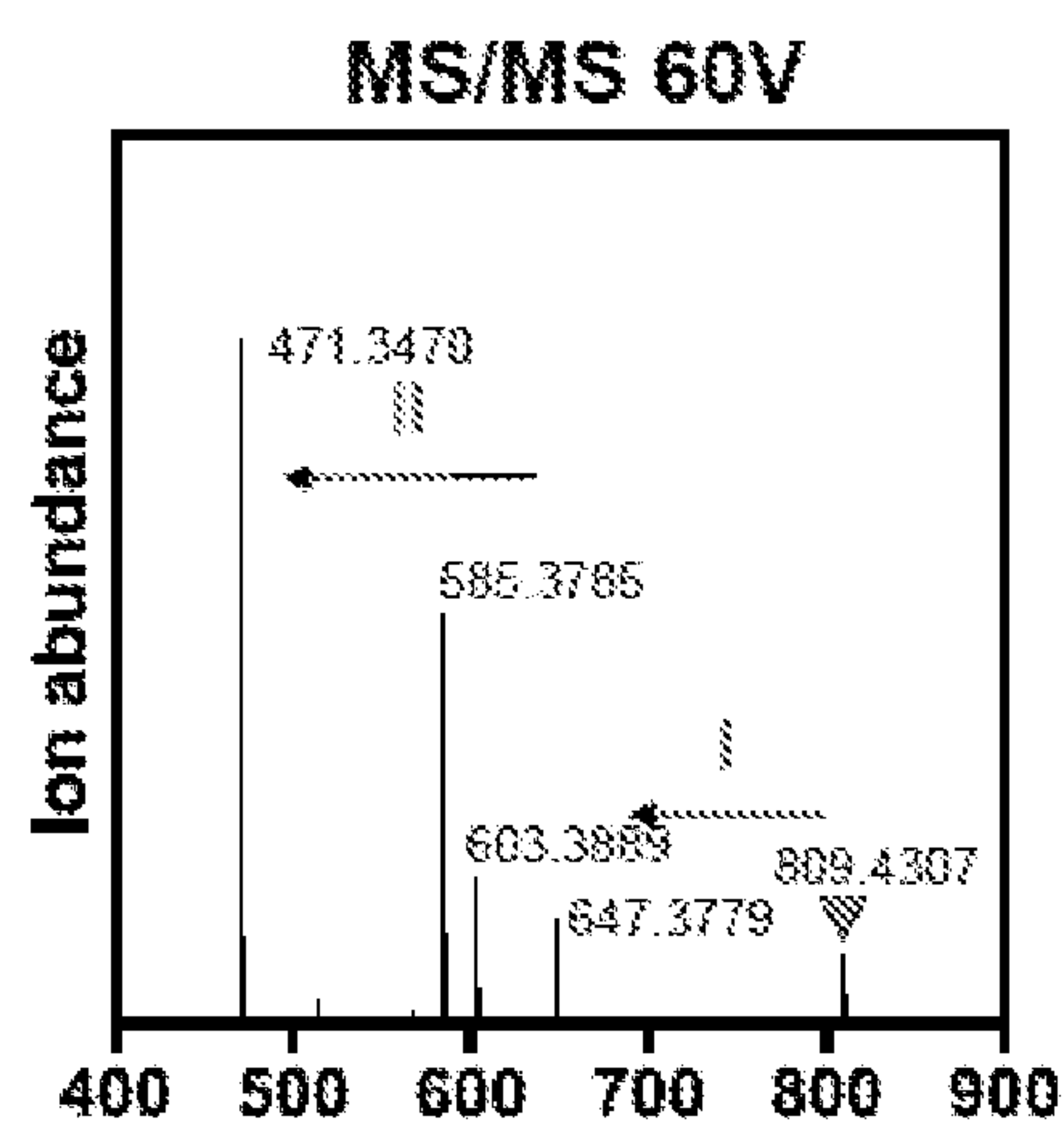


FIGURE 26B

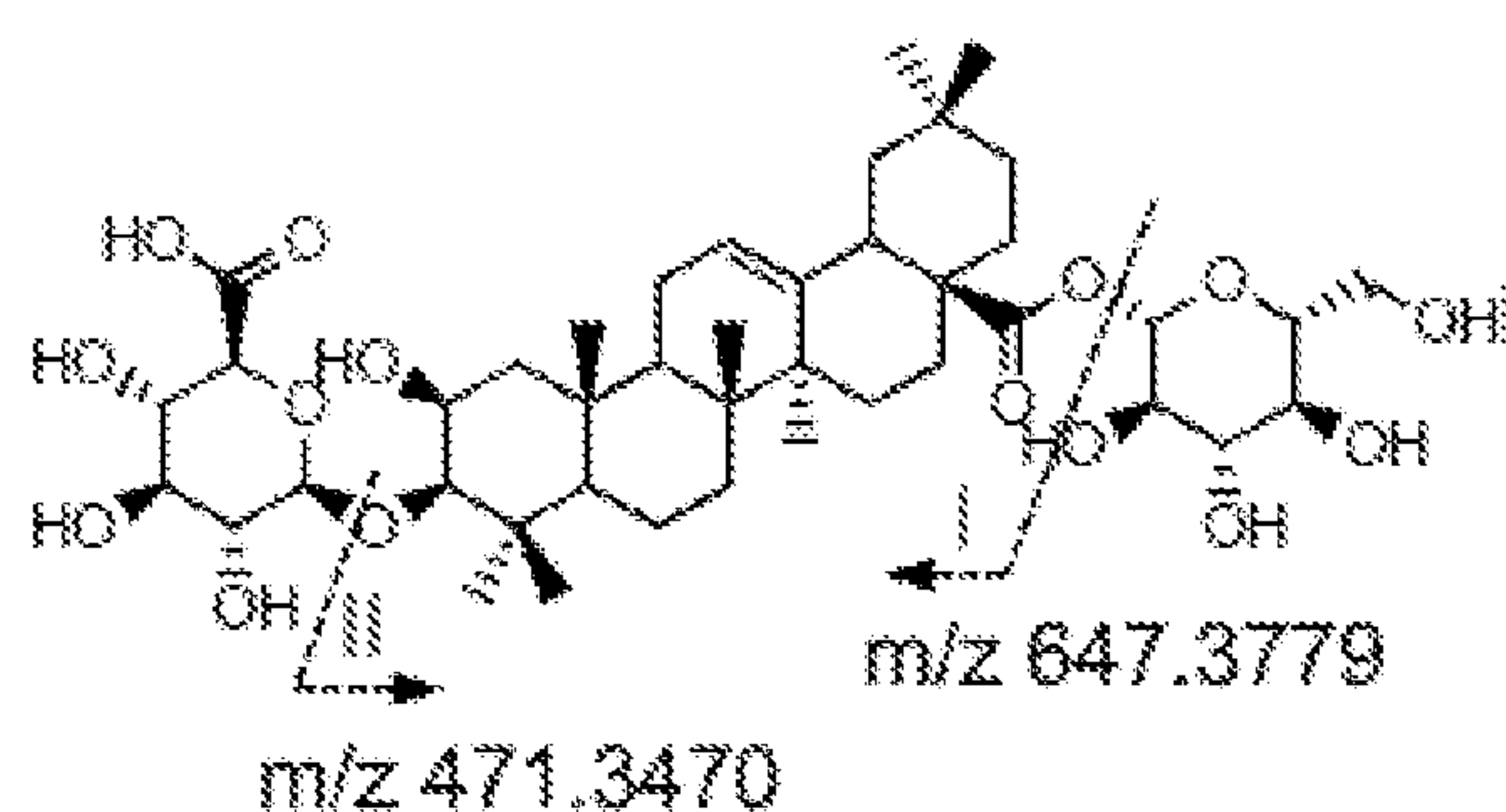


FIGURE 26C

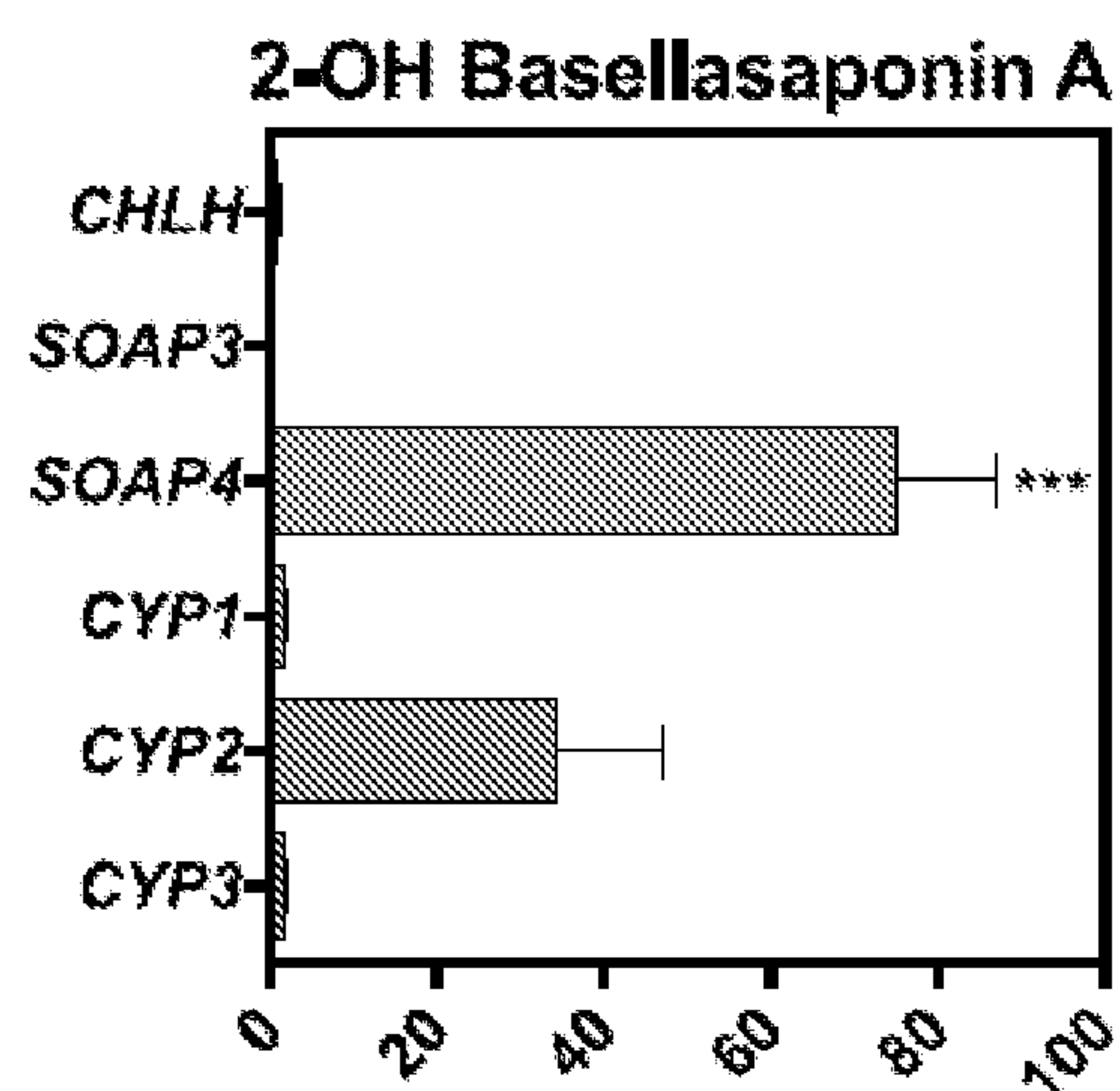


FIGURE 26D

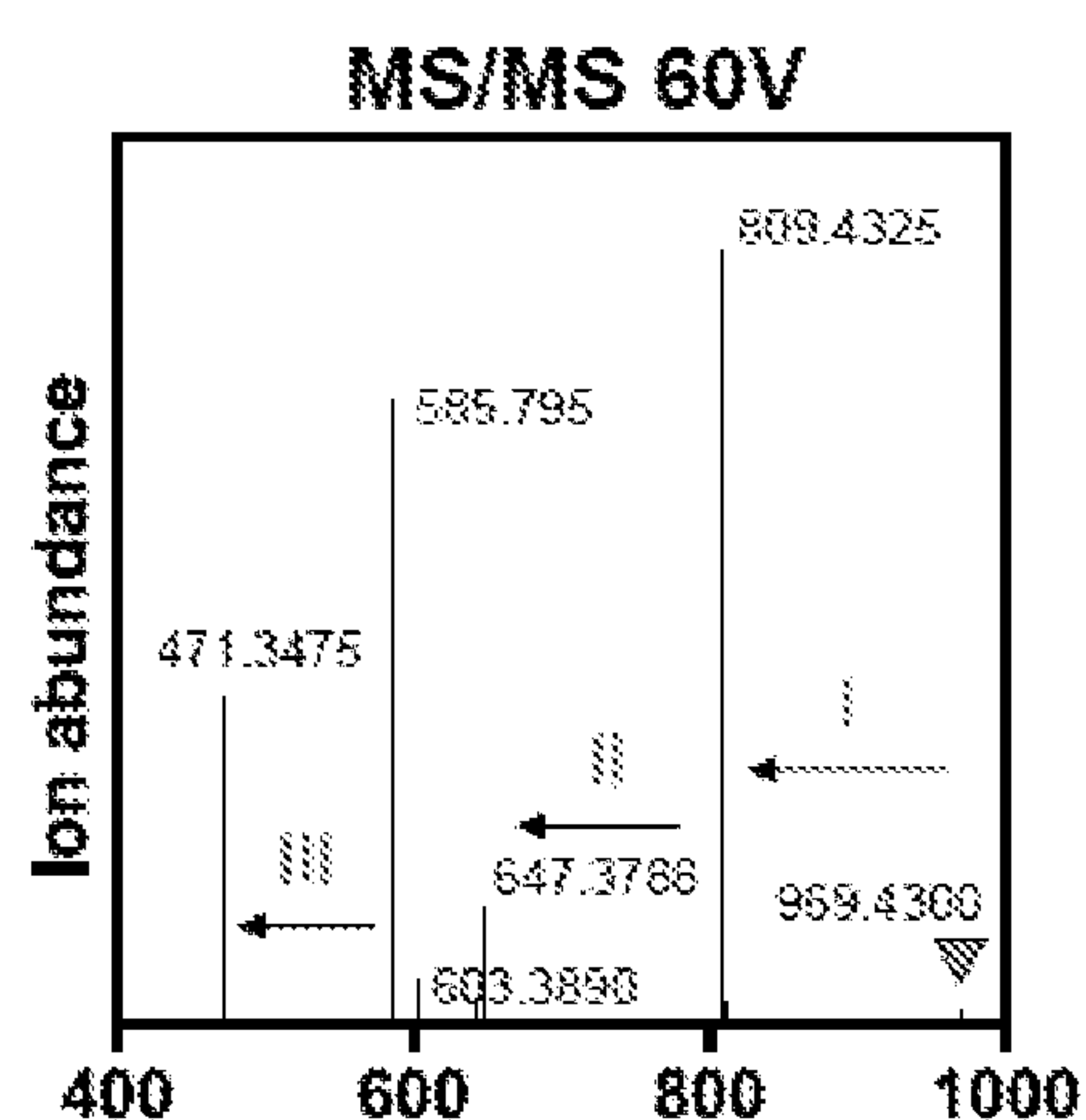


FIGURE 26E

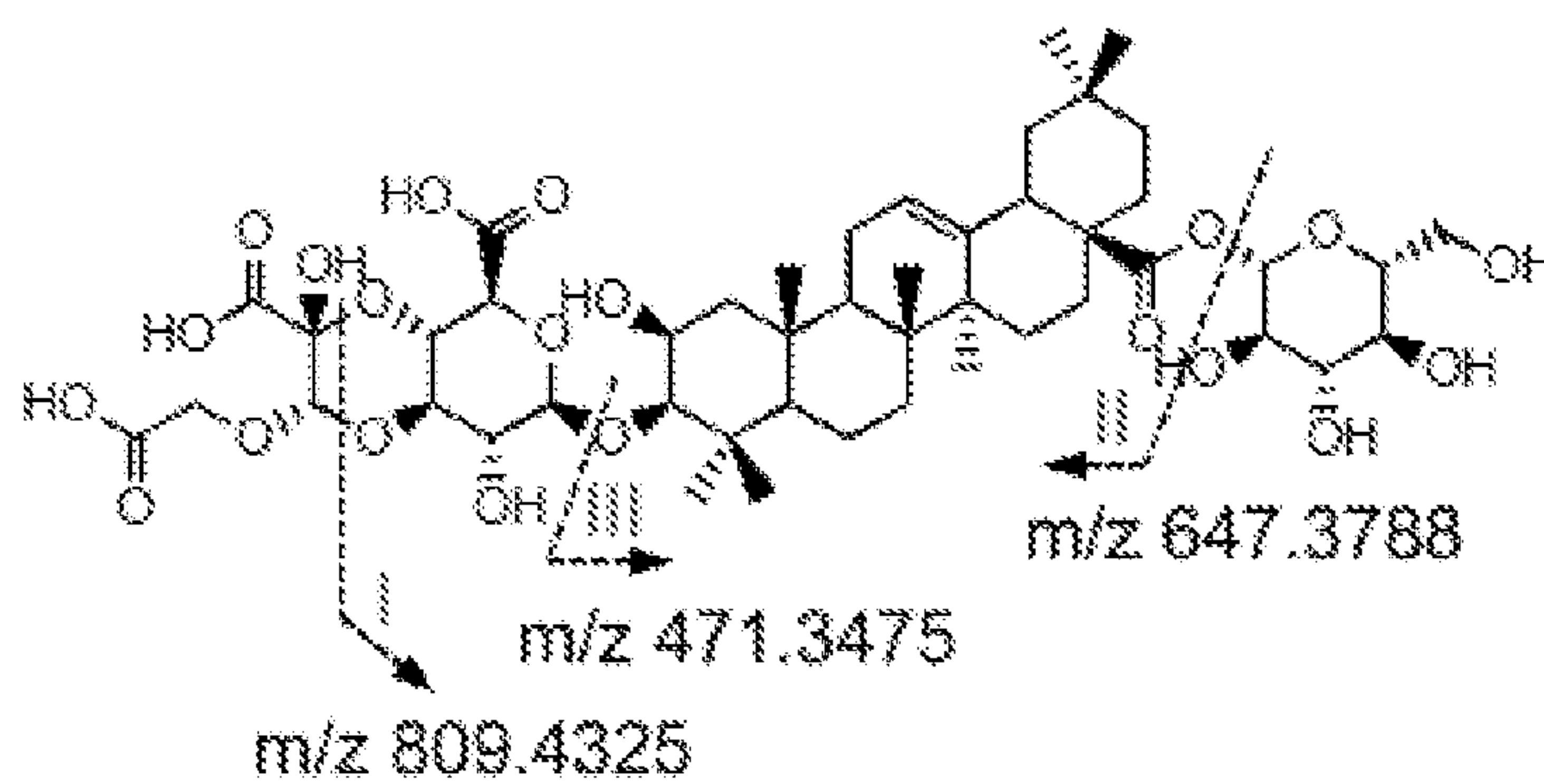


FIGURE 26F

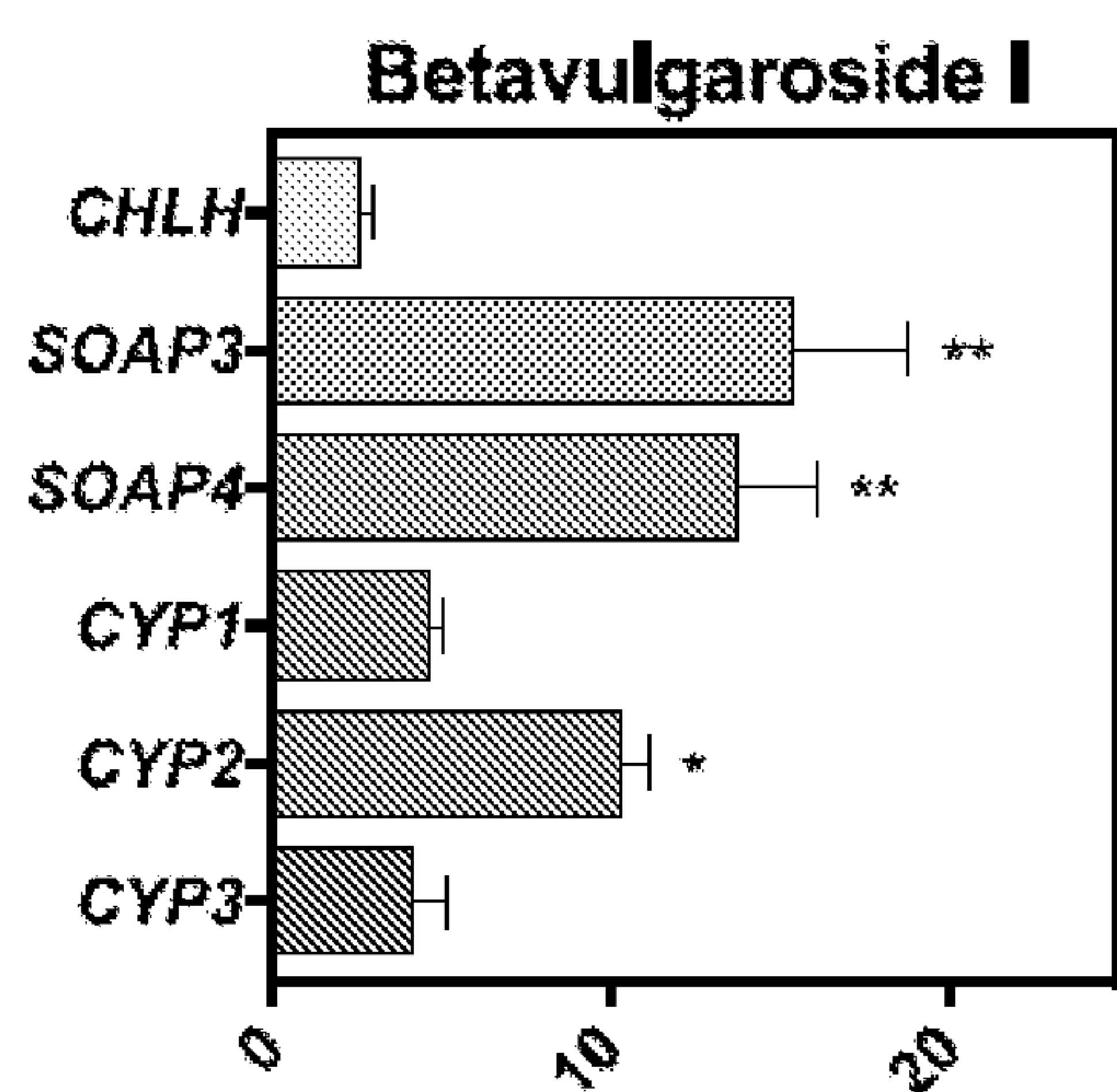


FIGURE 26G

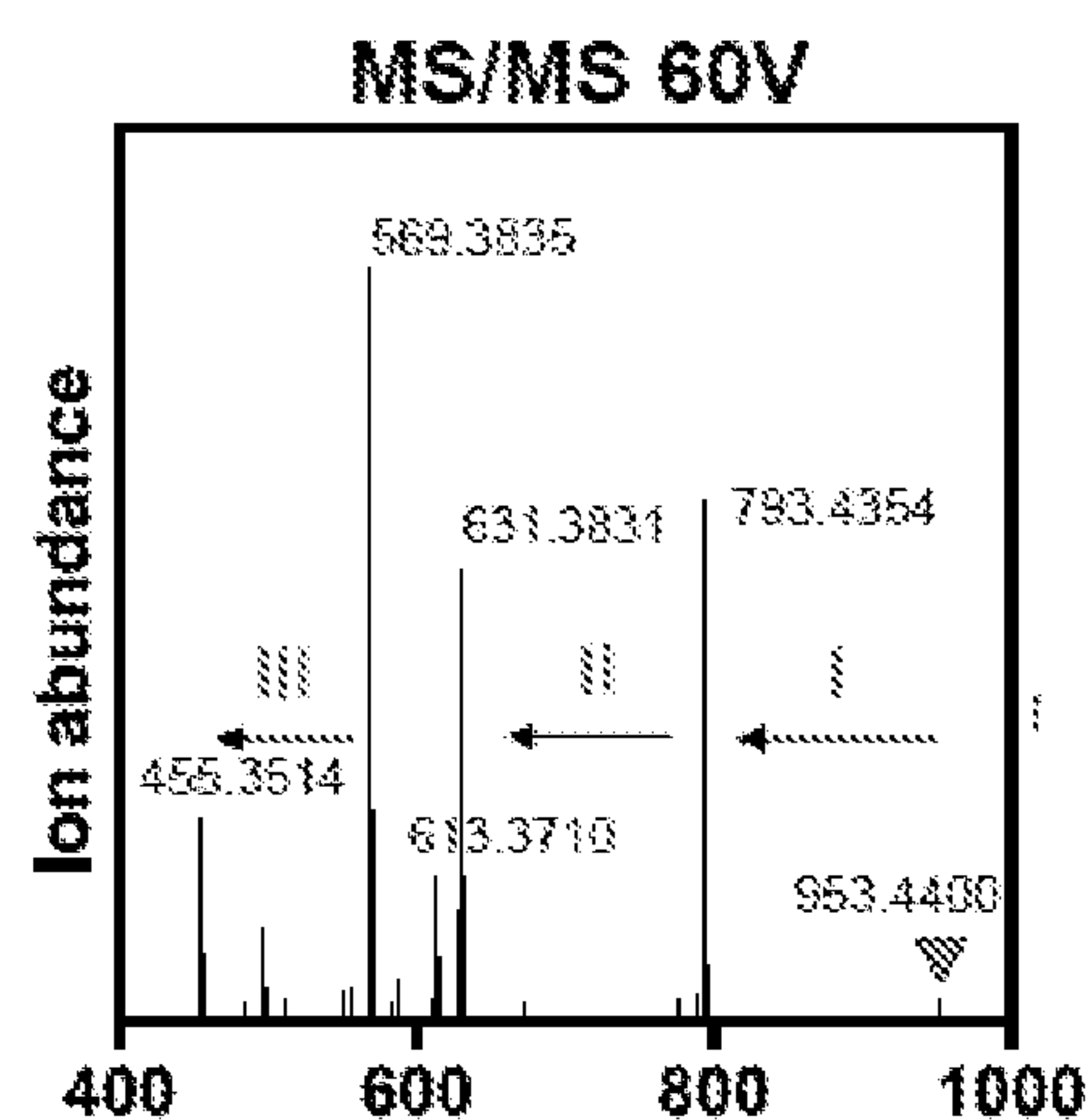


FIGURE 26H

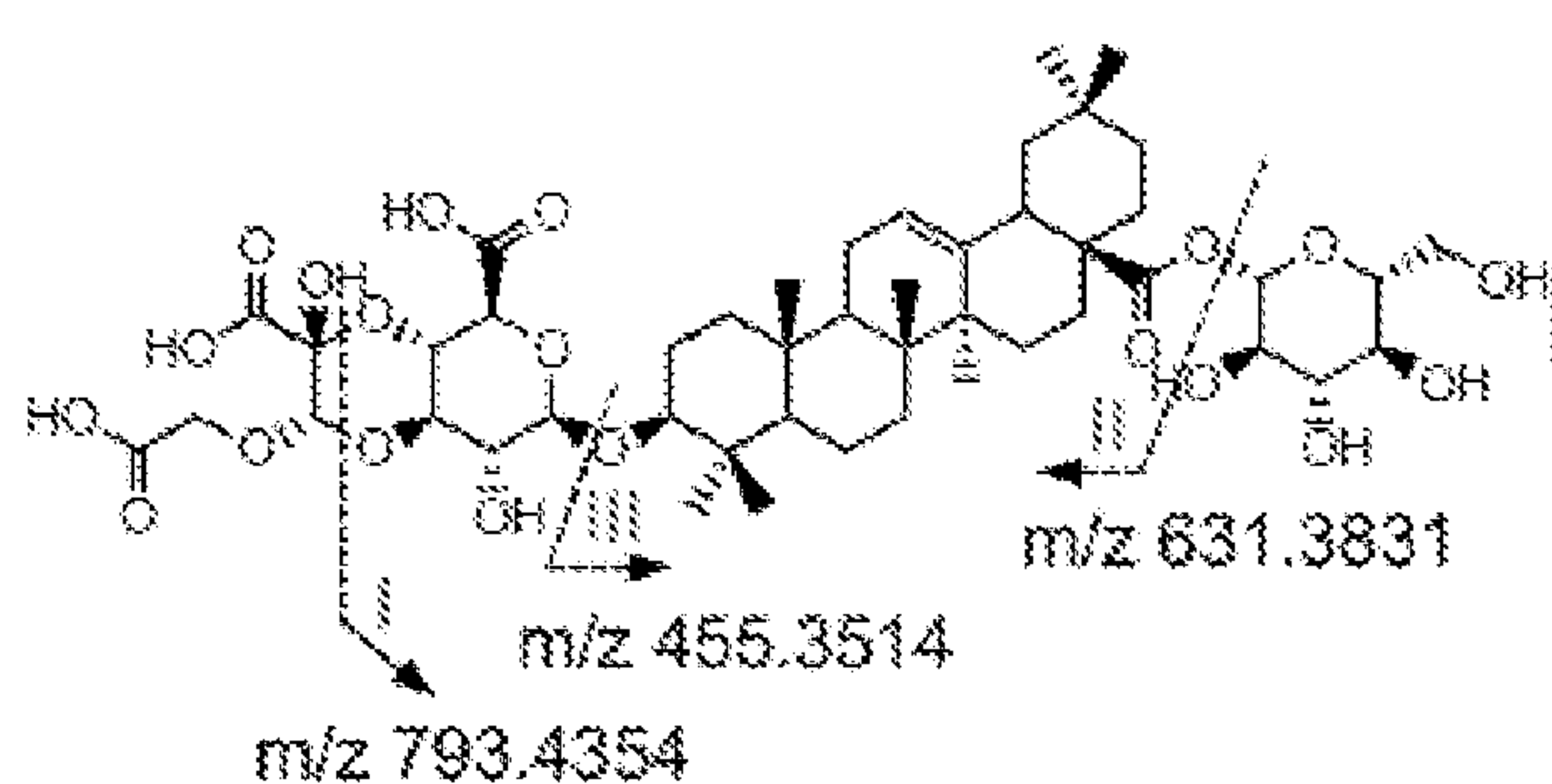


FIGURE 26I

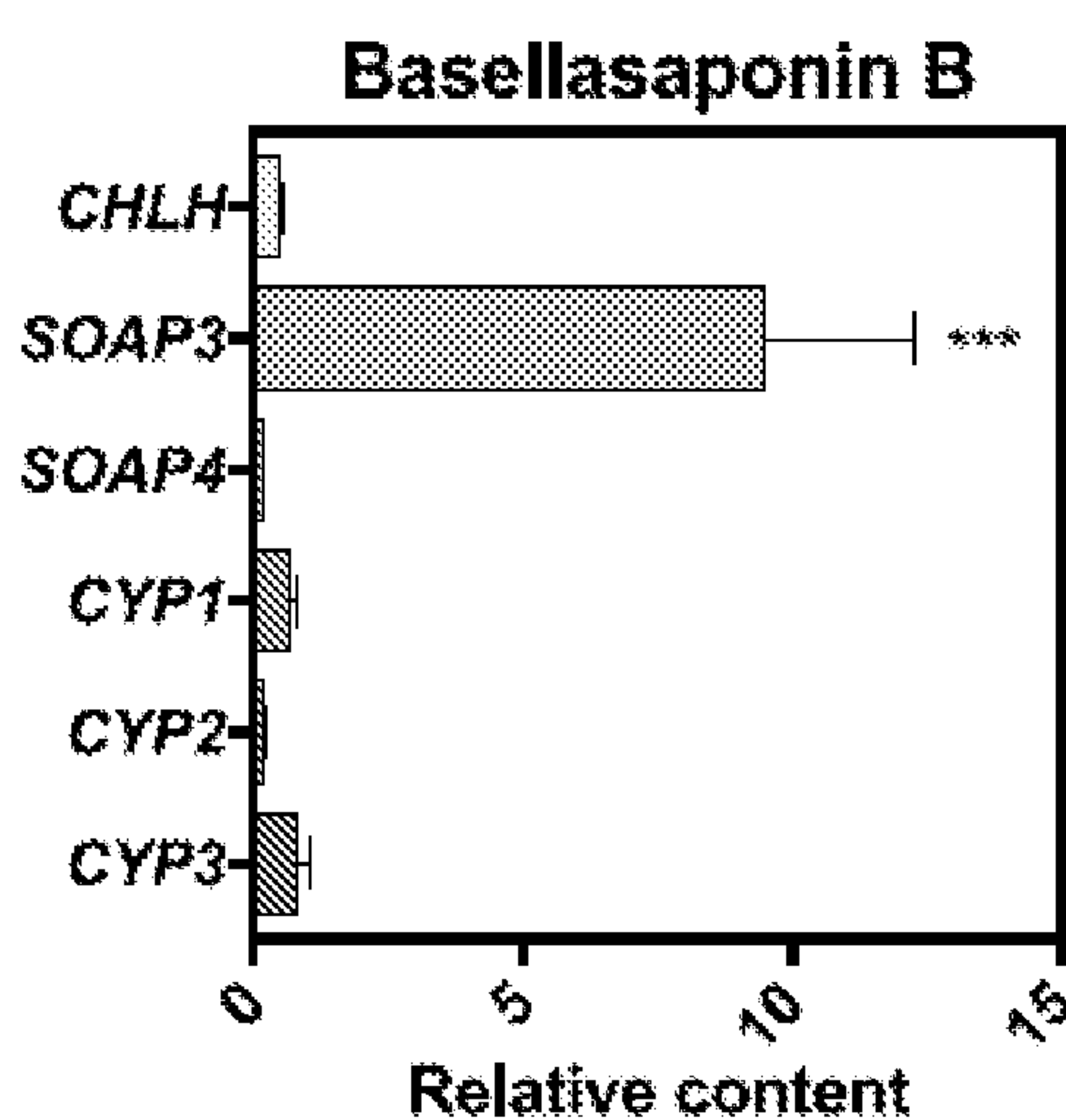


FIGURE 26J

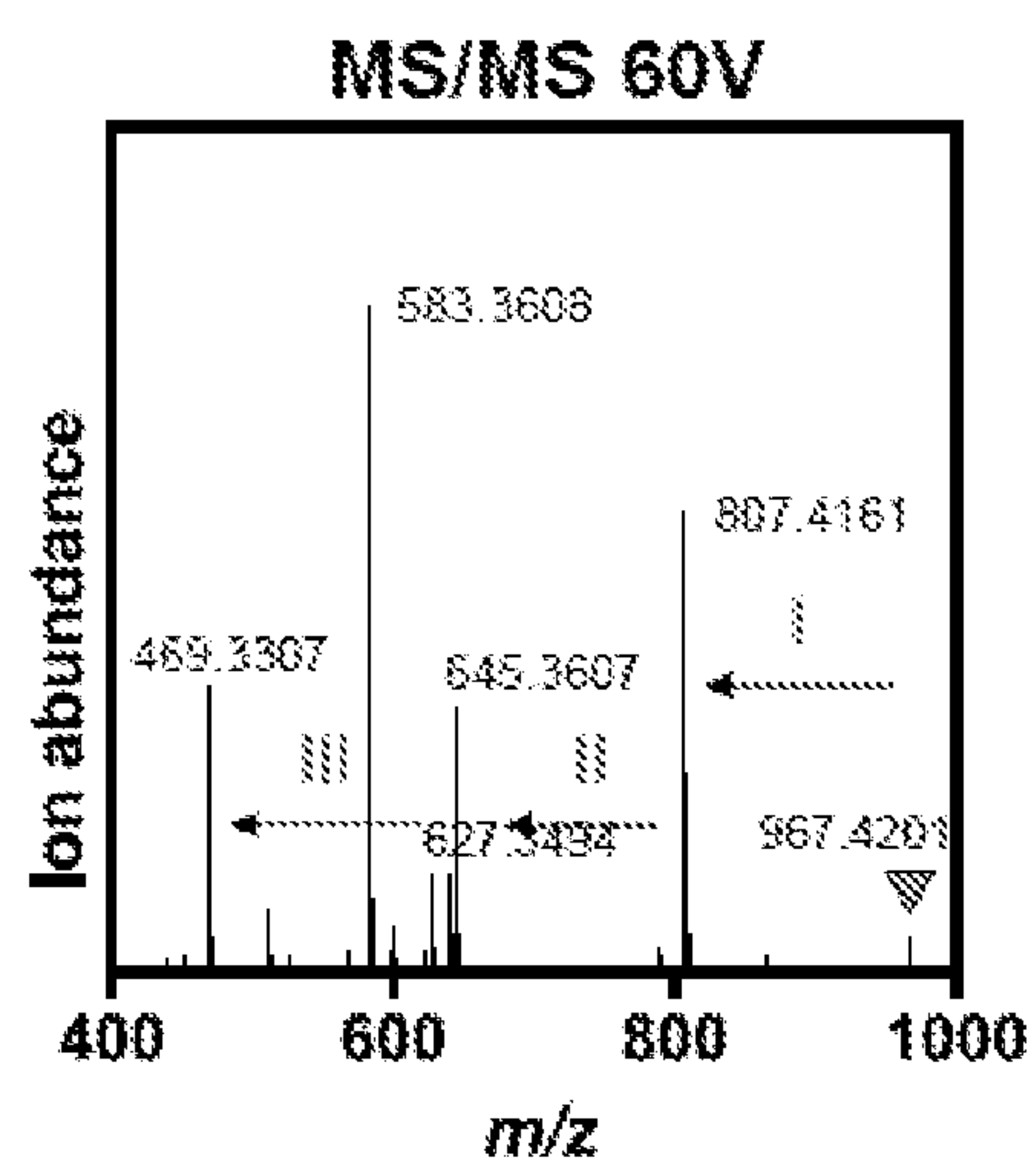


FIGURE 26K

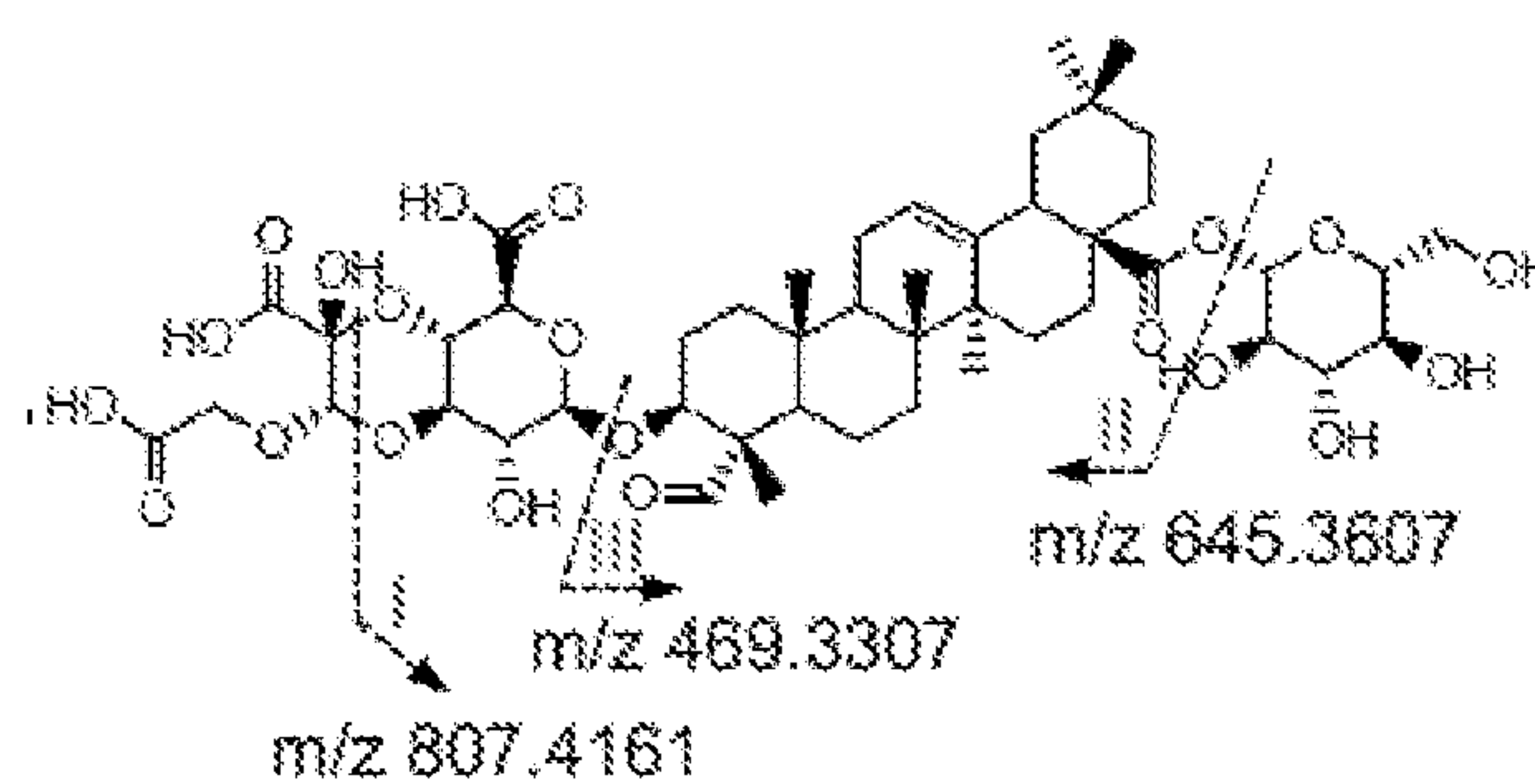


FIGURE 26L

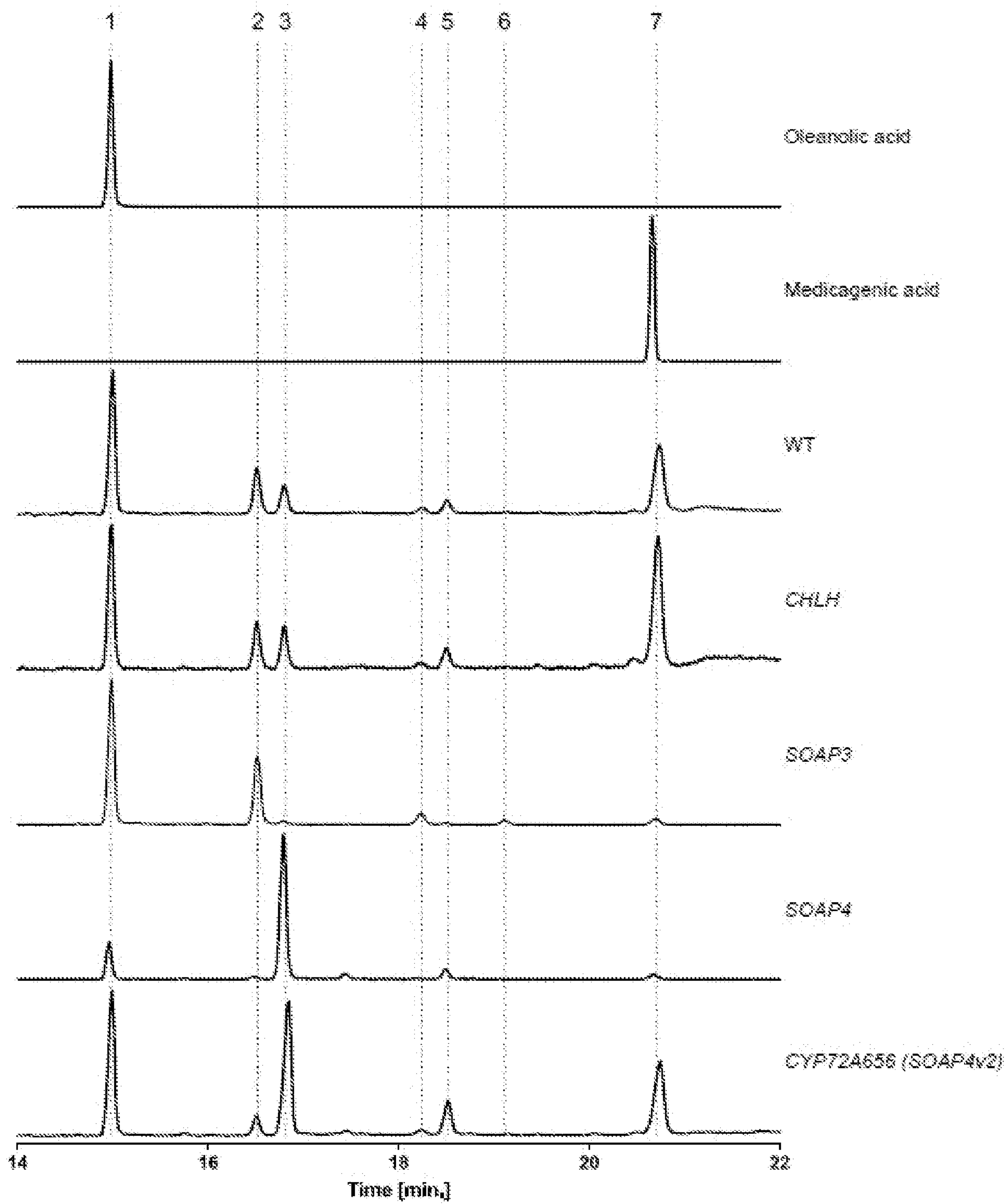


FIGURE 27

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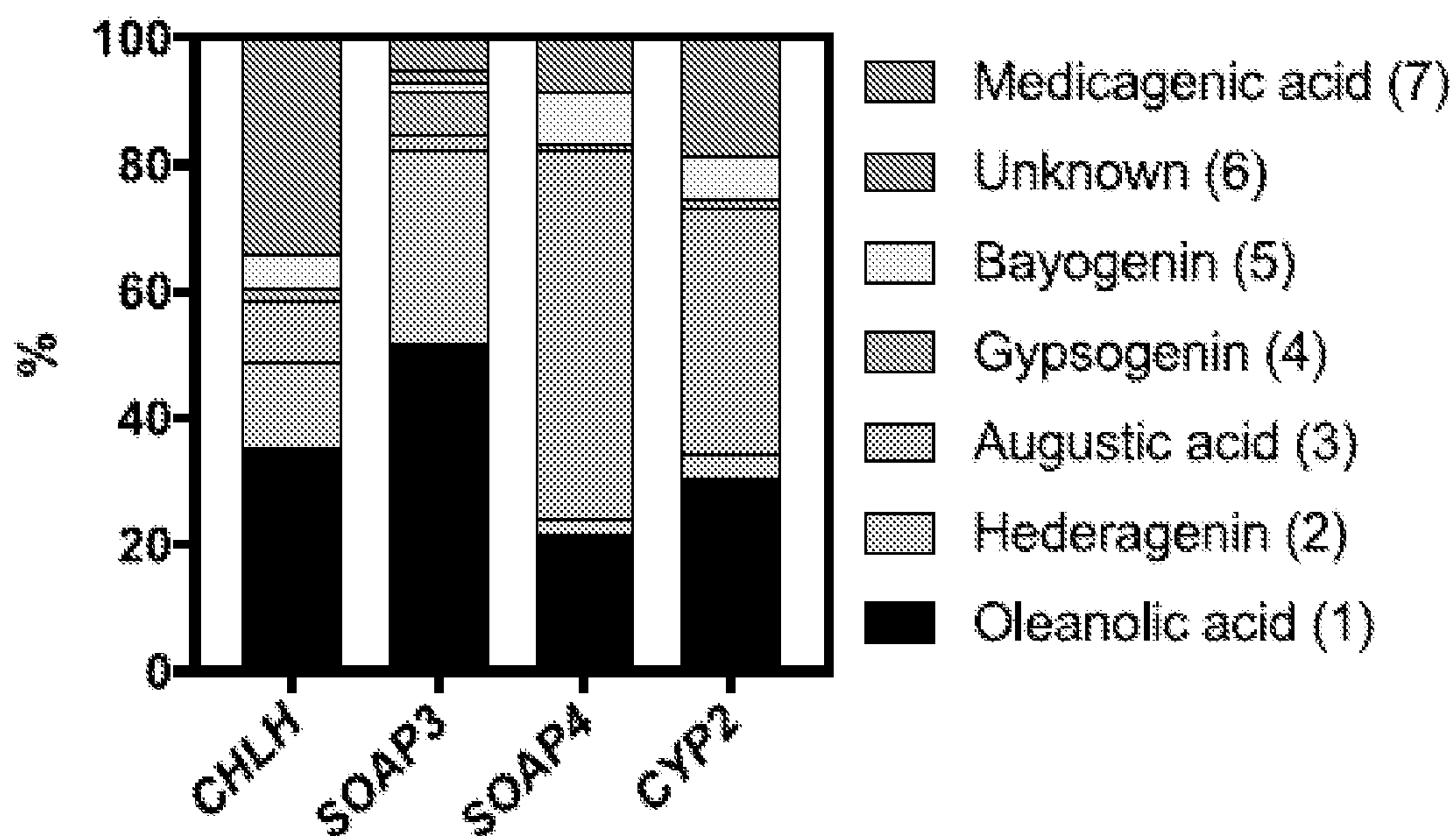


FIGURE 28A

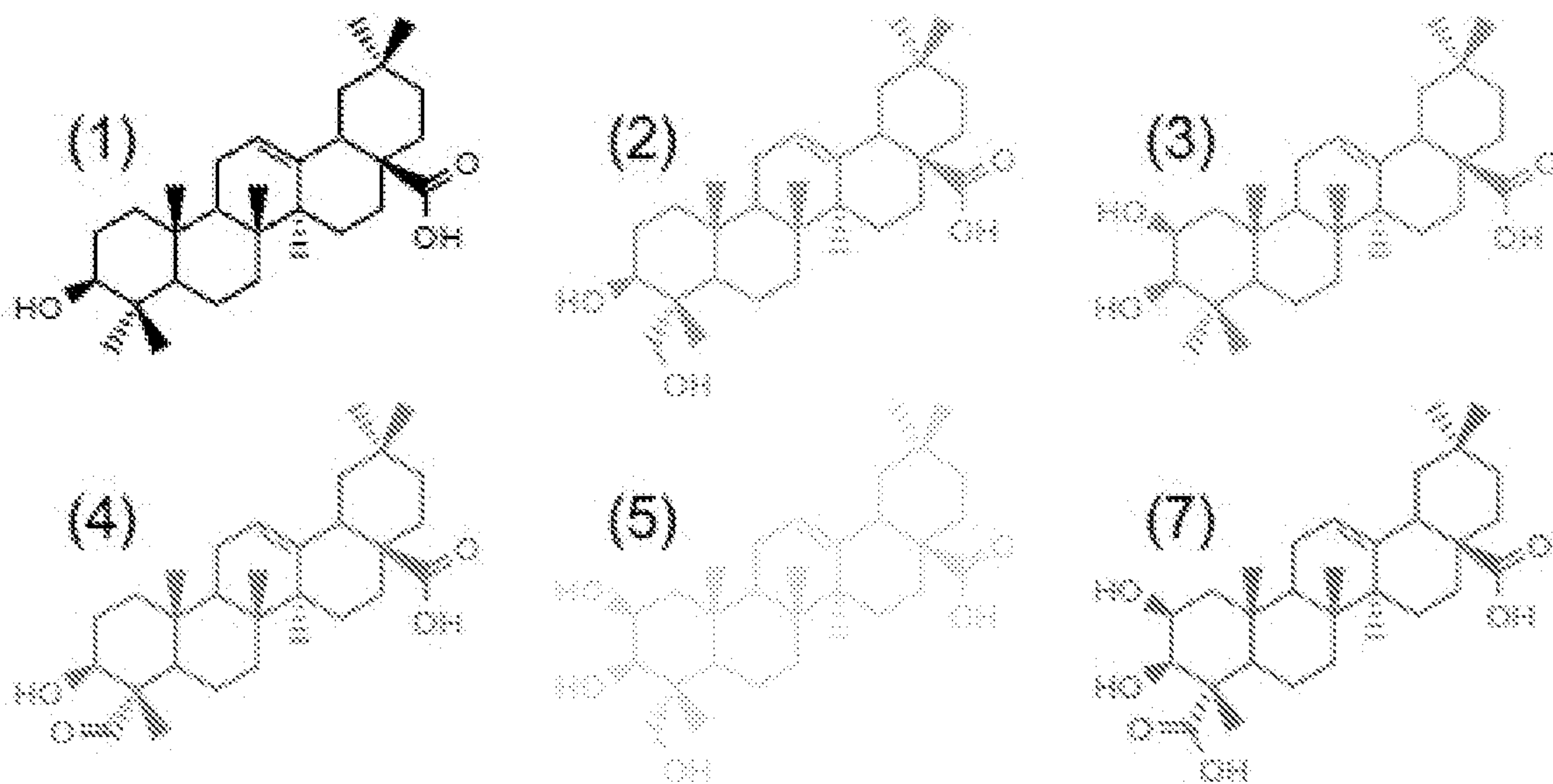


FIGURE 28B

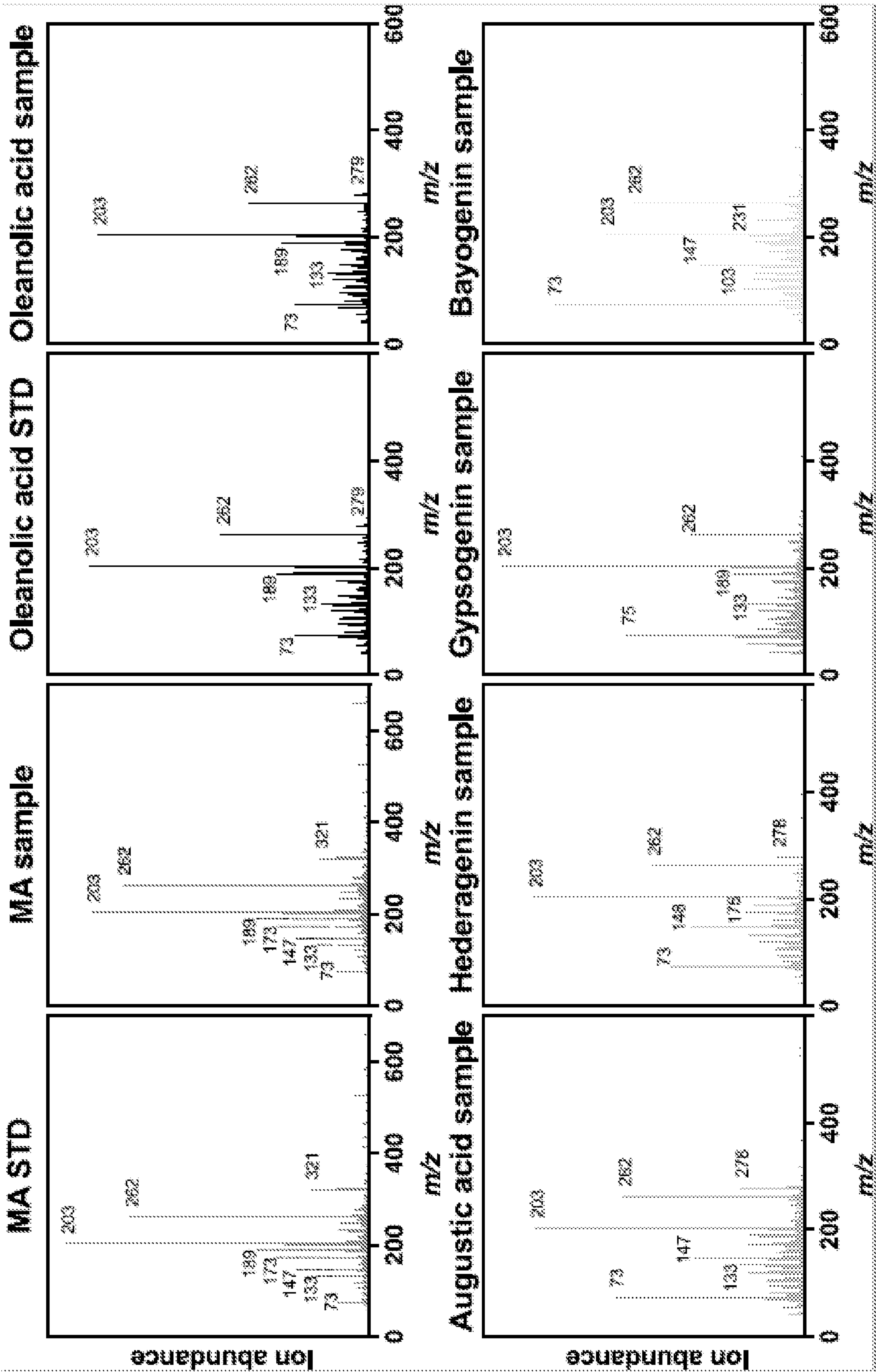


FIGURE 28C

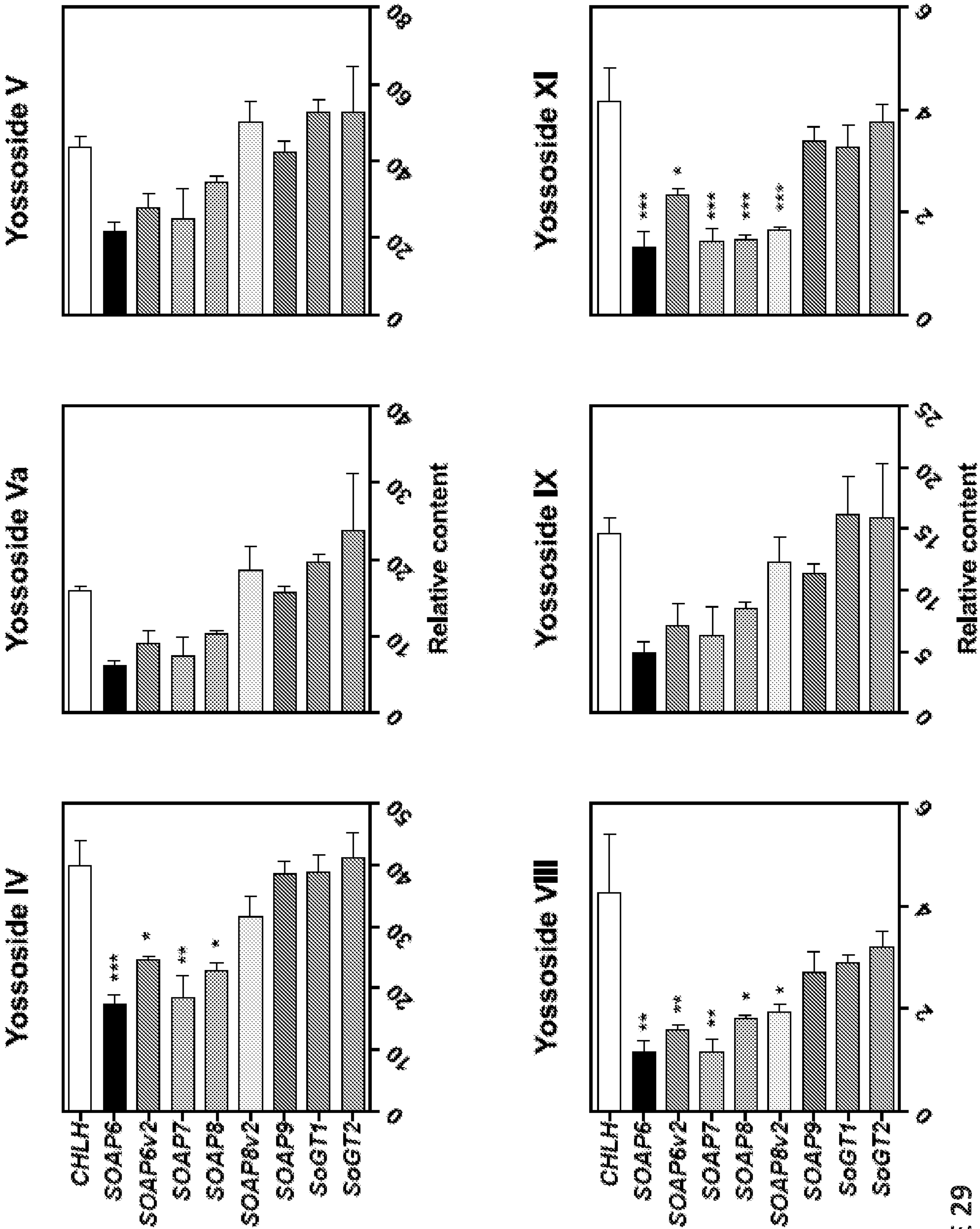


FIGURE 29

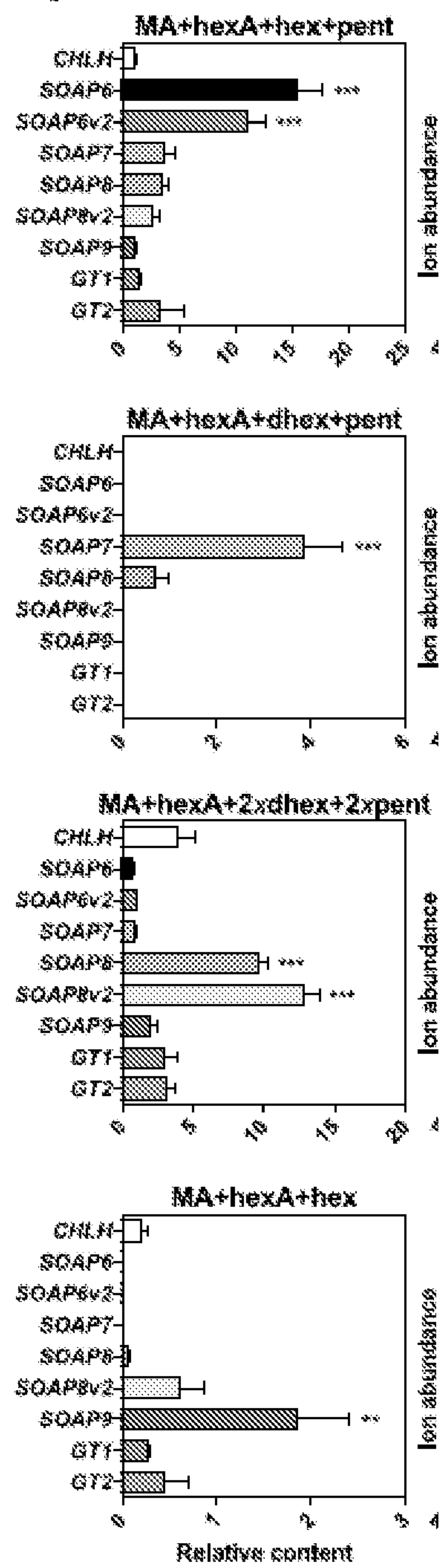


FIGURE 30A

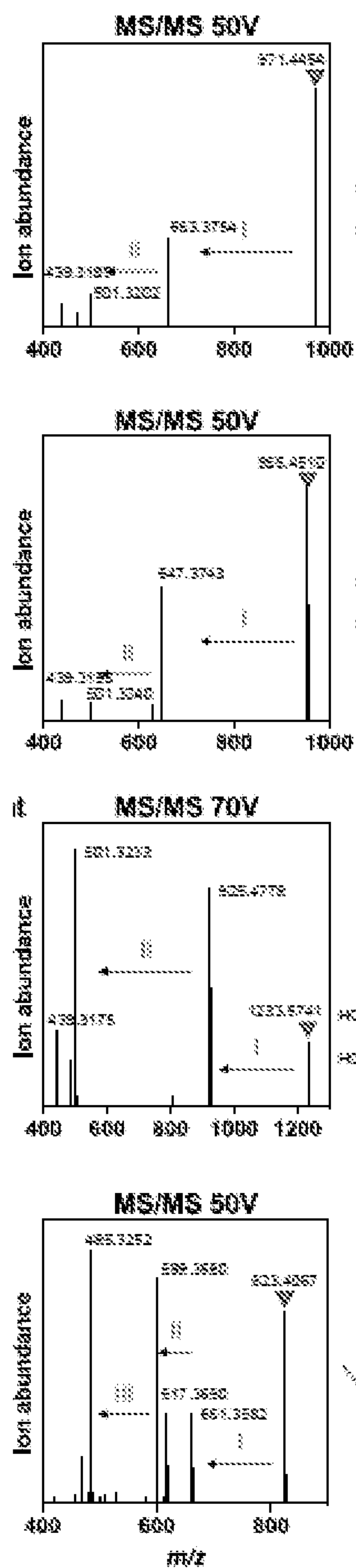


FIGURE 30B

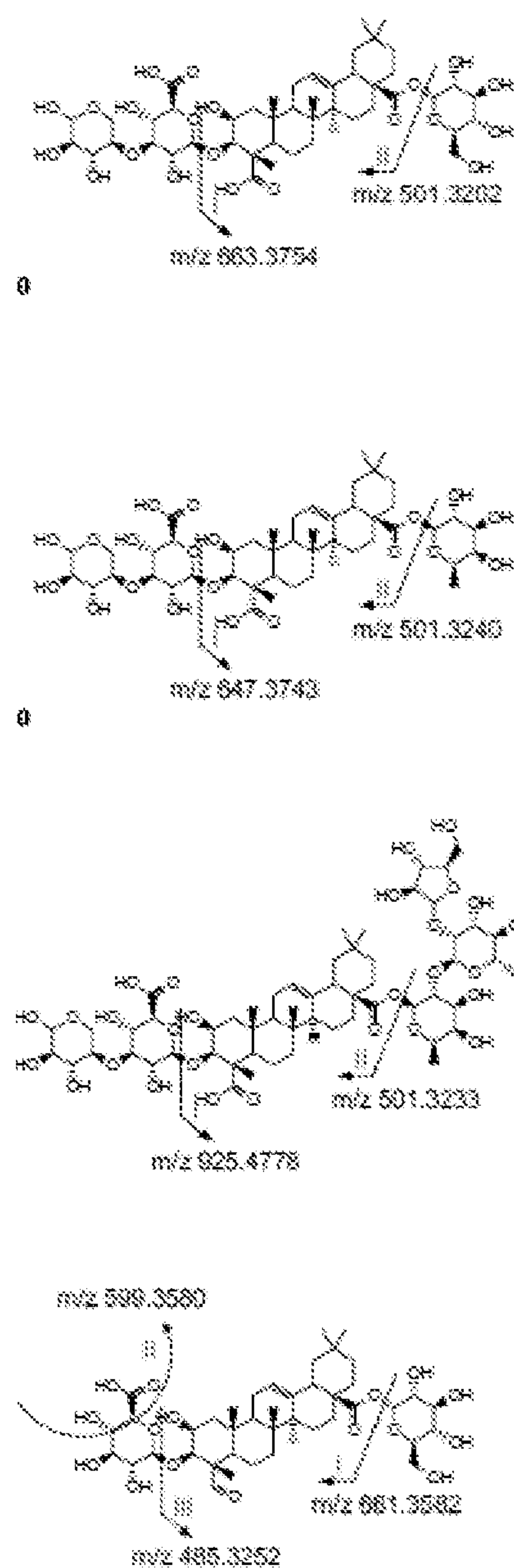


FIGURE 30C

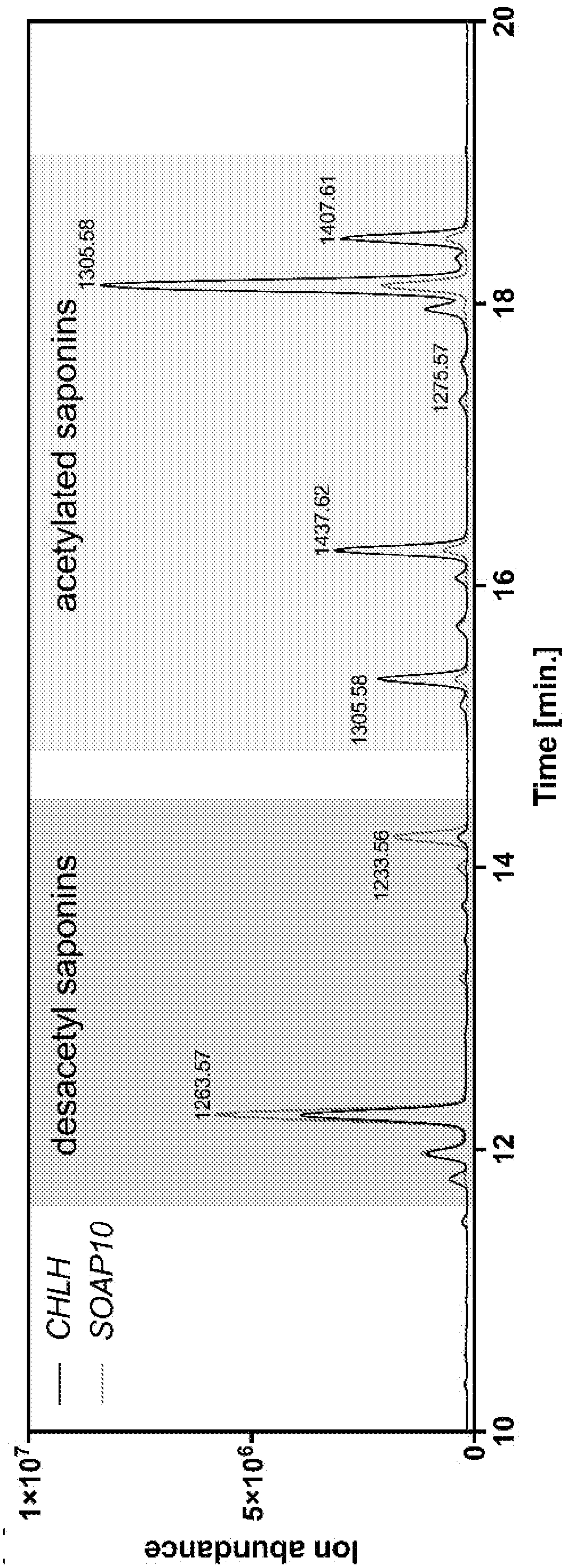


FIGURE 31A

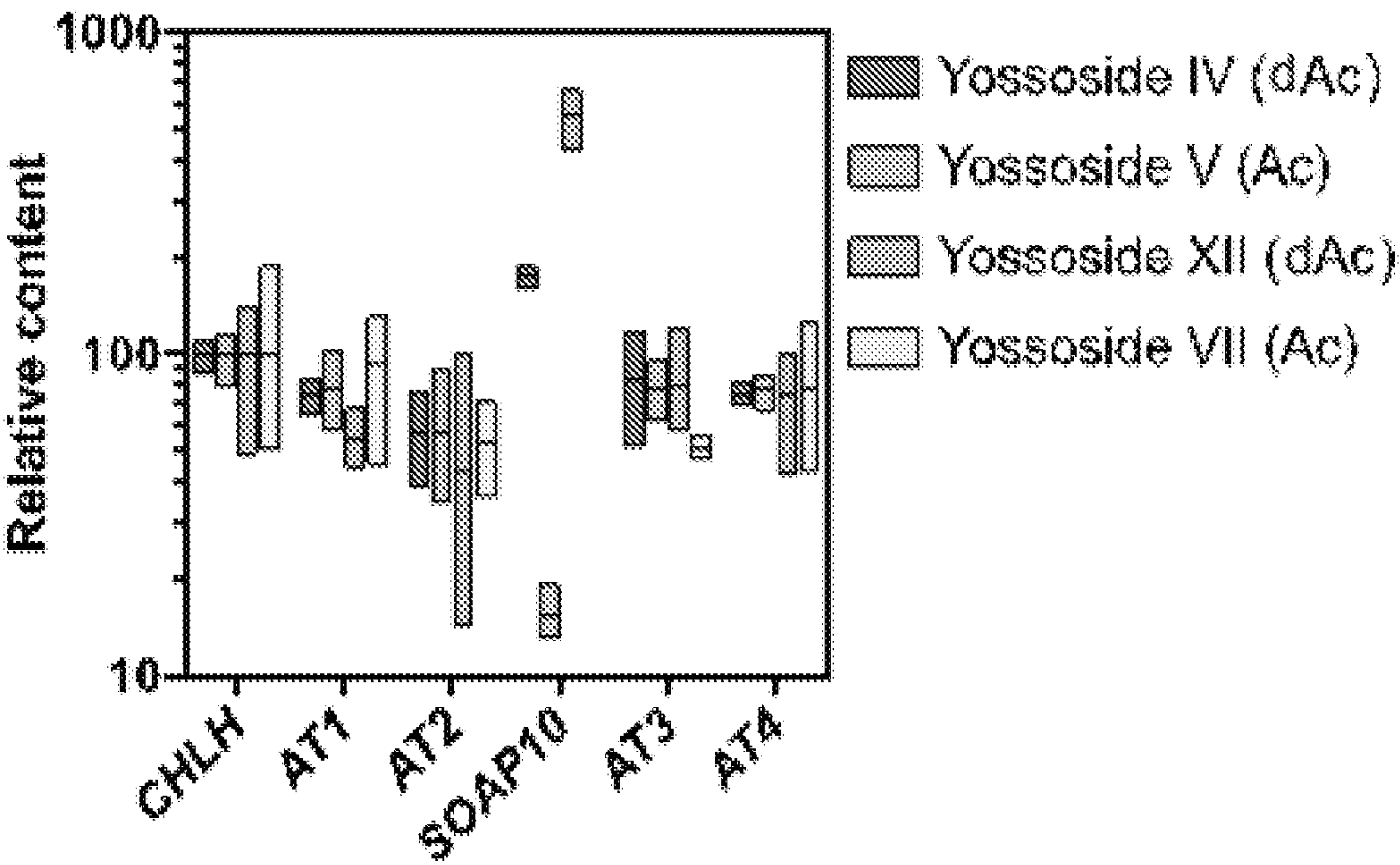


FIGURE 31B

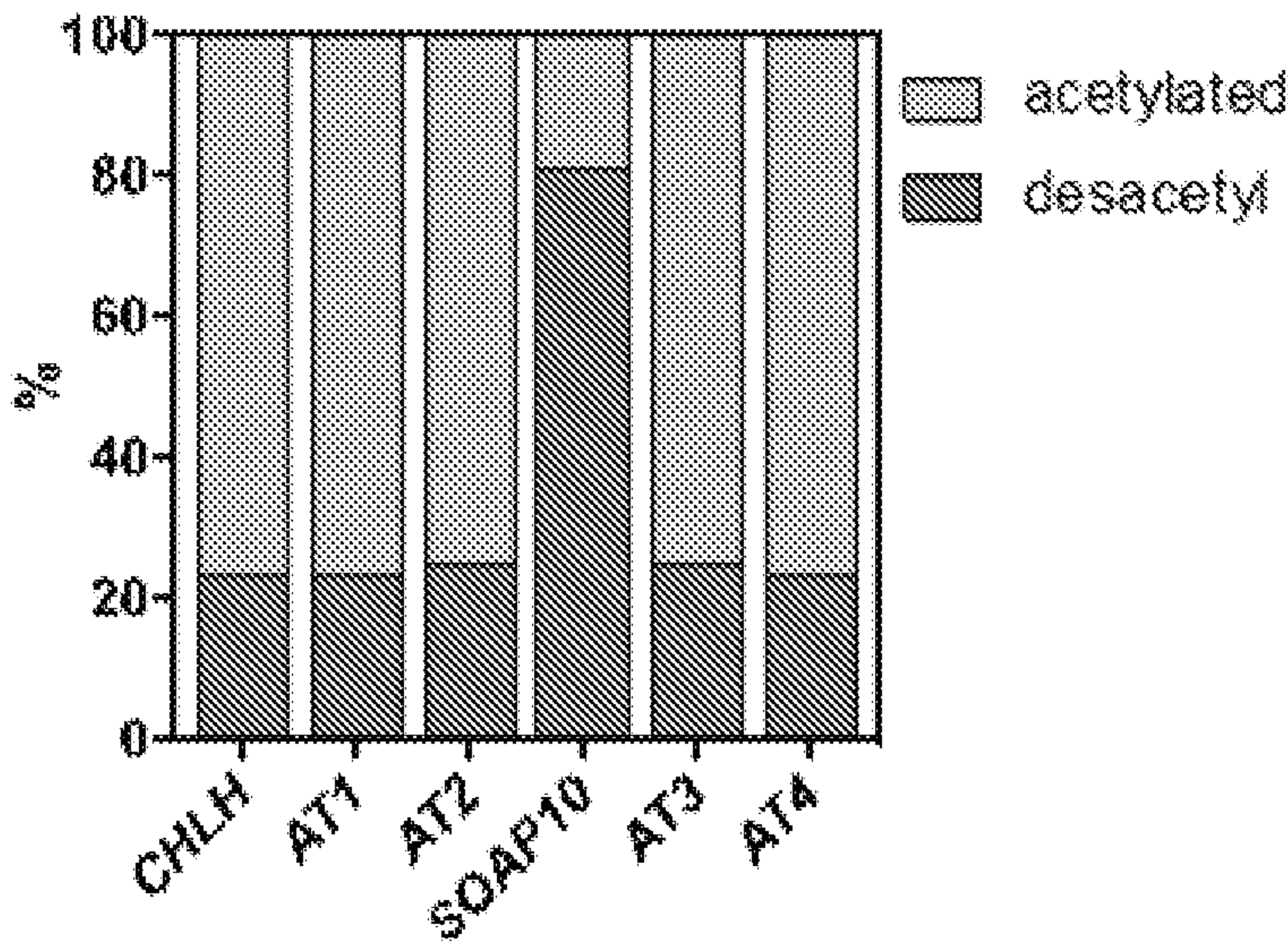


FIGURE 31C

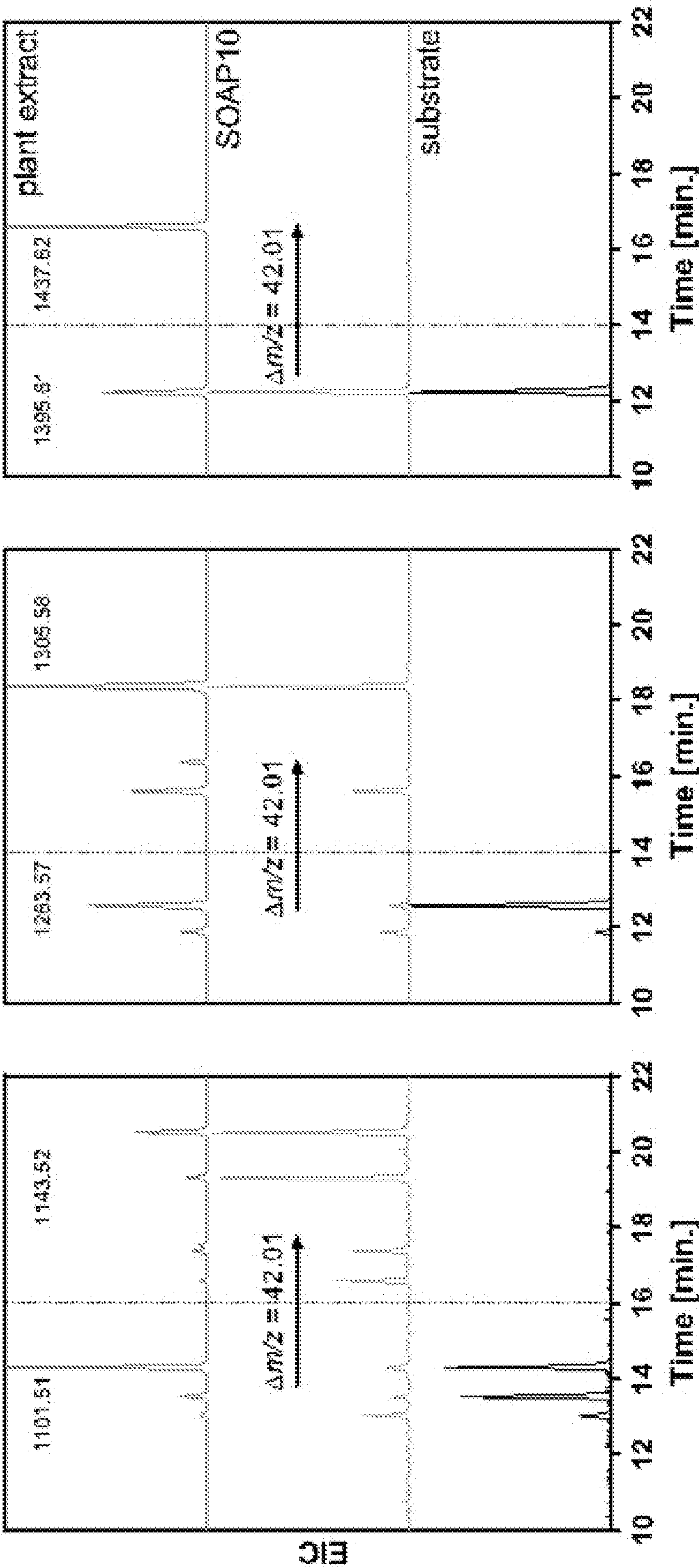


FIGURE 31F

FIGURE 31E

FIGURE 31D

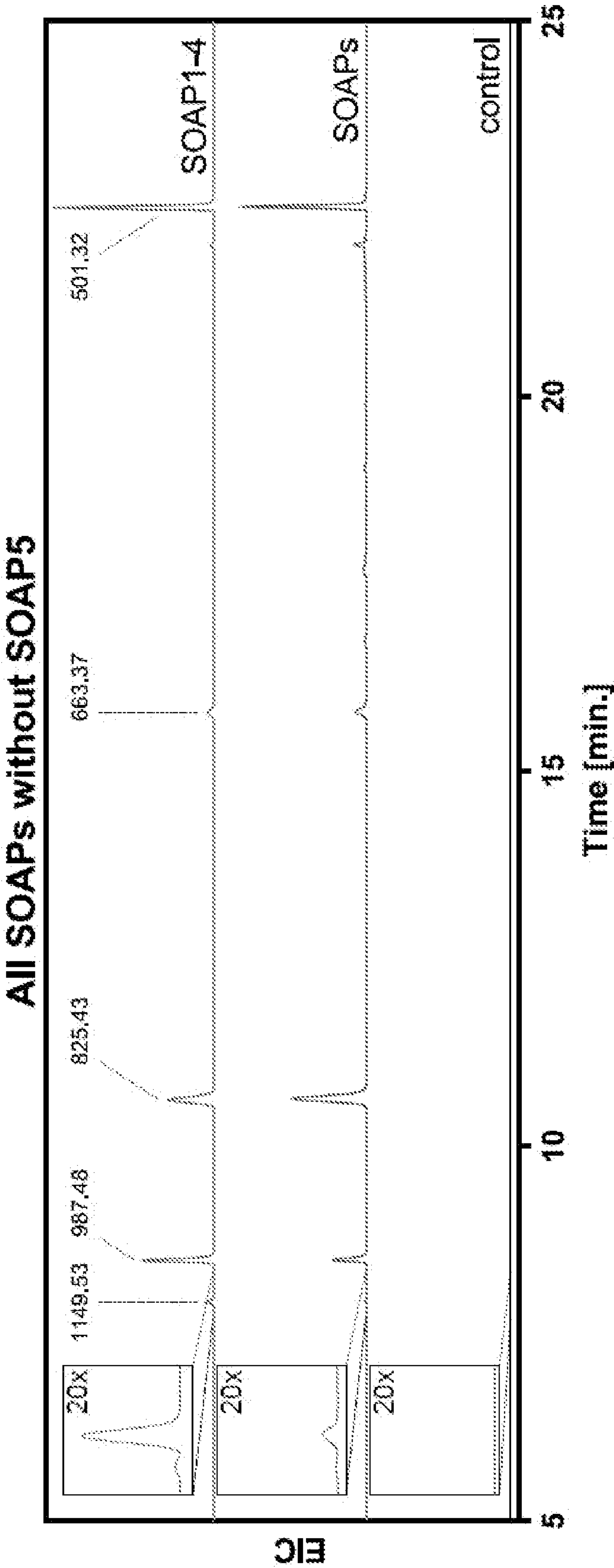


FIGURE 32A

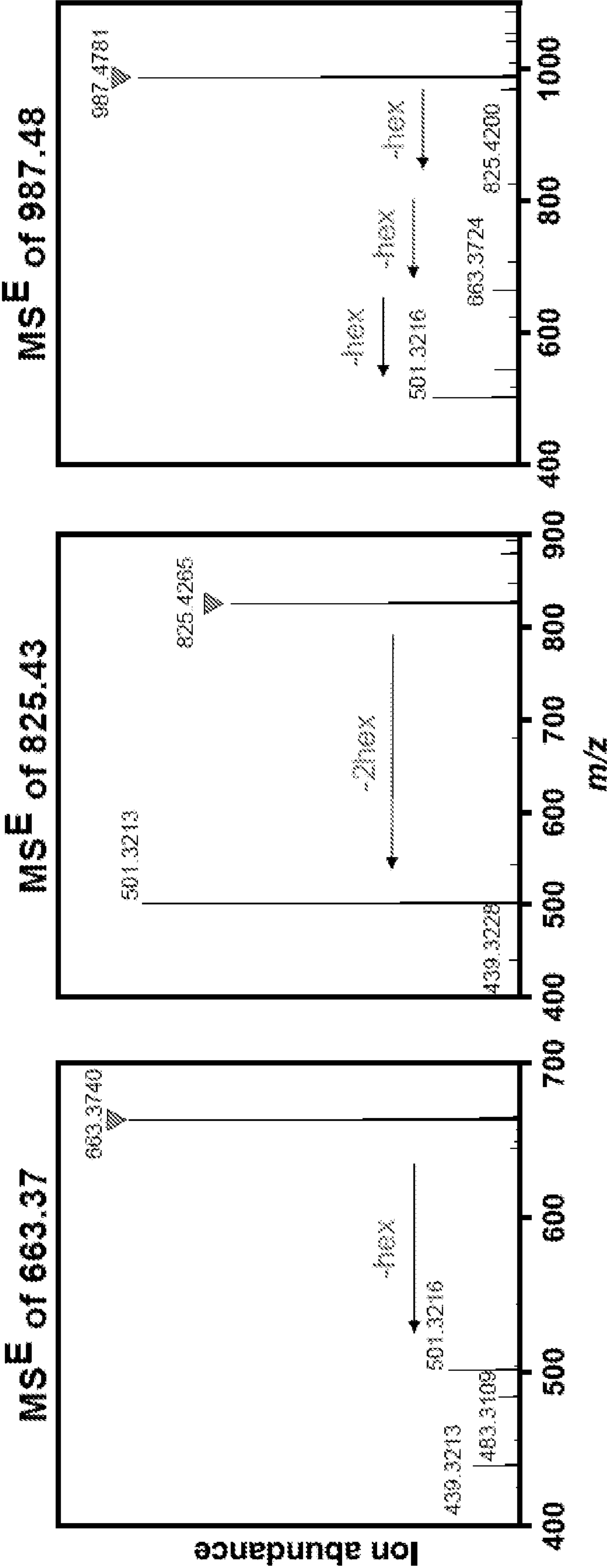
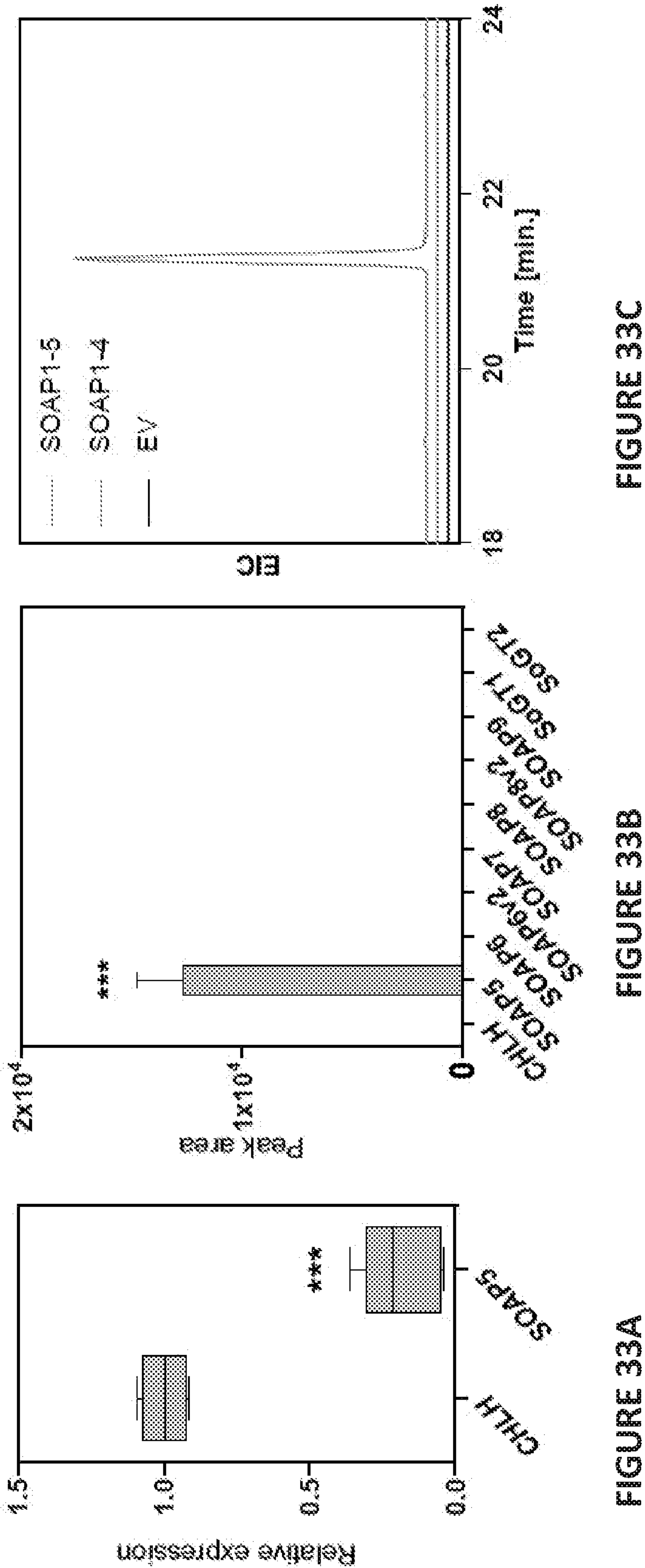


FIGURE 32B

FIGURE 32C

FIGURE 32D



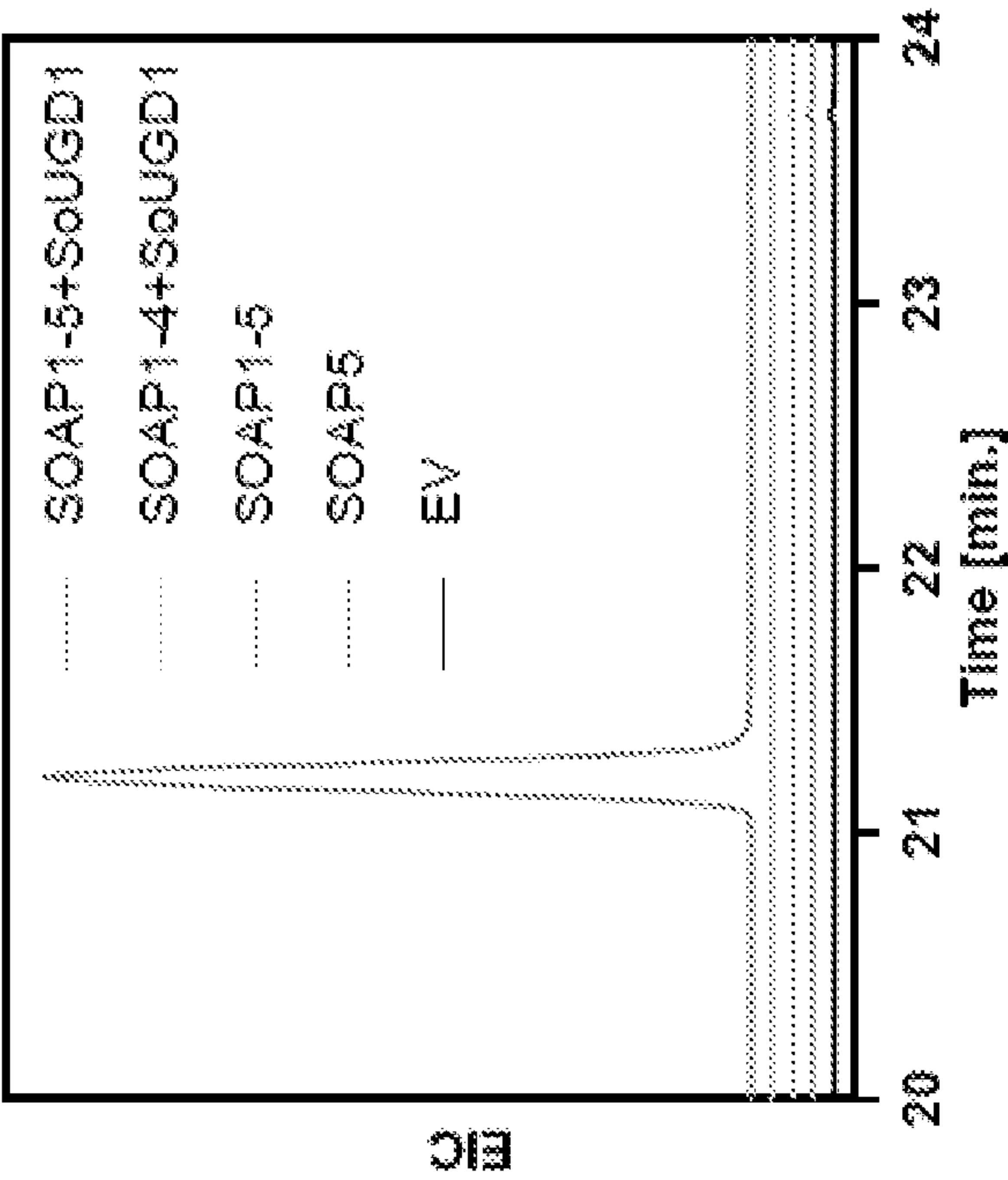


FIGURE 33D

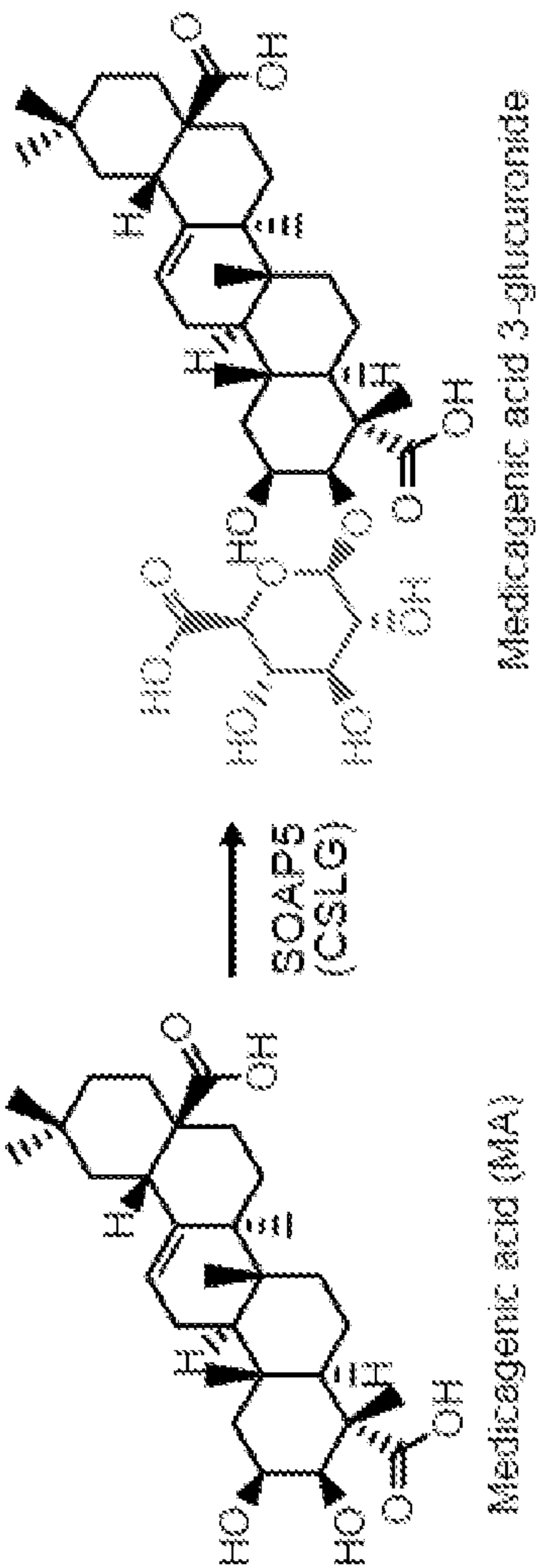


FIGURE 33E

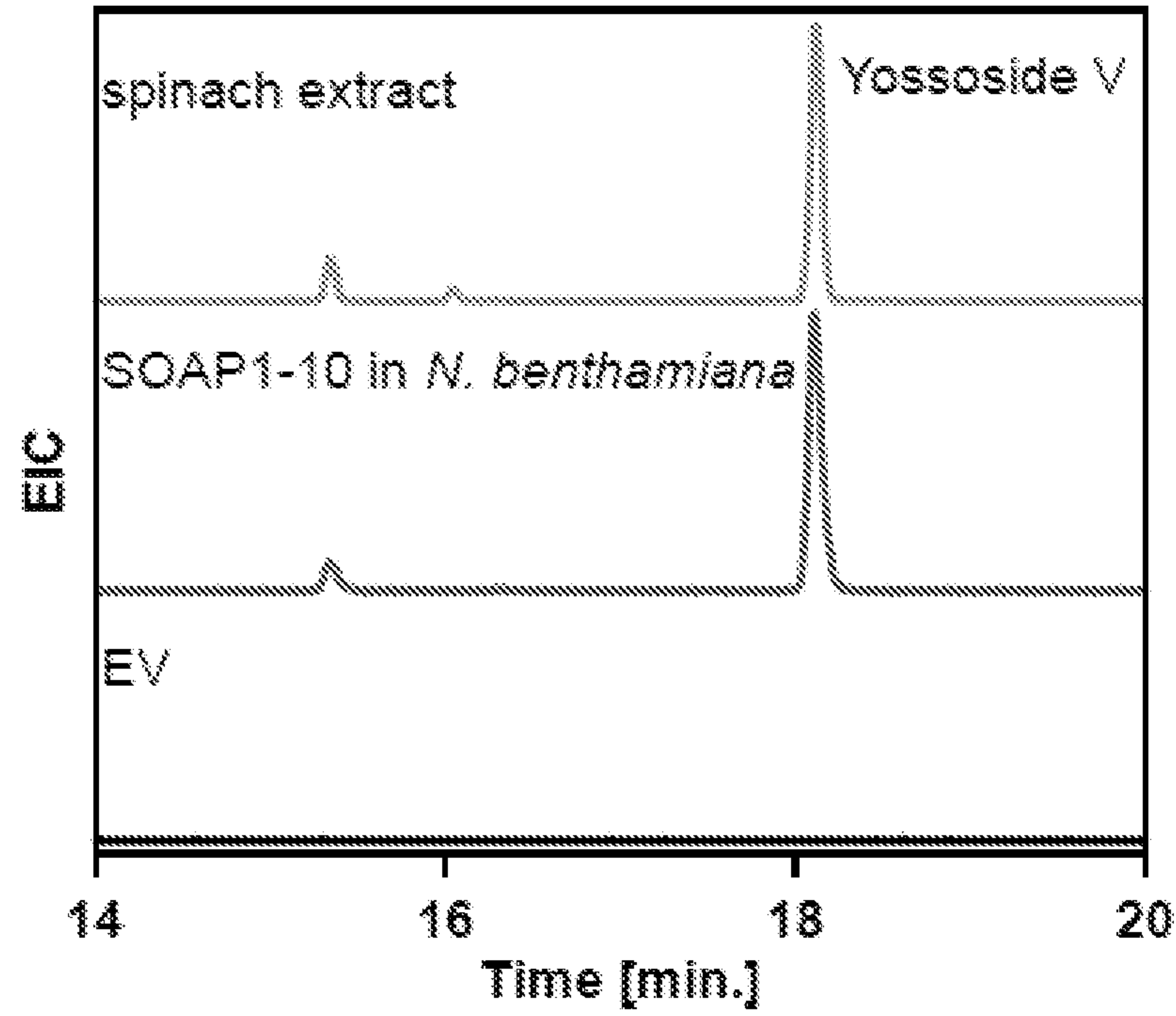


FIGURE 33F

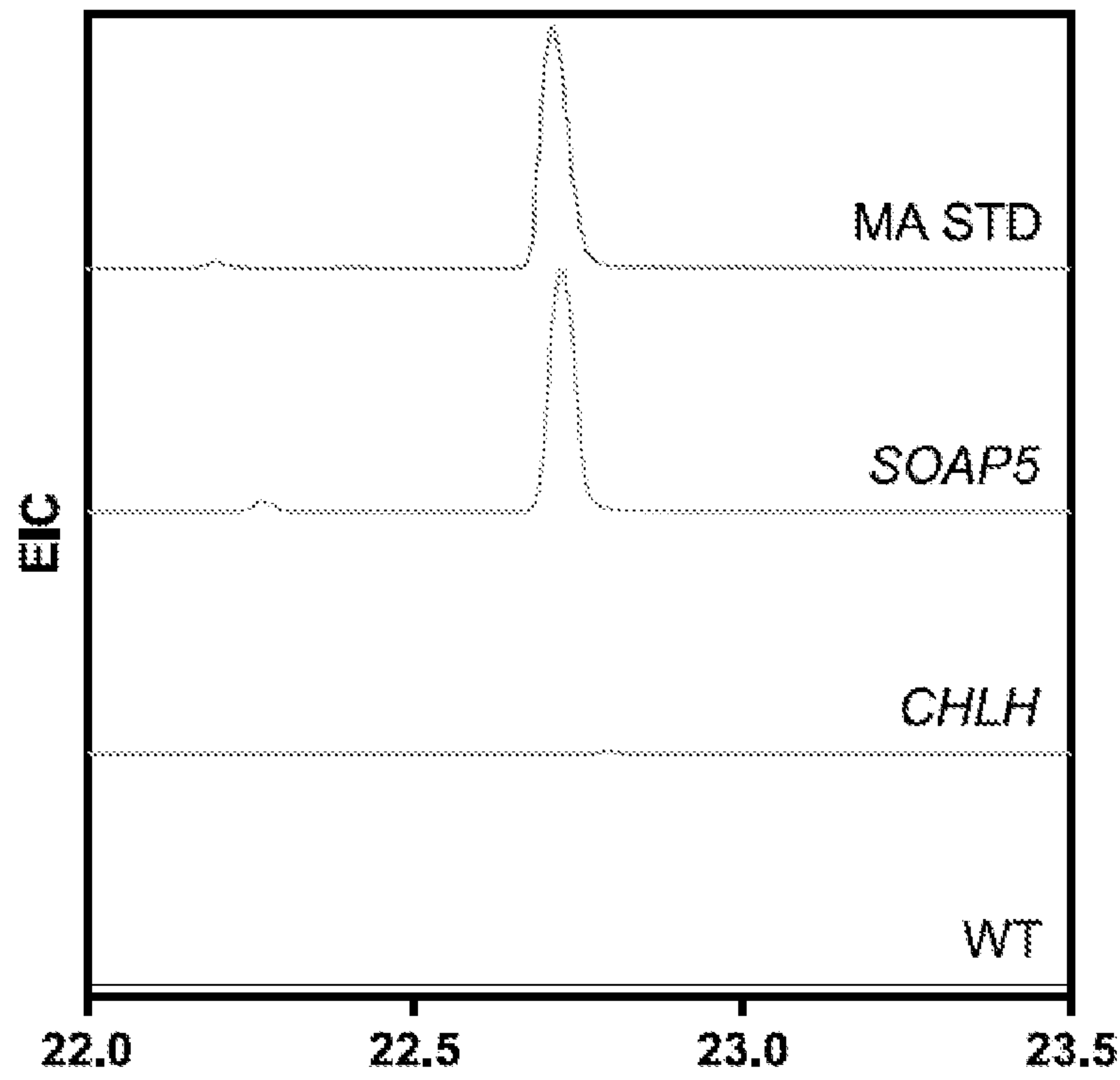


FIGURE 34A

MS/MS of medicagenic acid from sample (25V) MS/MS of medicagenic acid STD (25V)

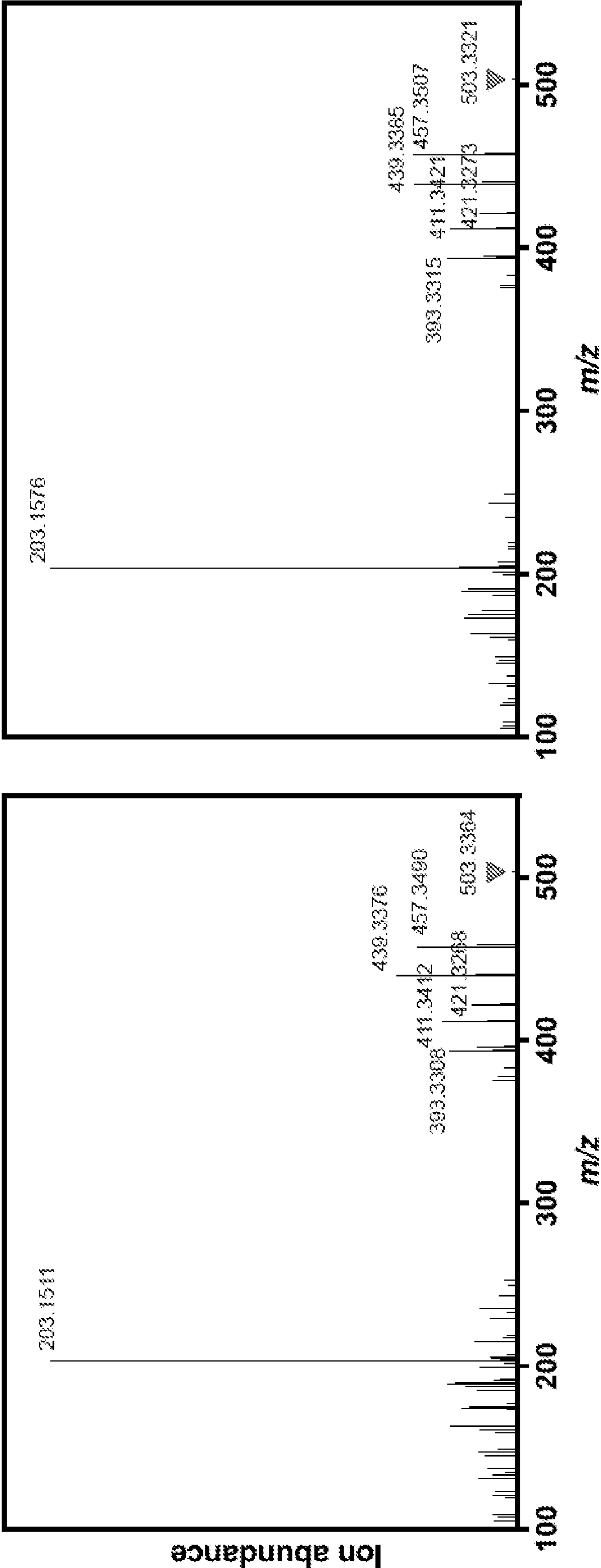


FIGURE 34B

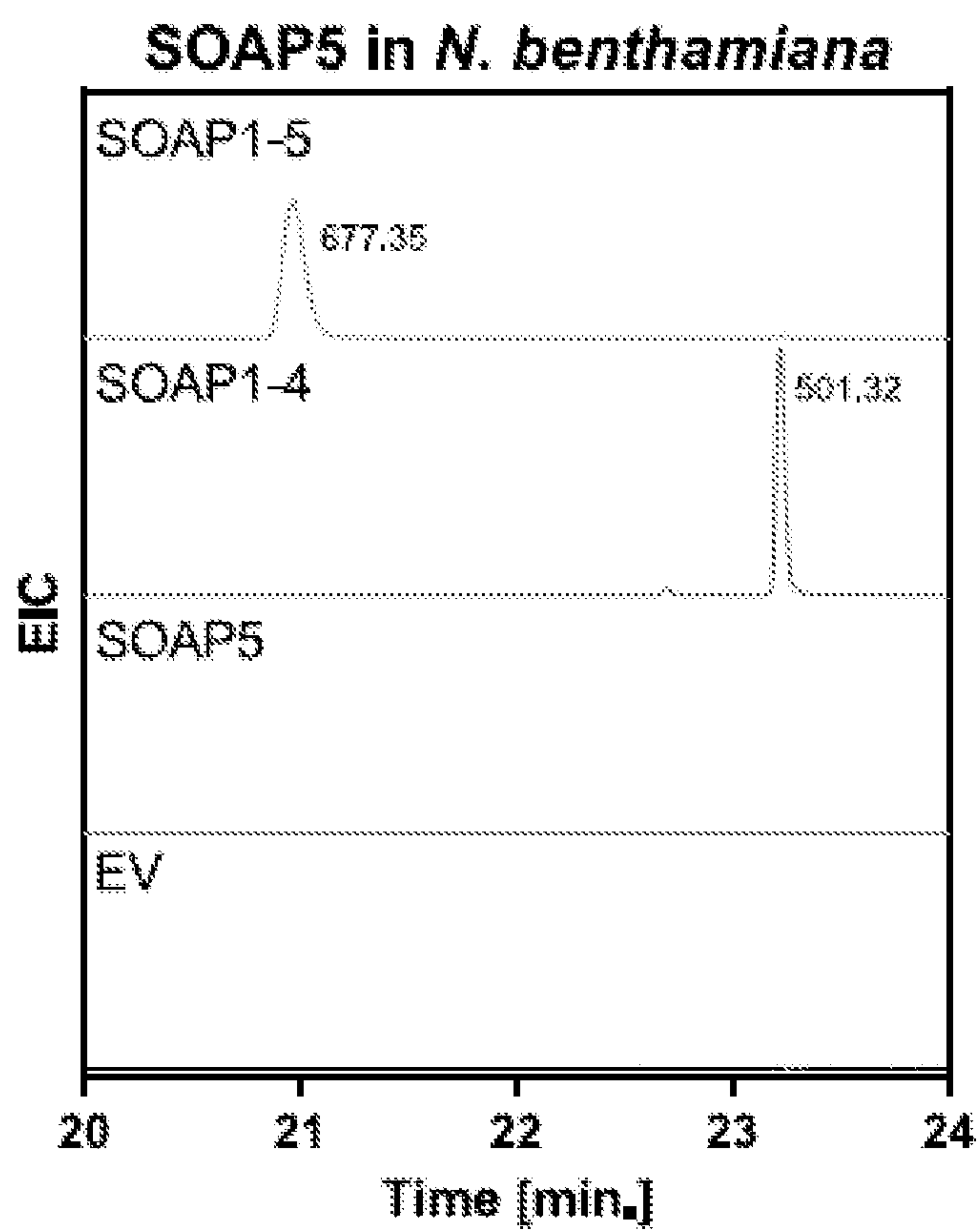


FIGURE 35A

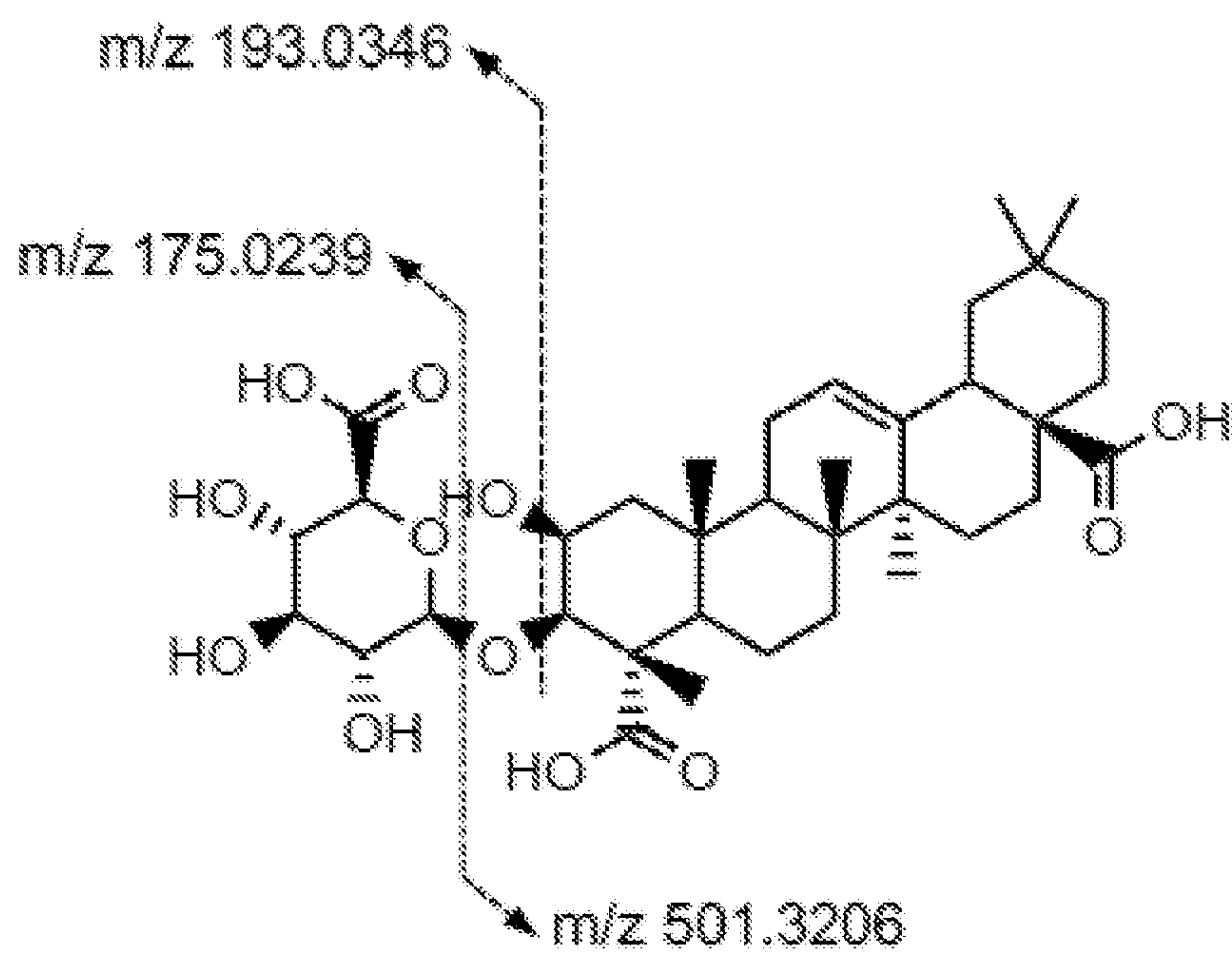


FIGURE 35B

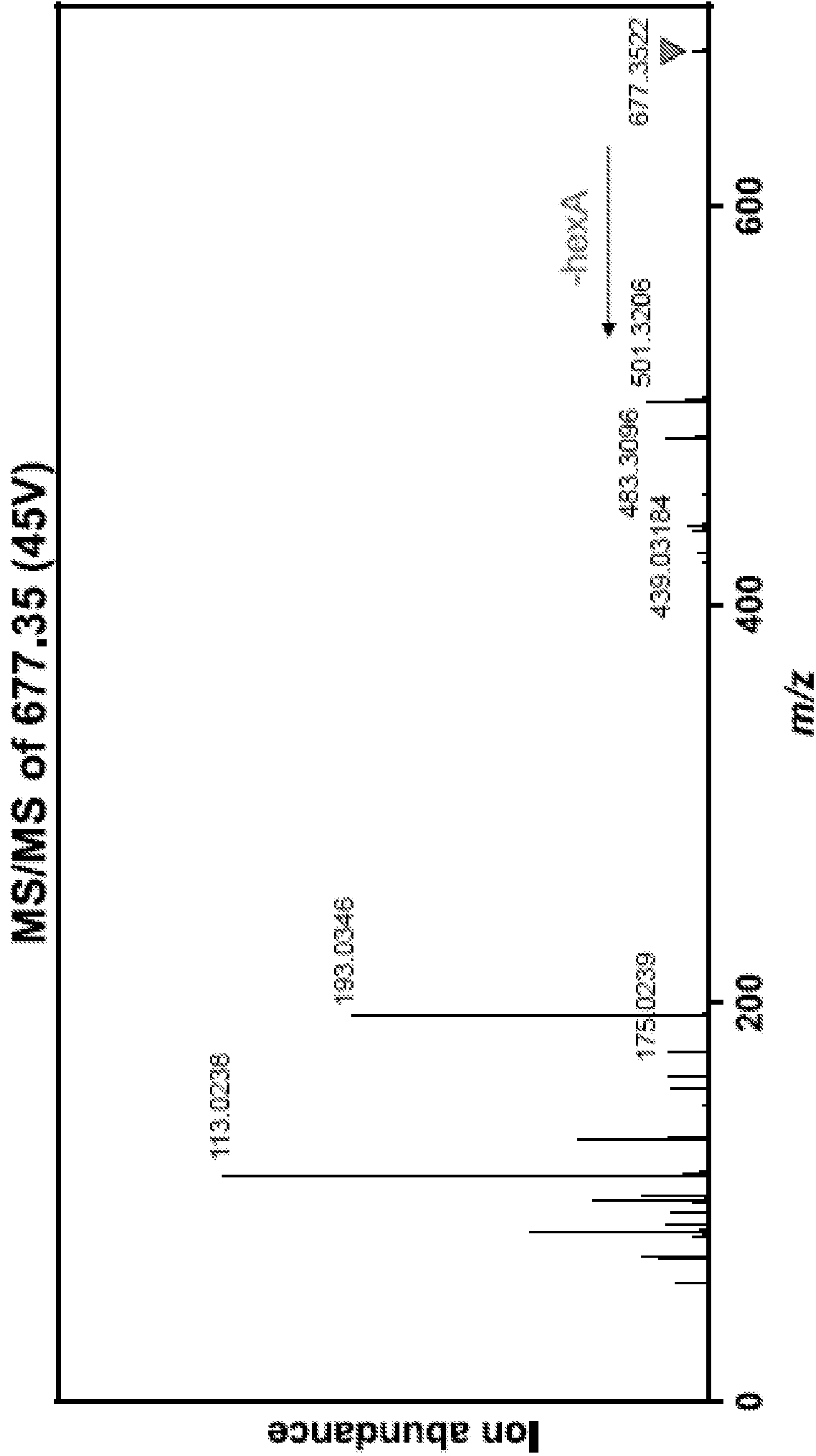


FIGURE 35C

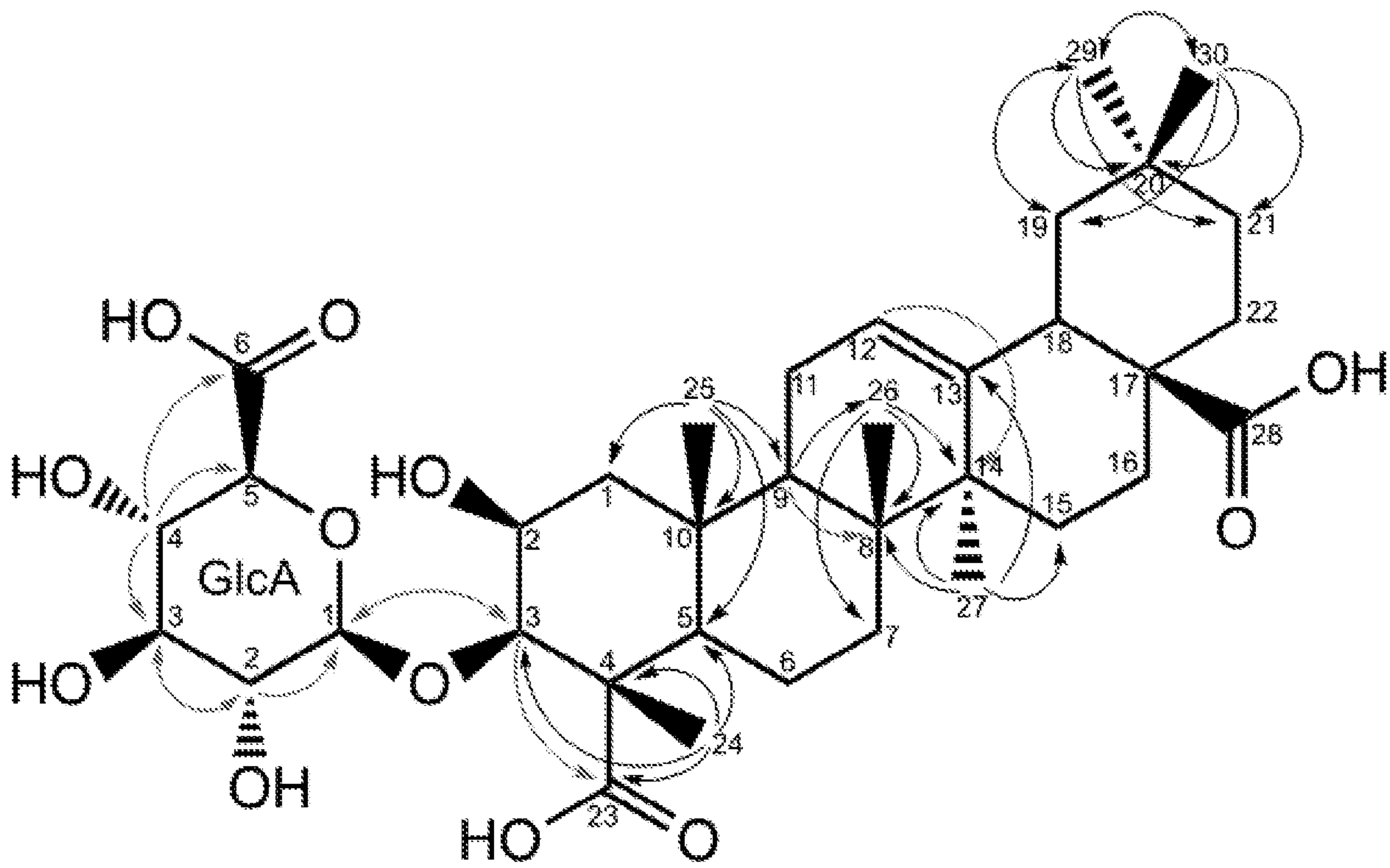


FIGURE 35D

Oleanolic acid 3-GlcA

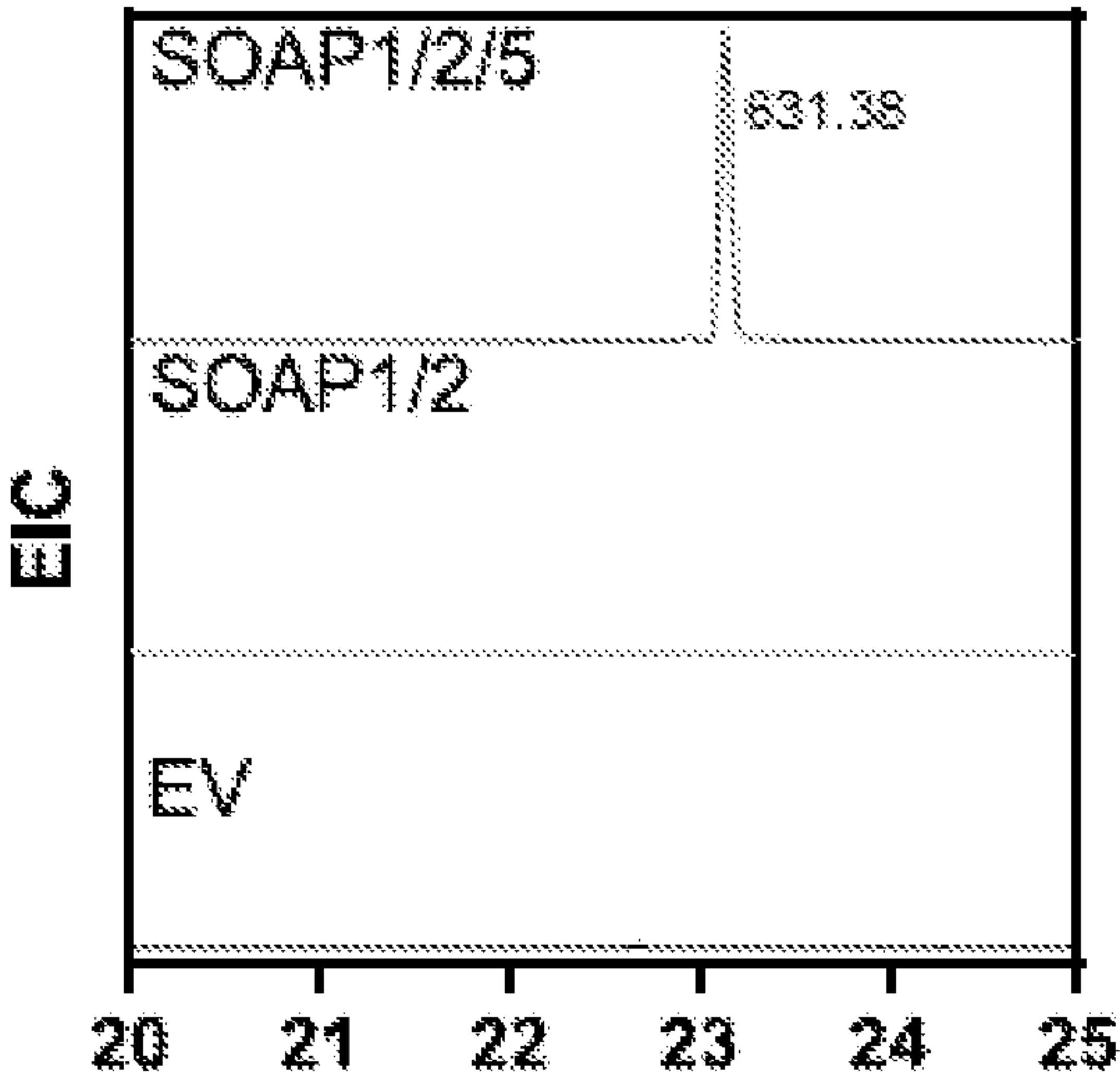


FIGURE 36A

Augustic acid 3-GlcA

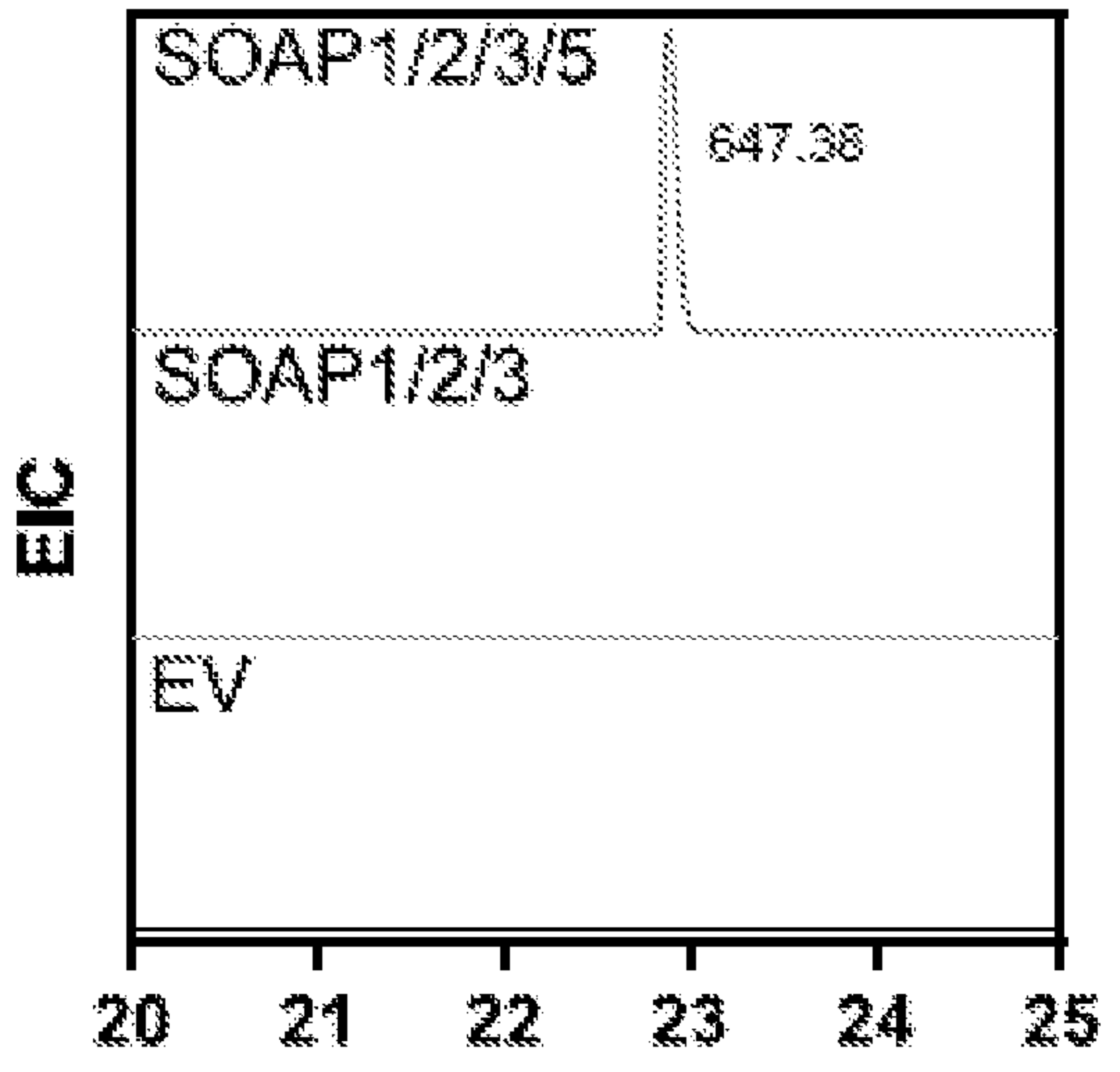


FIGURE 36B

Gypsogenic acid 3-GlcA

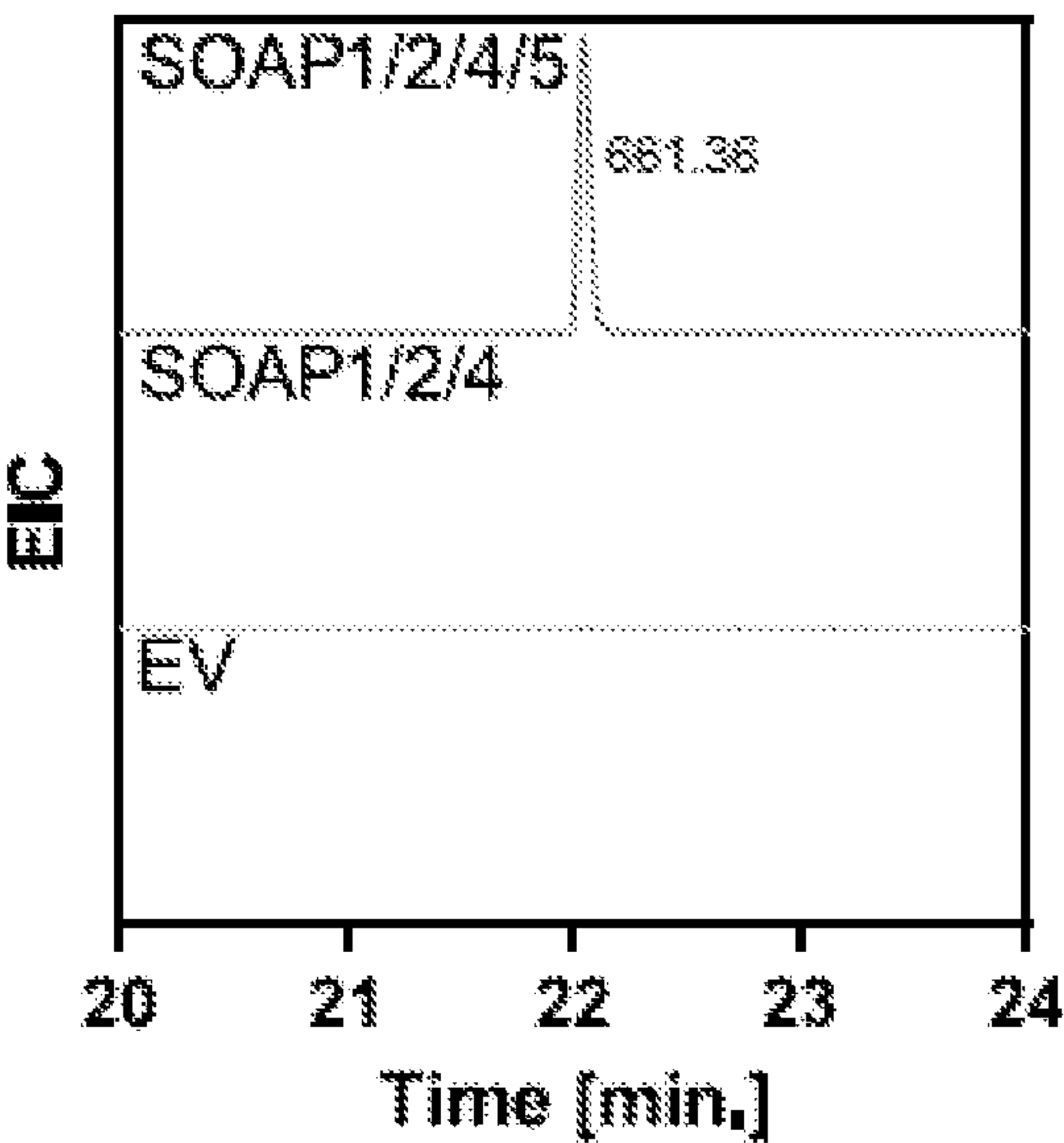


FIGURE 36C

MS/MS of 631.38 (40V)

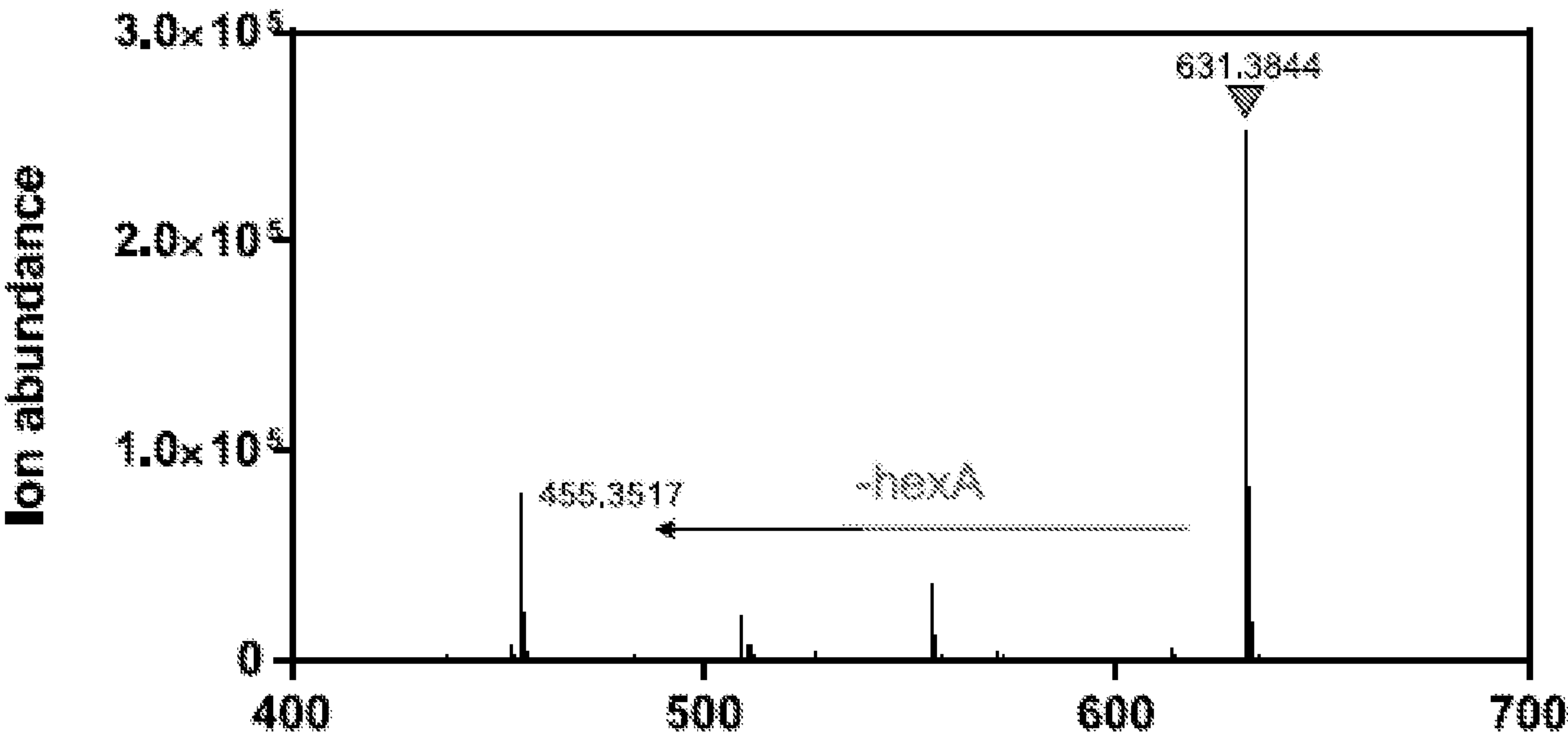


FIGURE 36D

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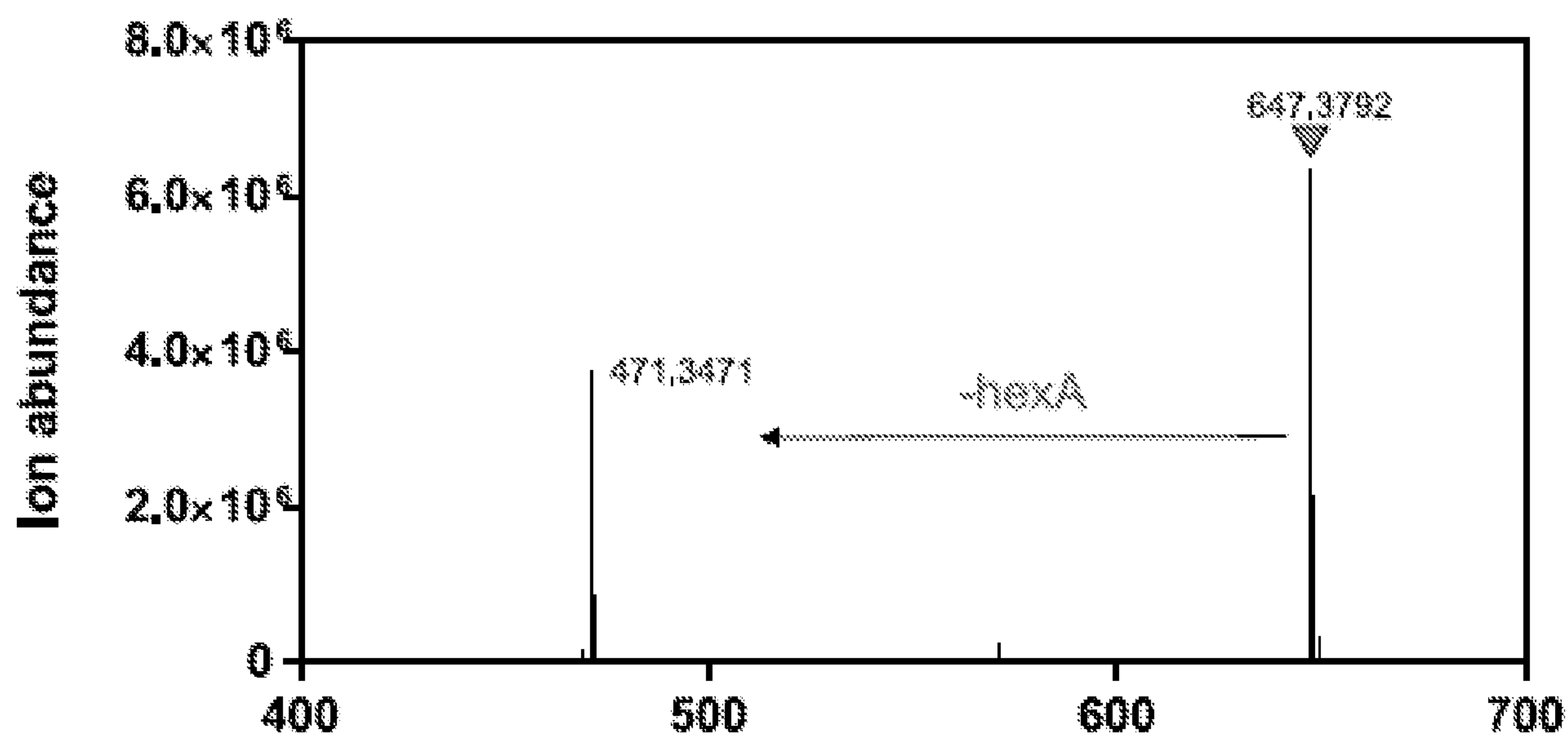
MS/MS of 647.38 (40V)

FIGURE 36E

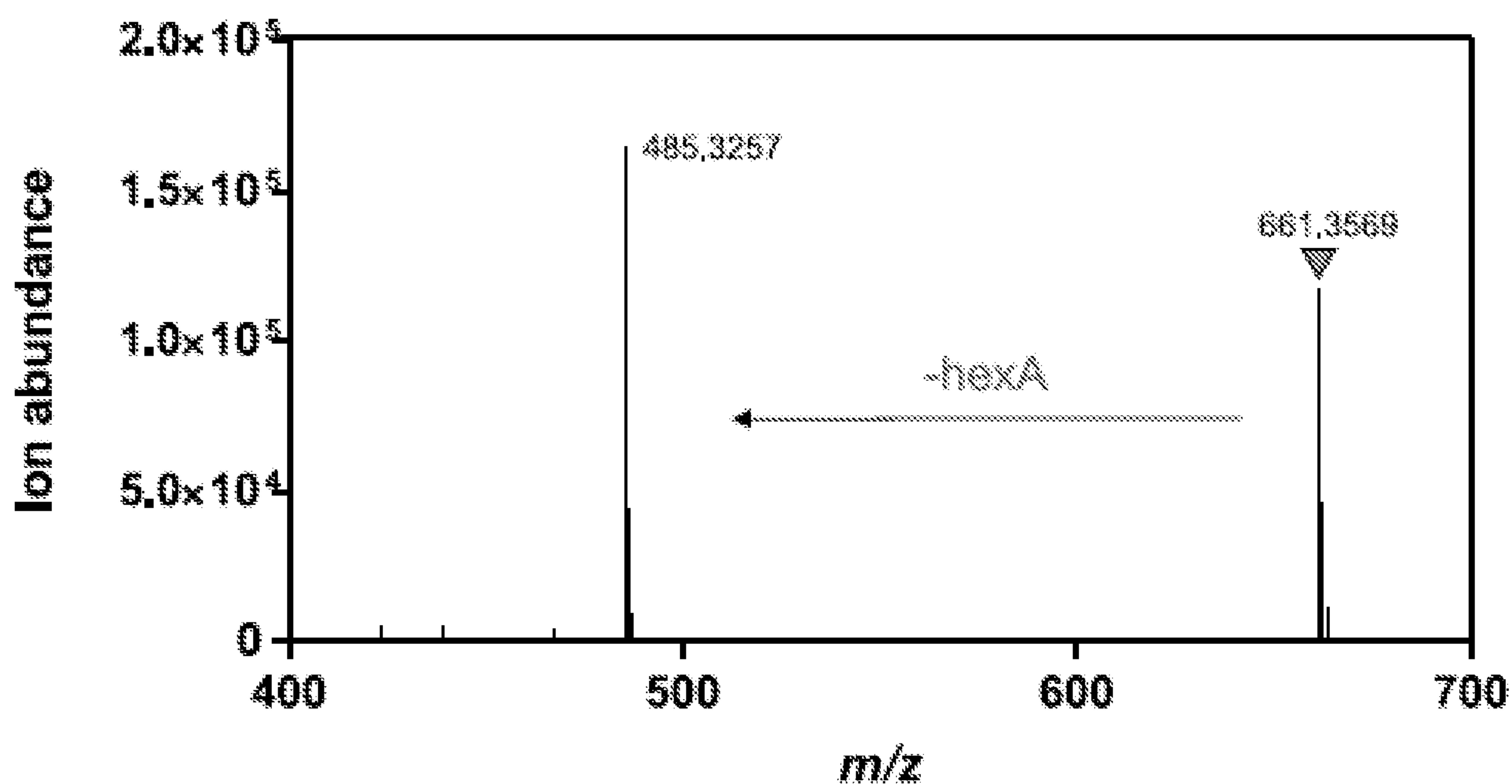
MS/MS of 661.36 (40V)

FIGURE 36F

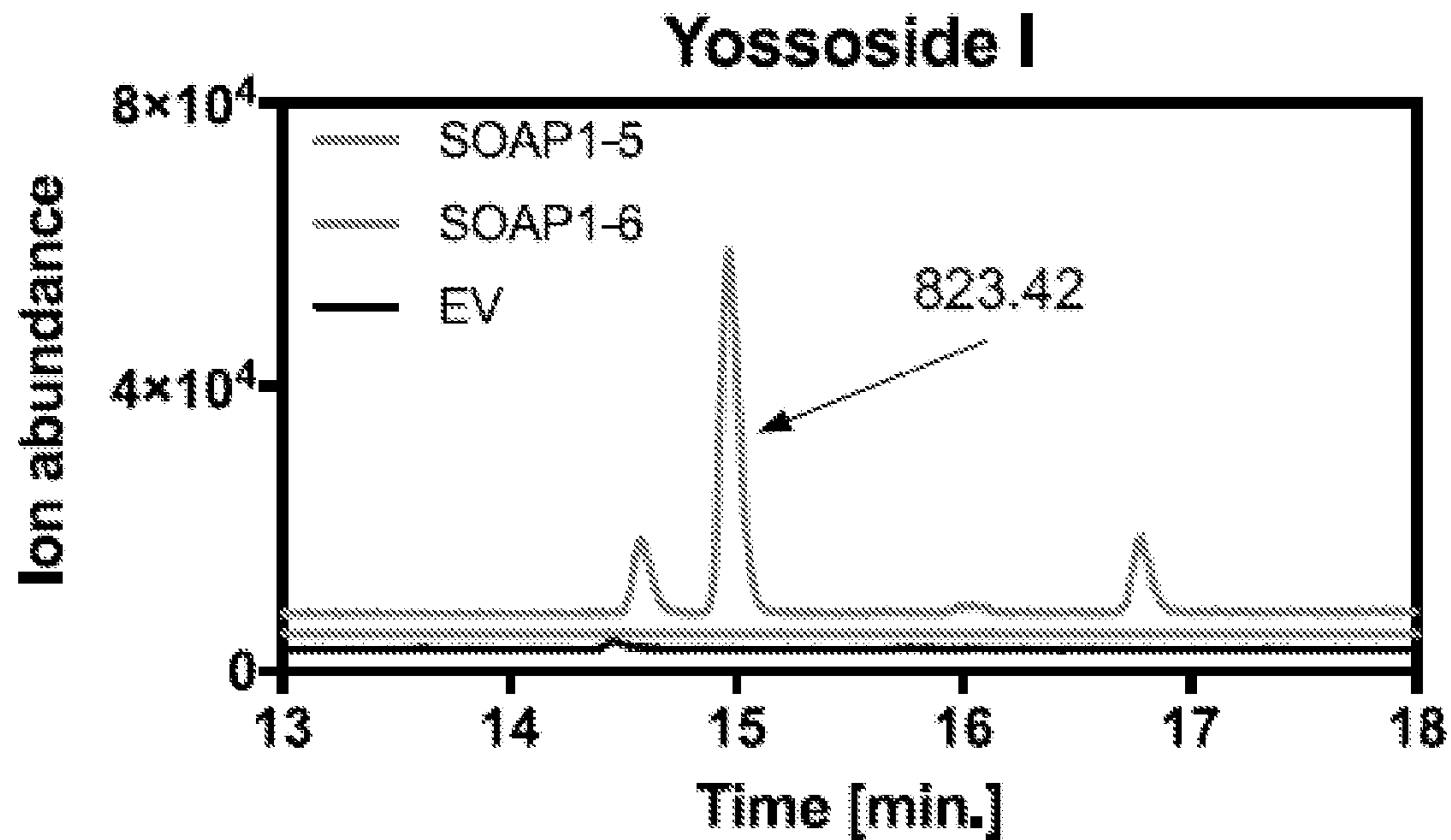


FIGURE 37A

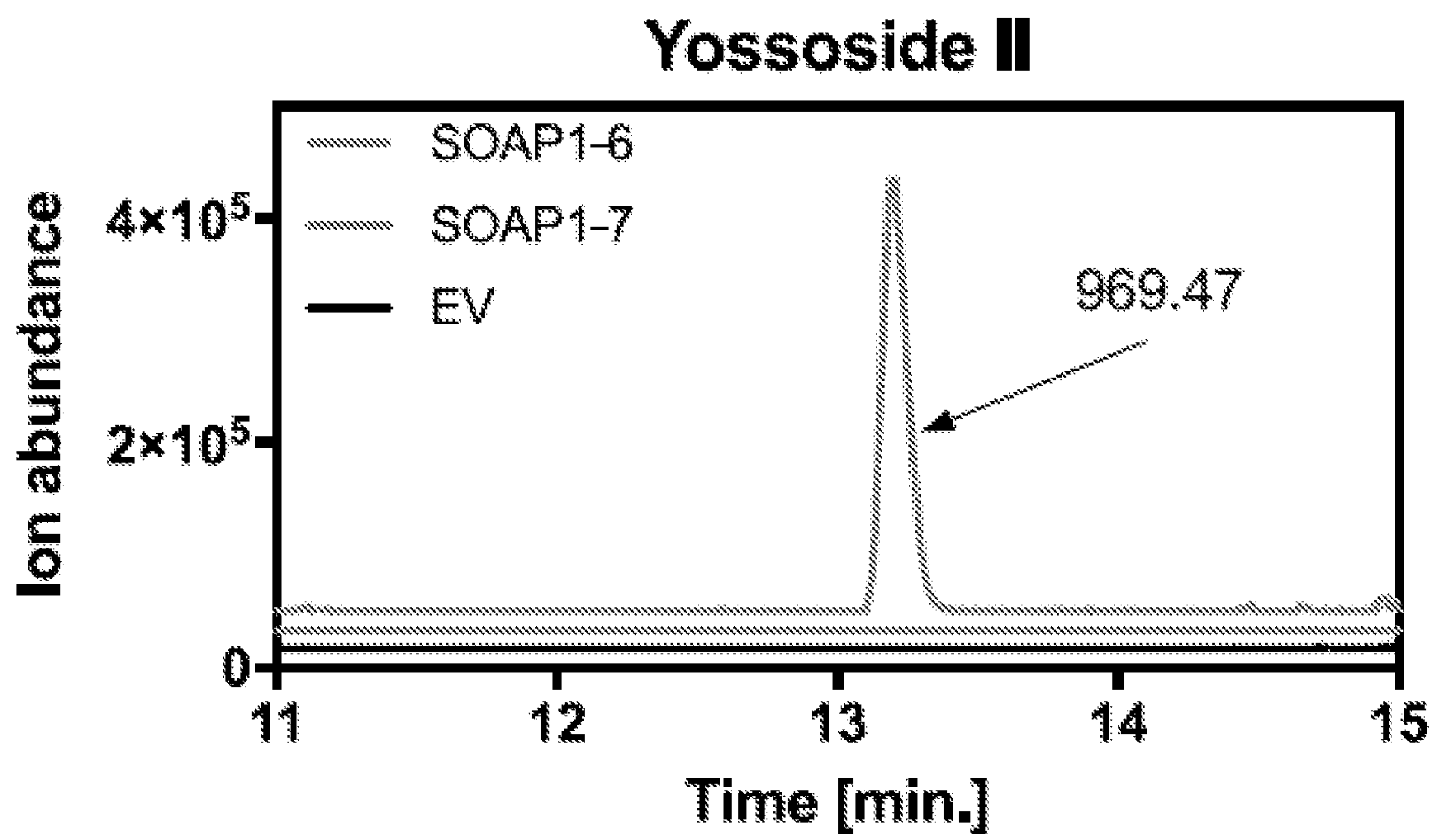


FIGURE 37B

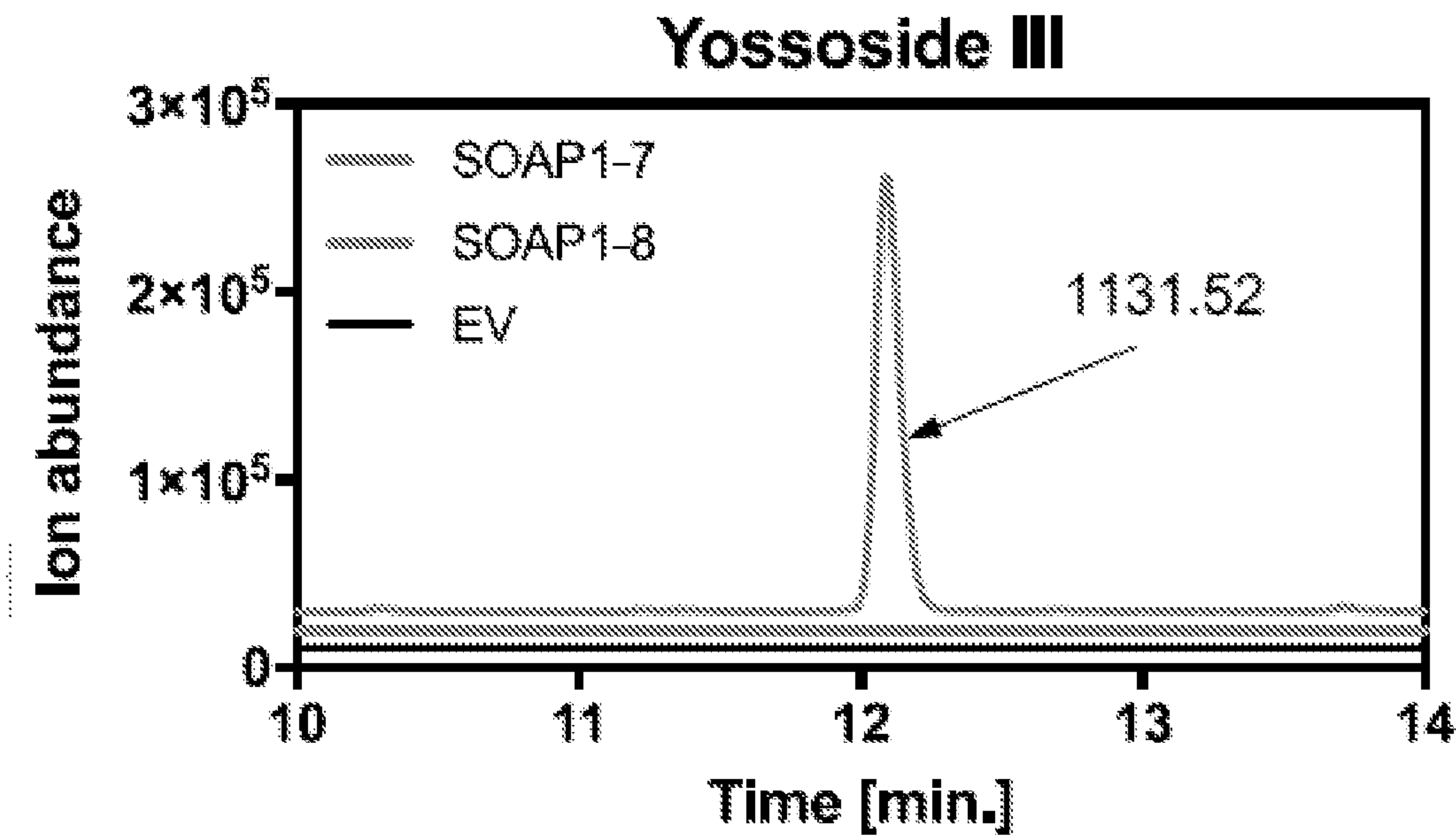


FIGURE 37C

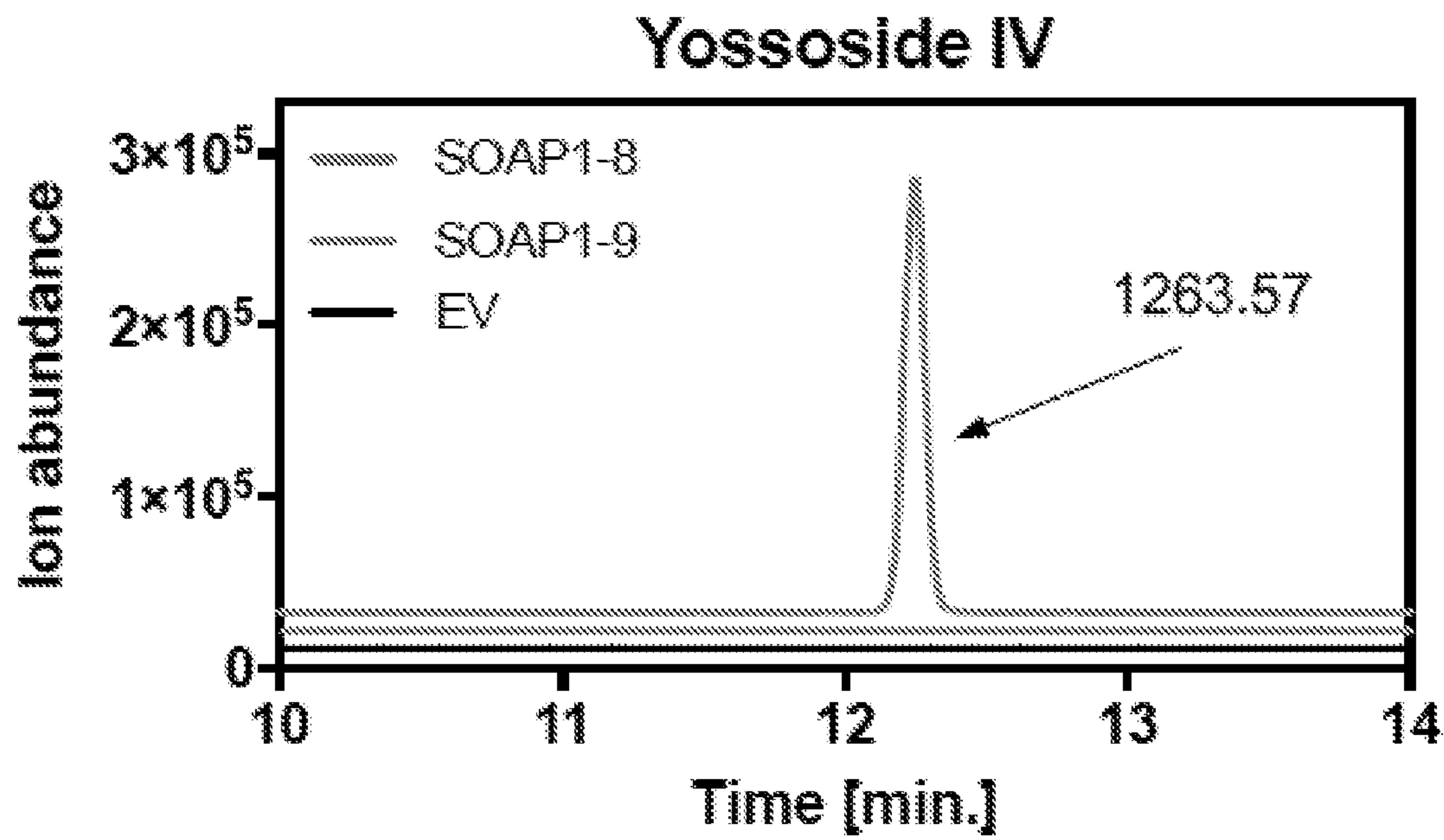


FIGURE 37D

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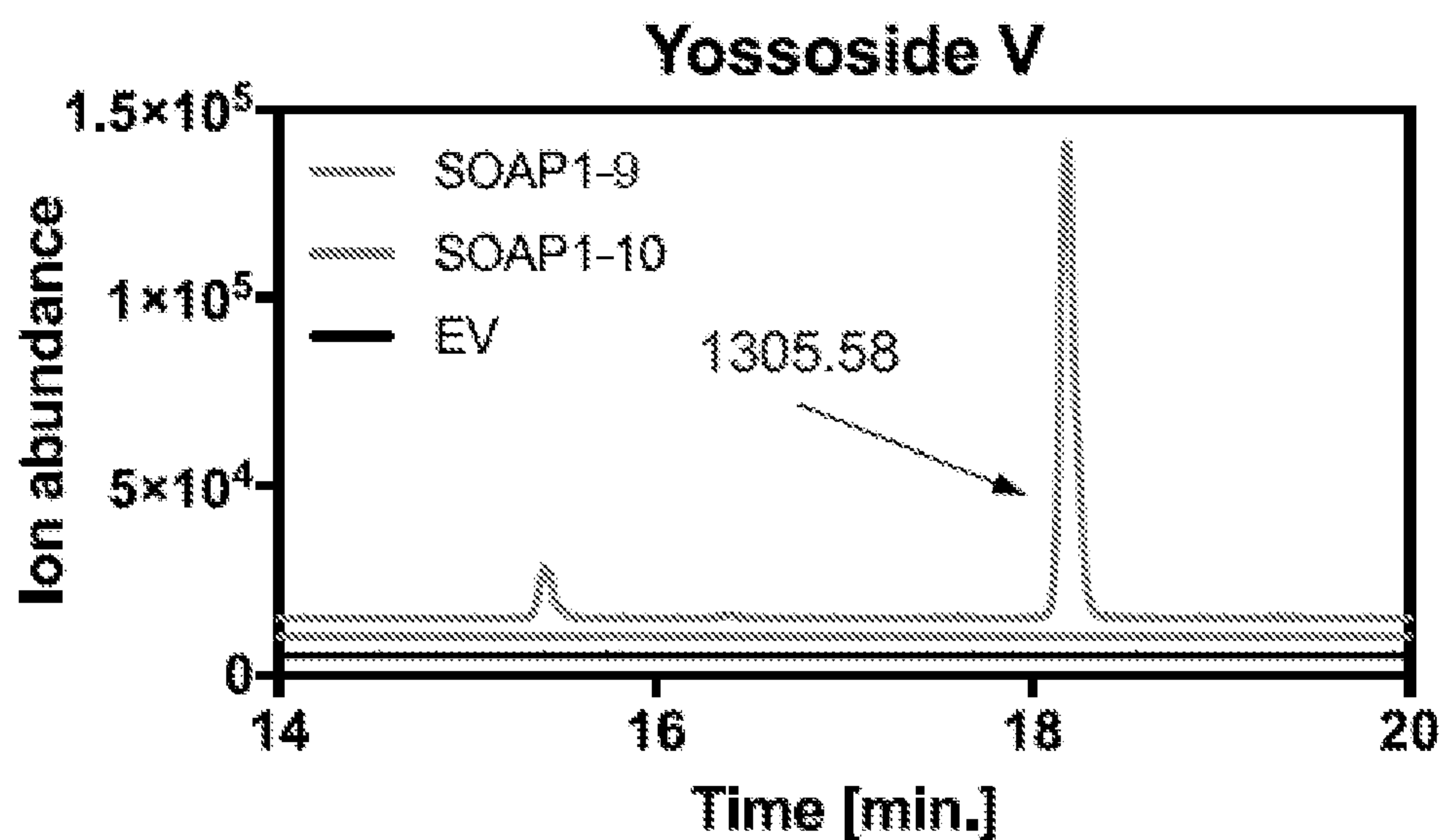


FIGURE 37E

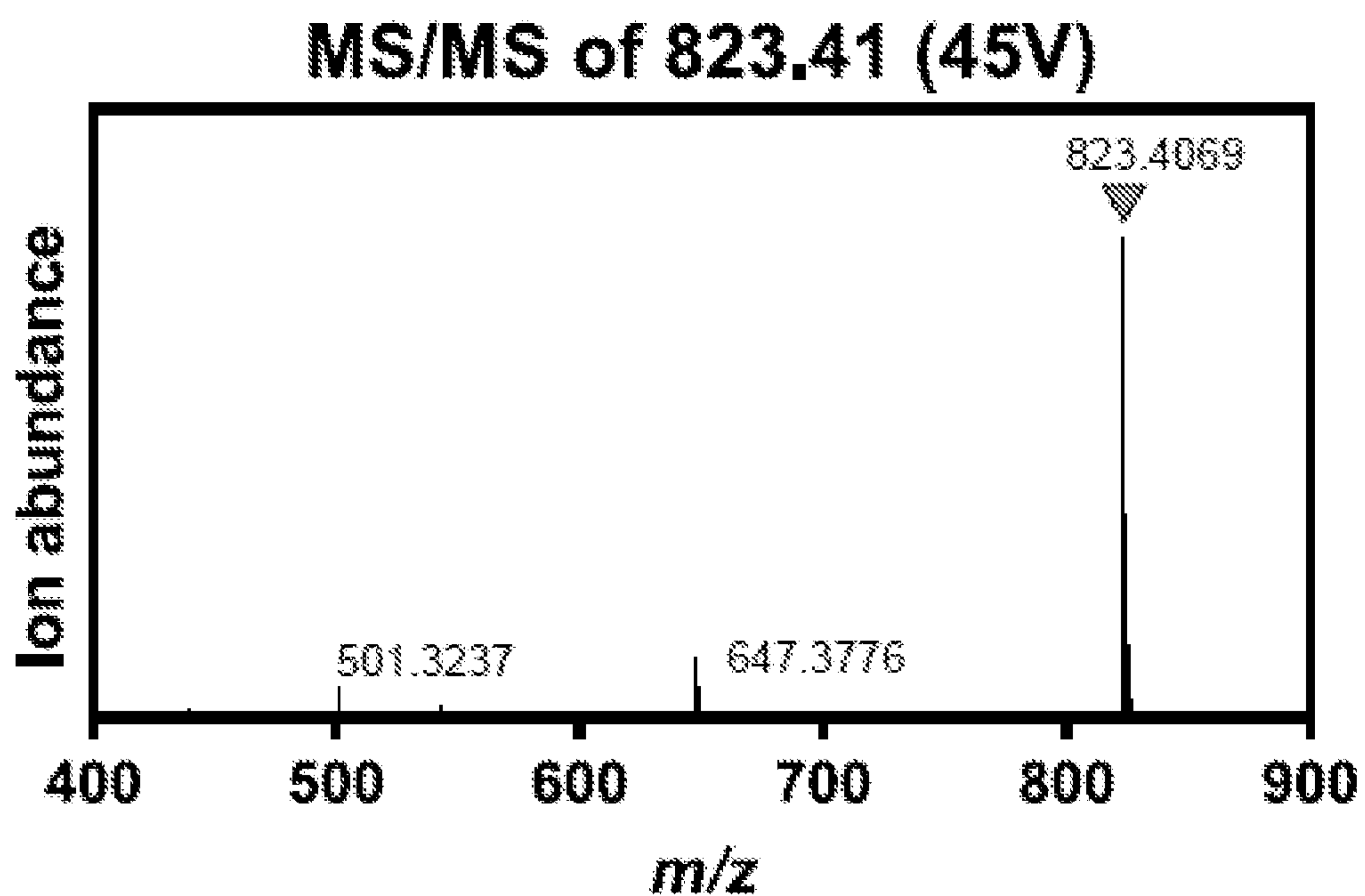


FIGURE 38A

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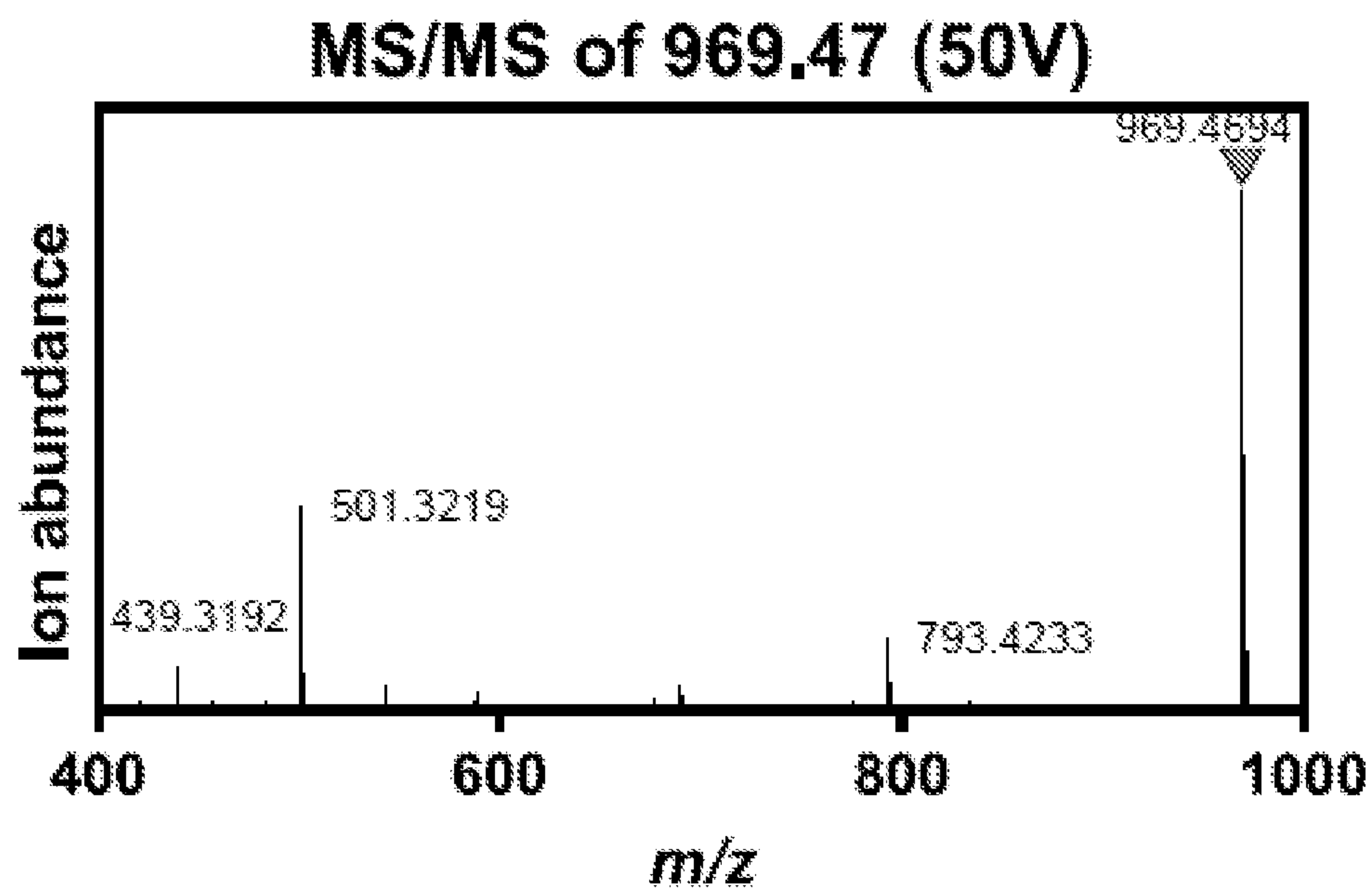


FIGURE 38B

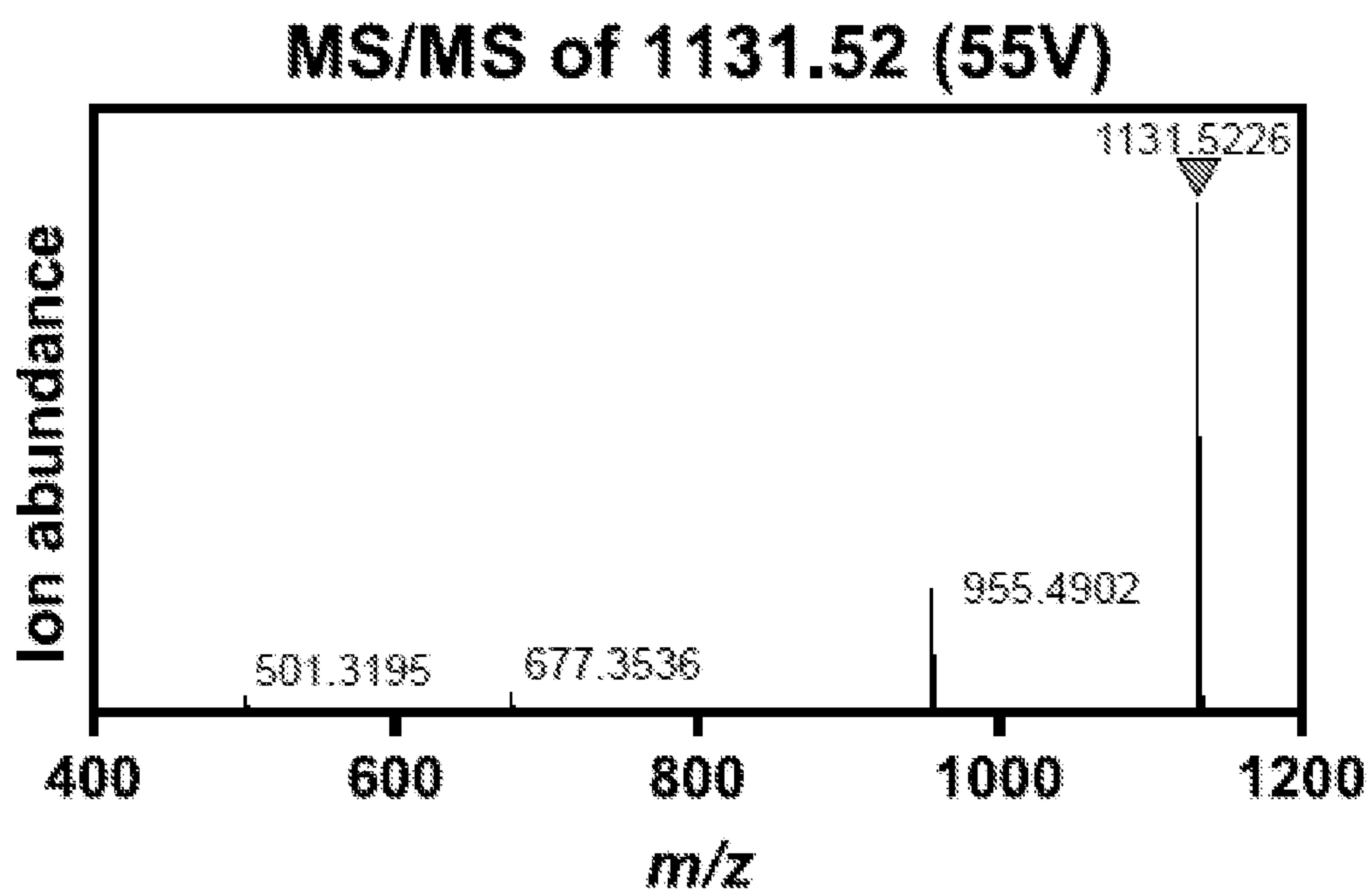


FIGURE 38C

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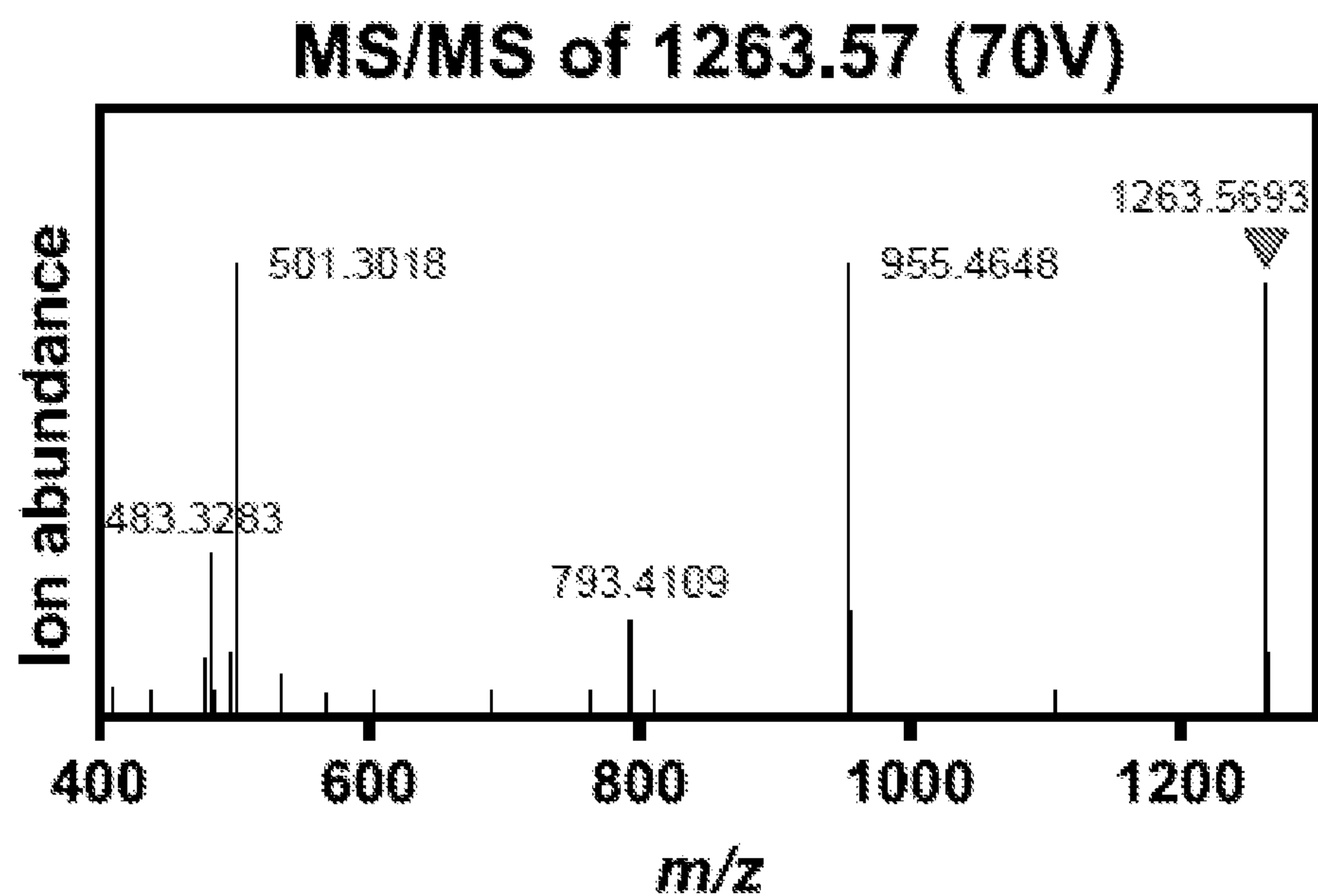


FIGURE 38D

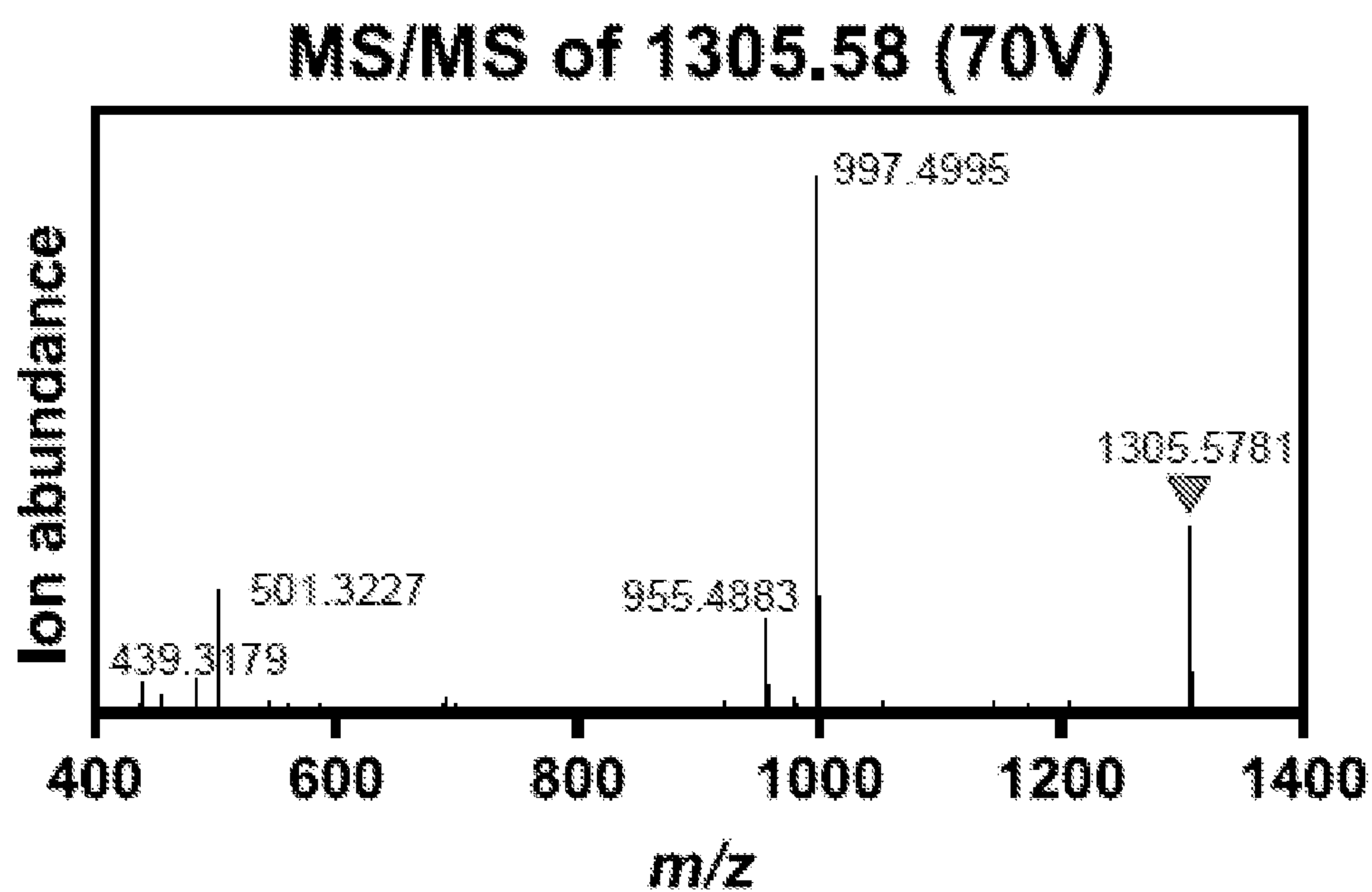


FIGURE 38E

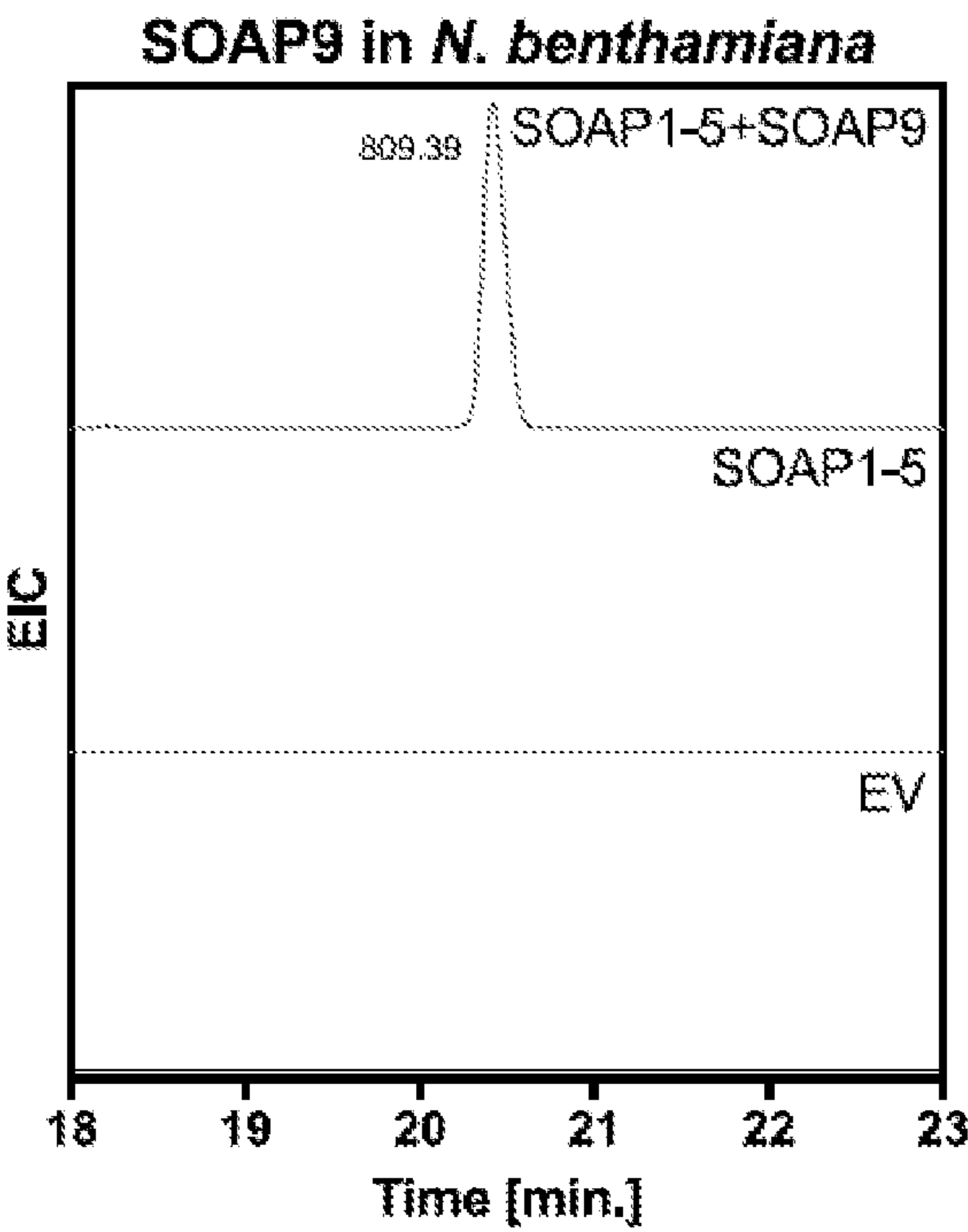


FIGURE 39A

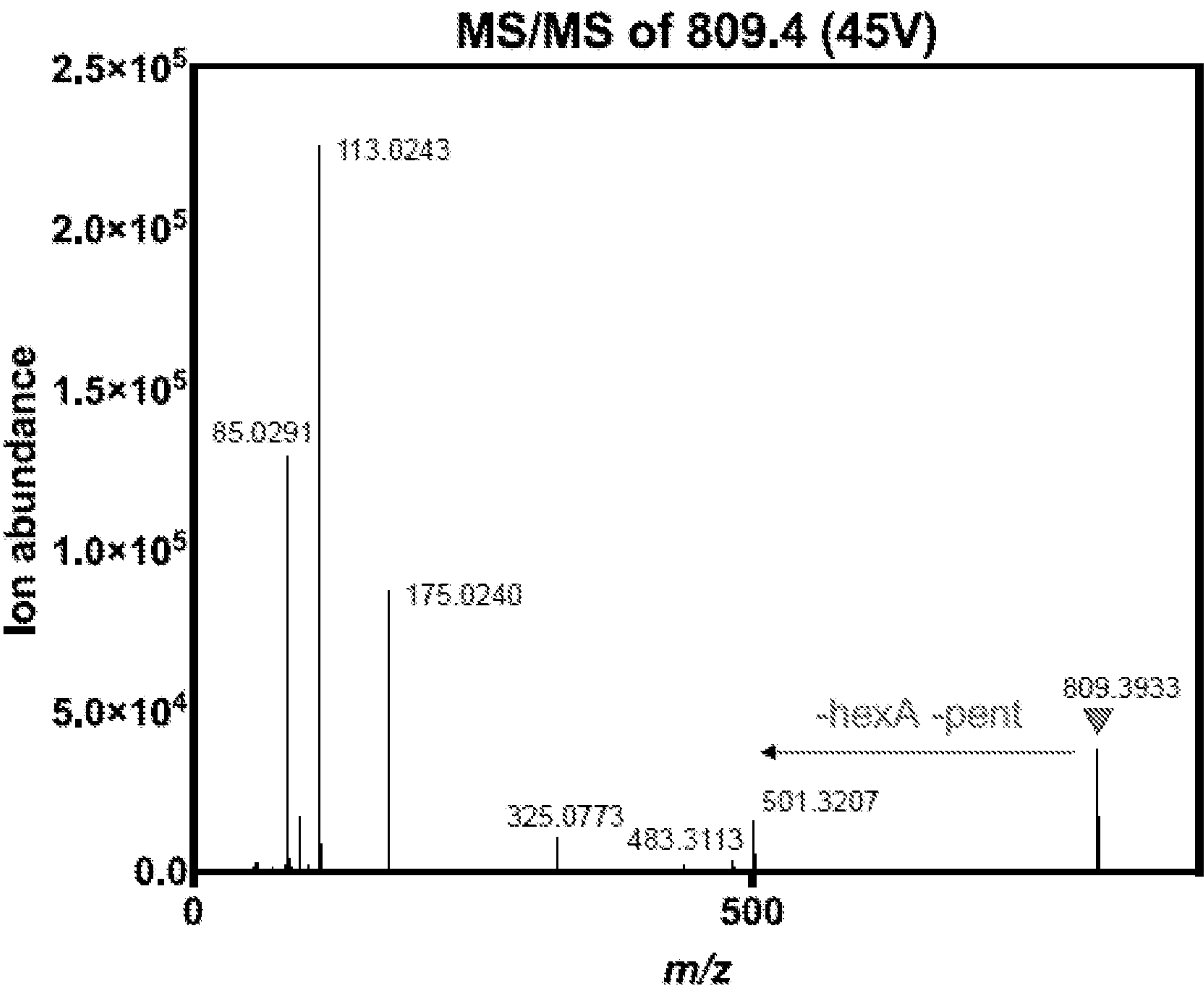


FIGURE 39B

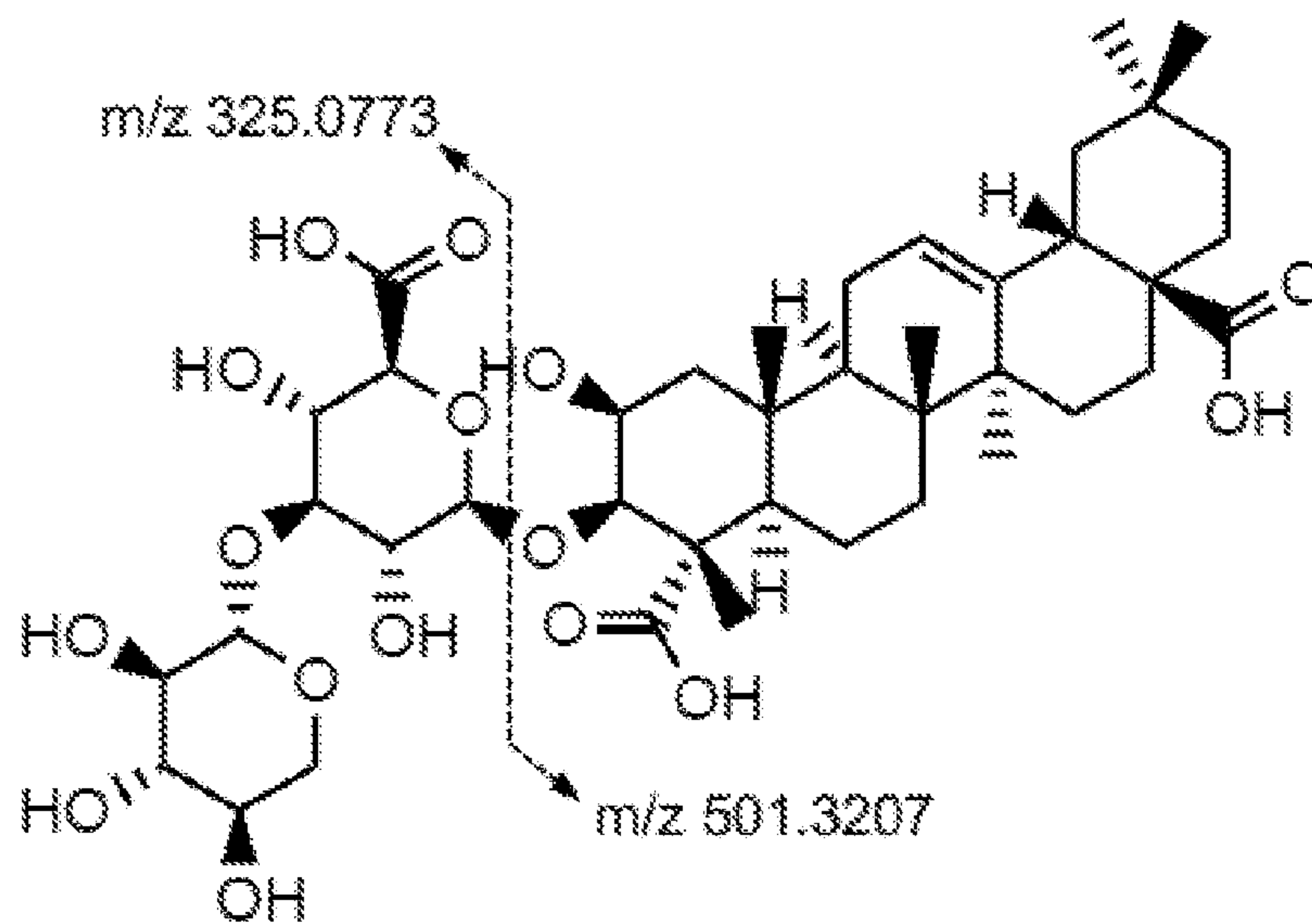


FIGURE 39C

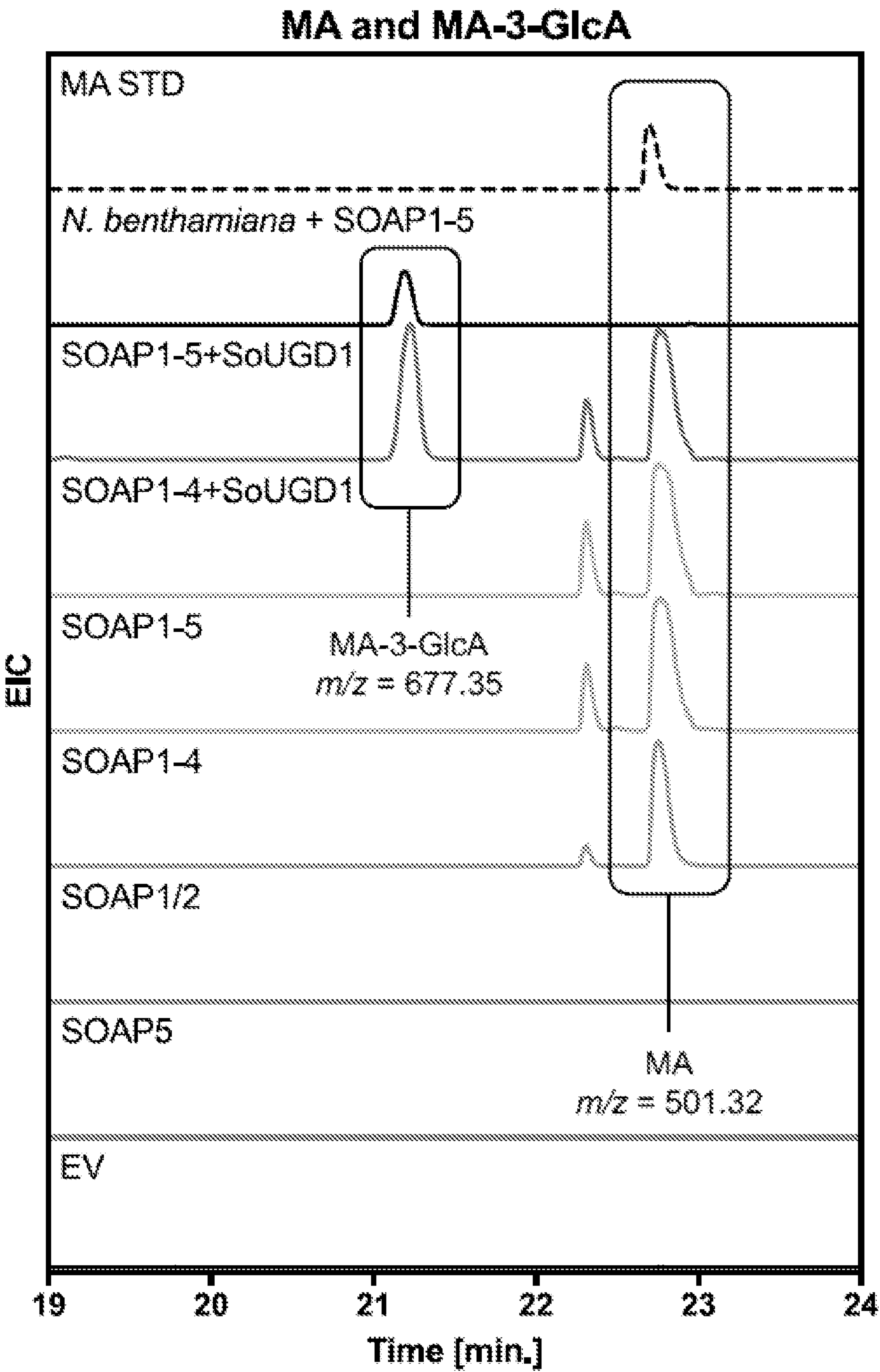


FIGURE 40A

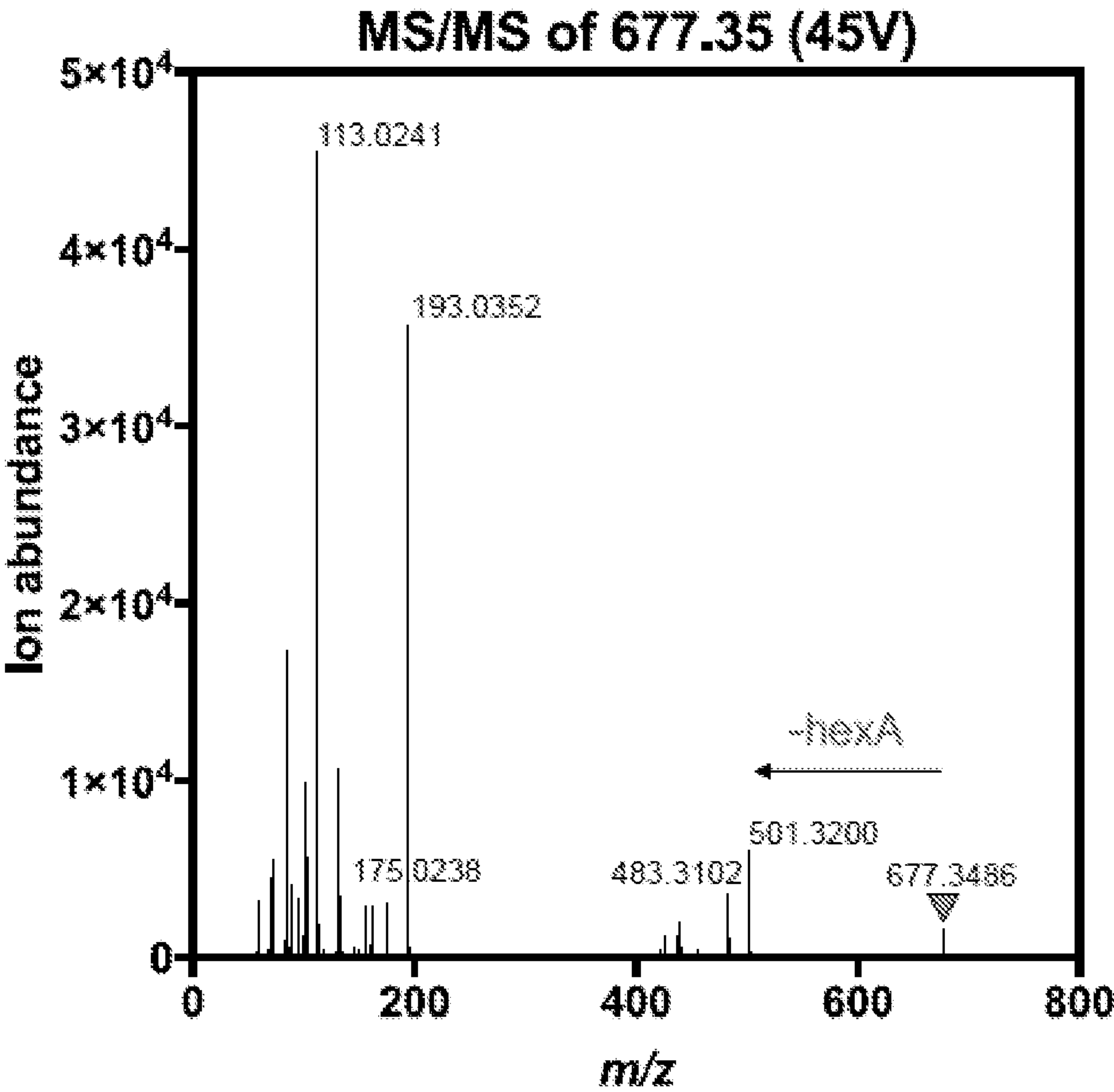


FIGURE 40B

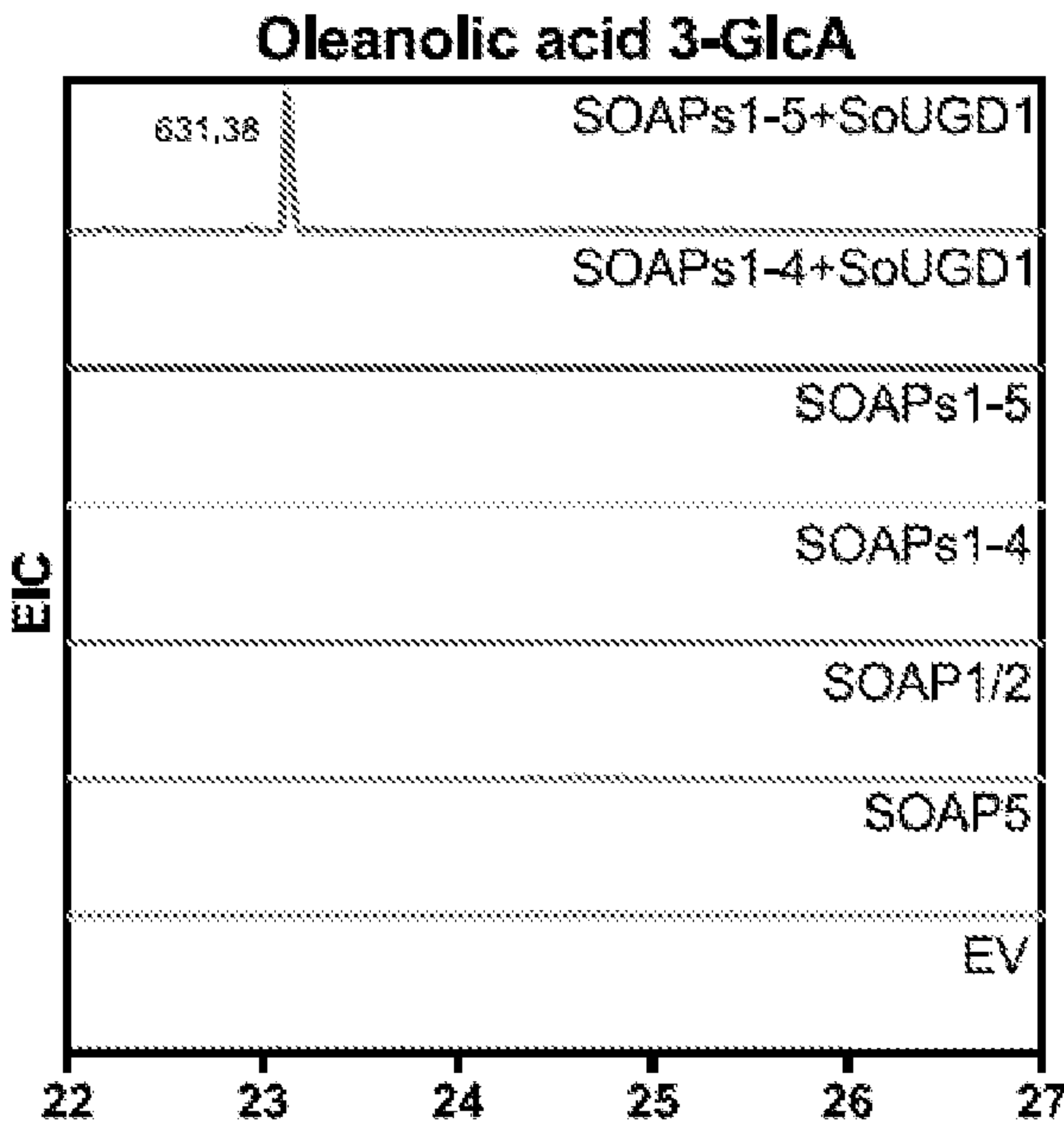


FIGURE 41A

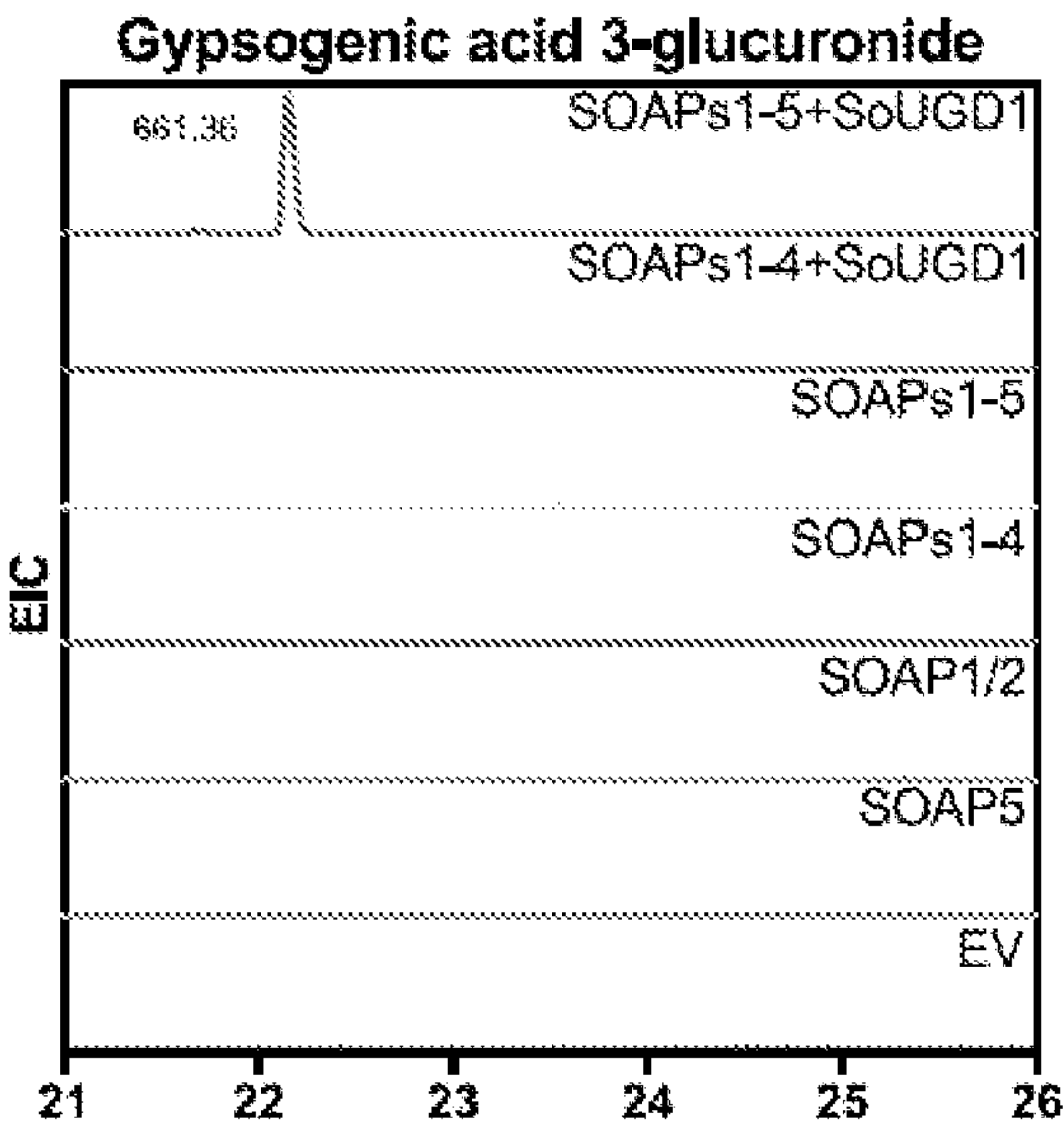


FIGURE 41B

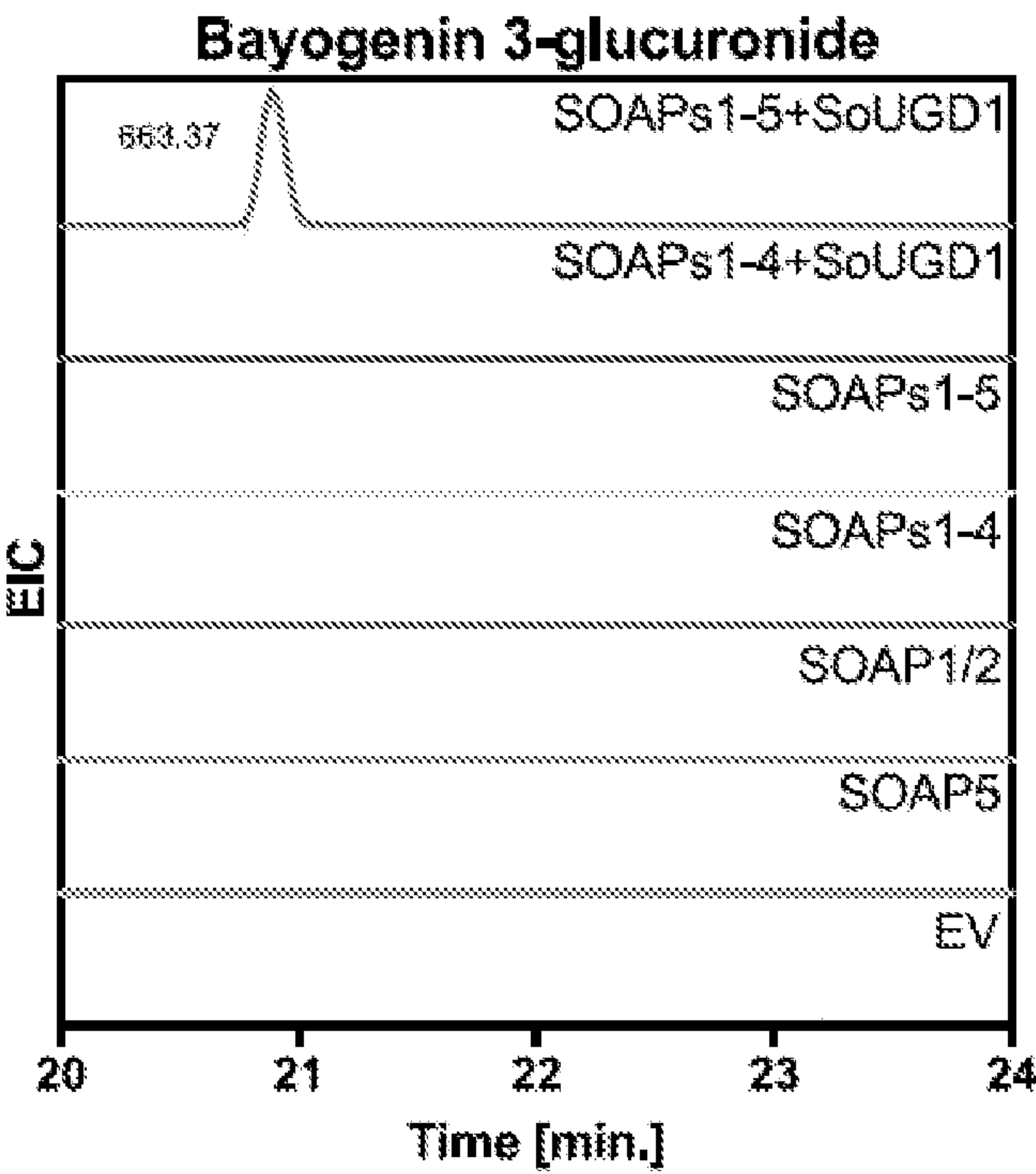


FIGURE 41C

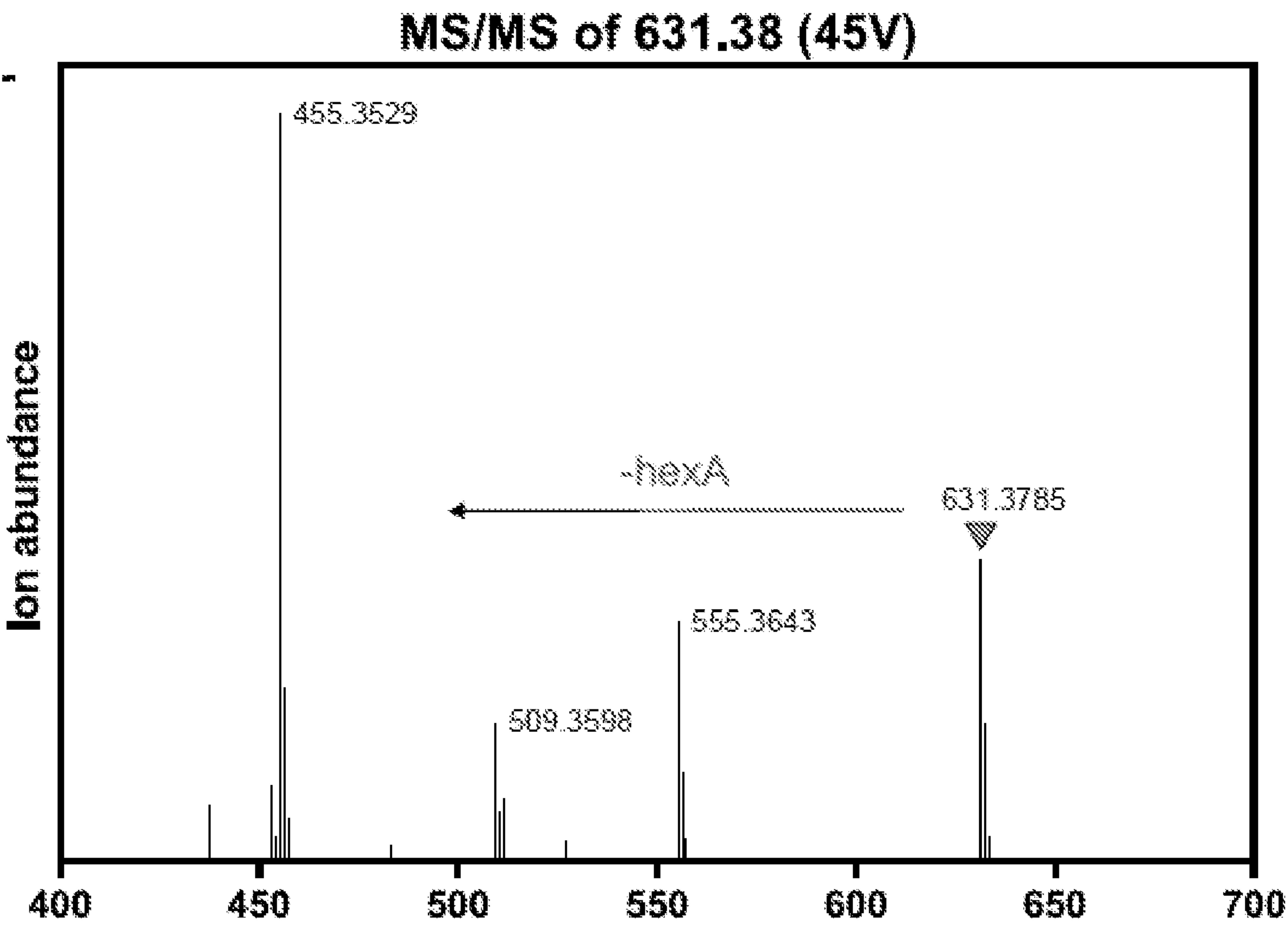


FIGURE 41D

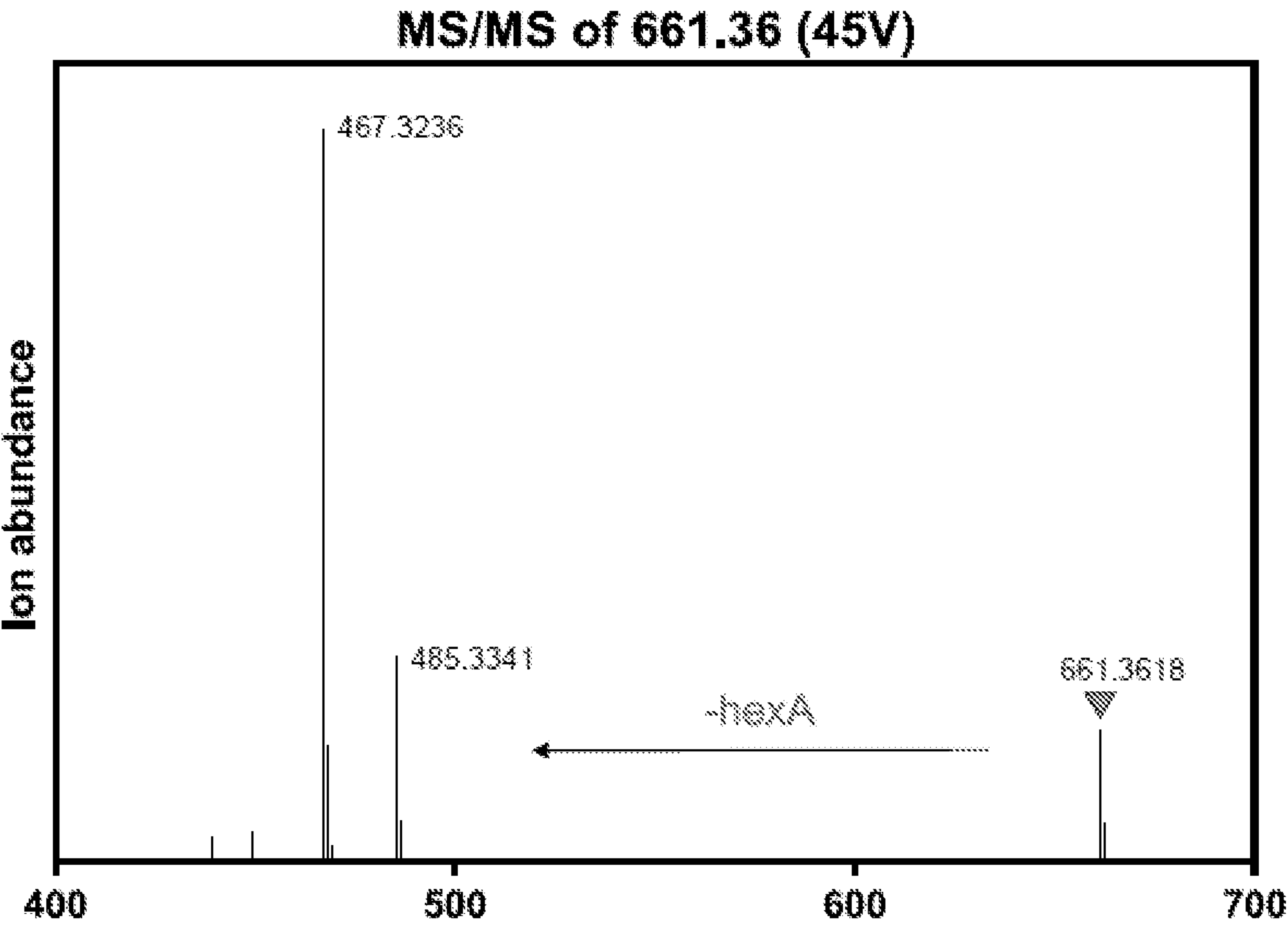


FIGURE 41E

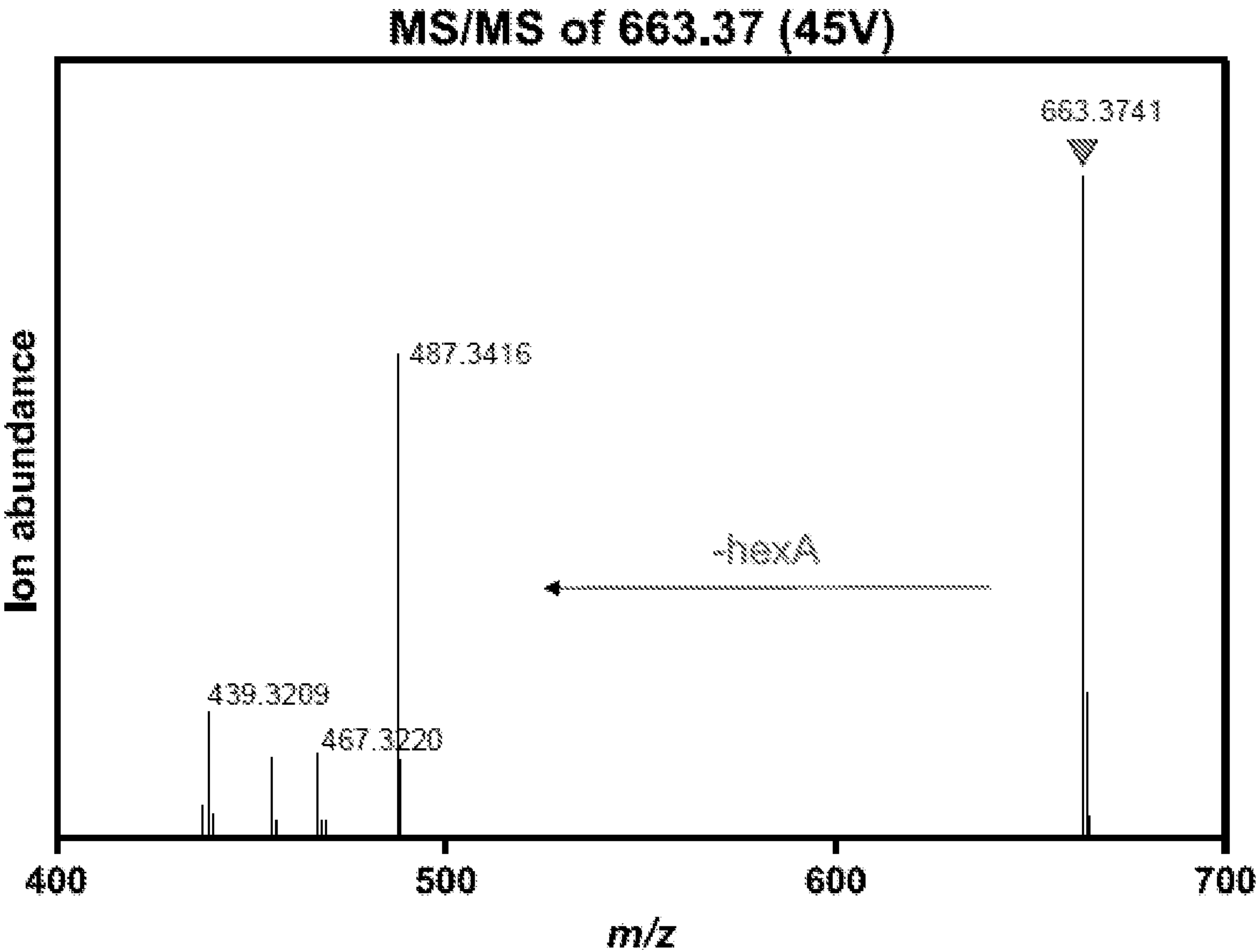


FIGURE 41F

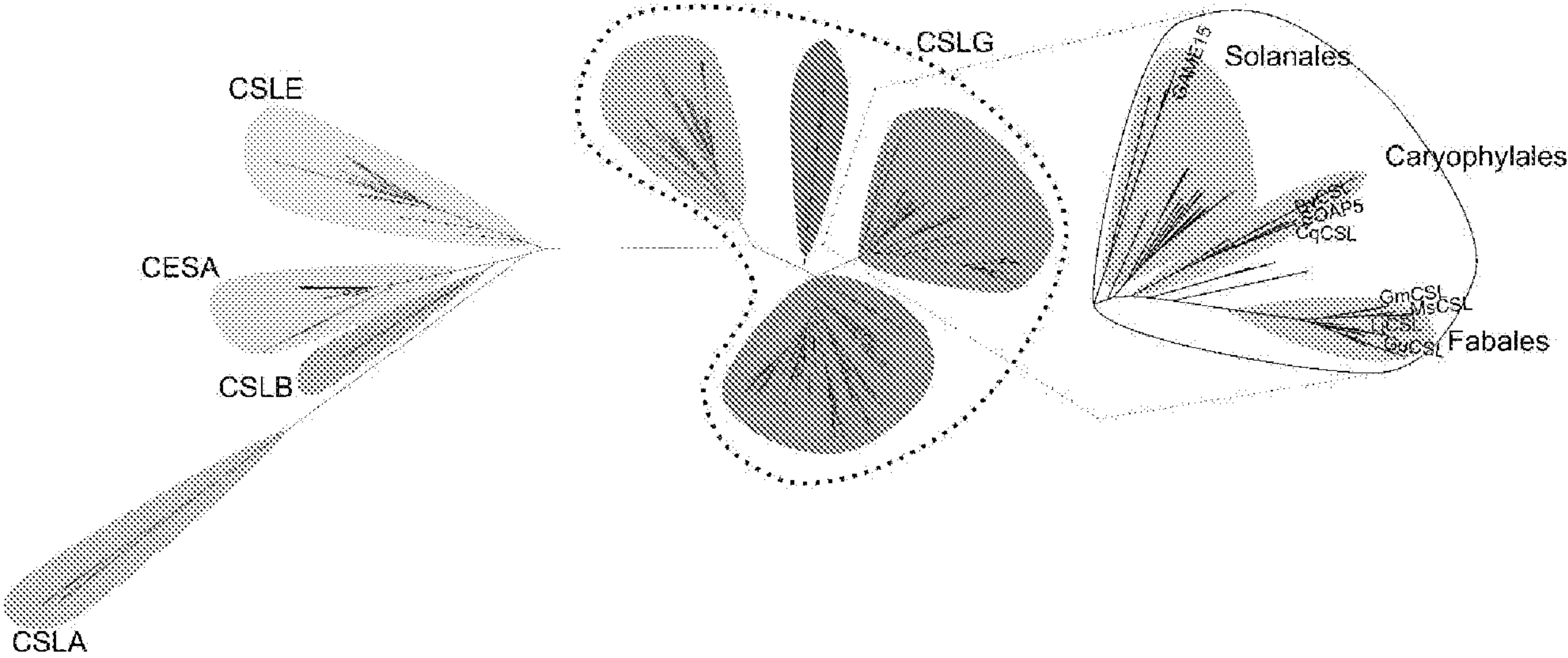


FIGURE 42A

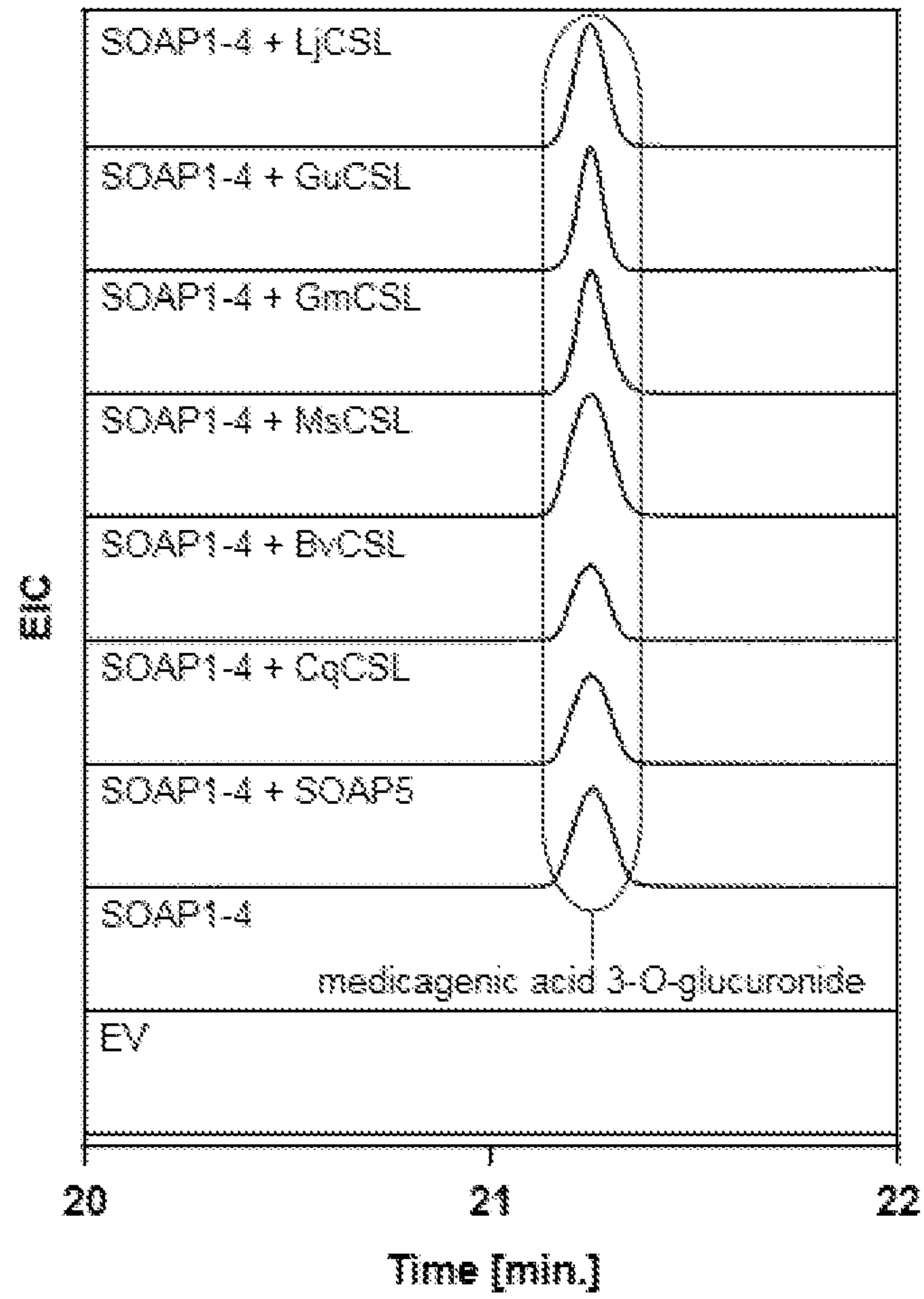


FIGURE 42B

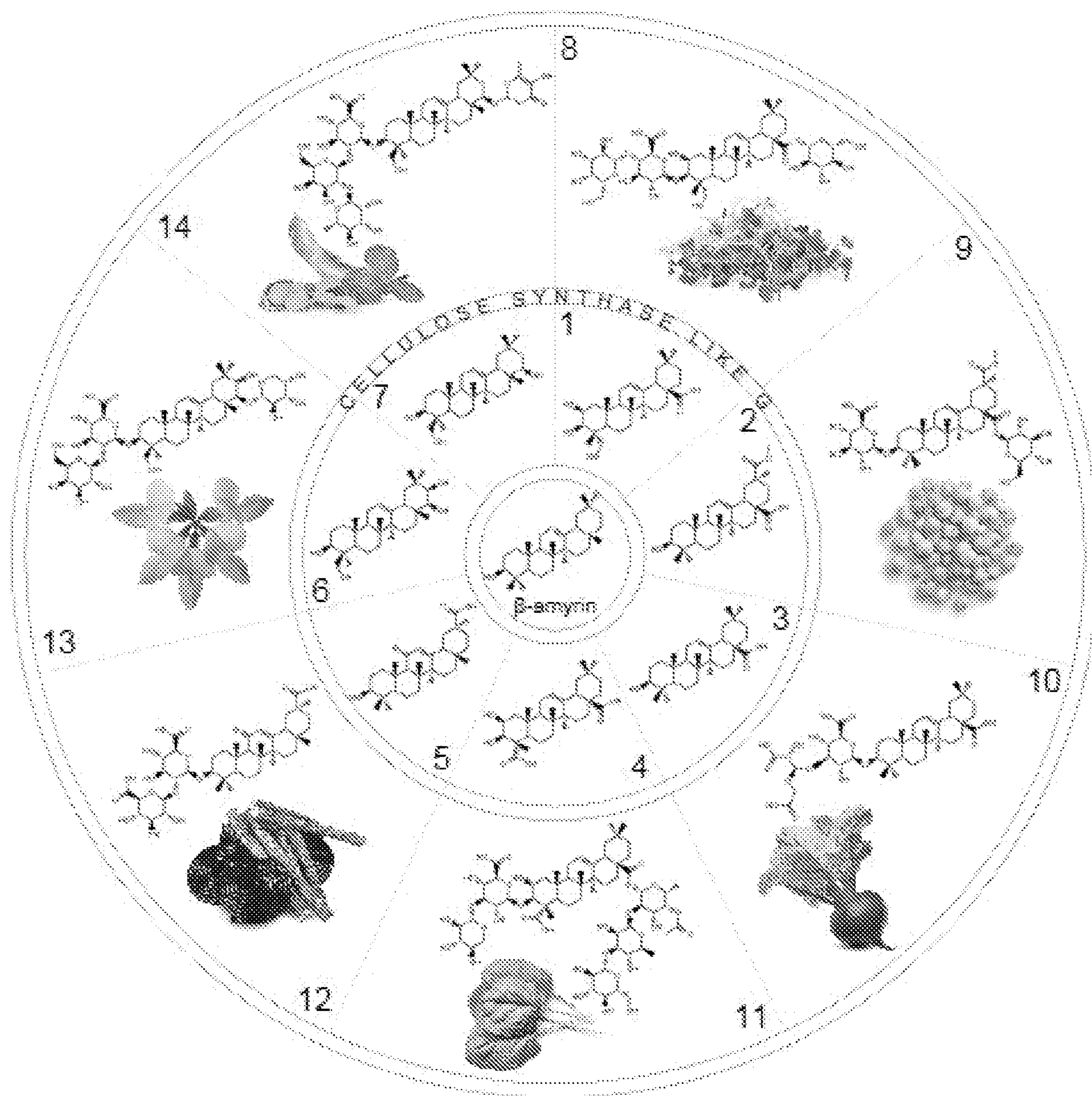


FIGURE 42C

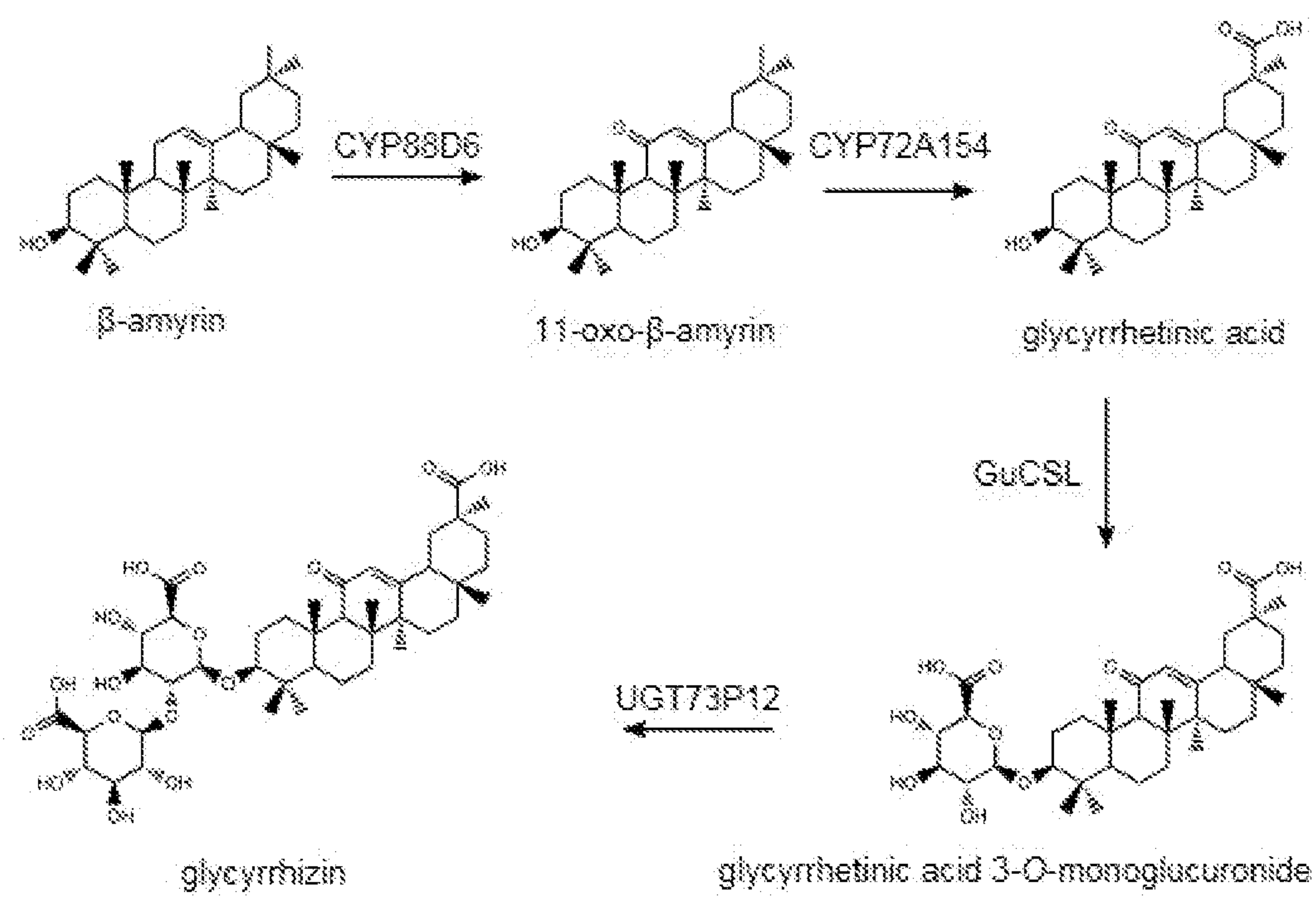


FIGURE 42D

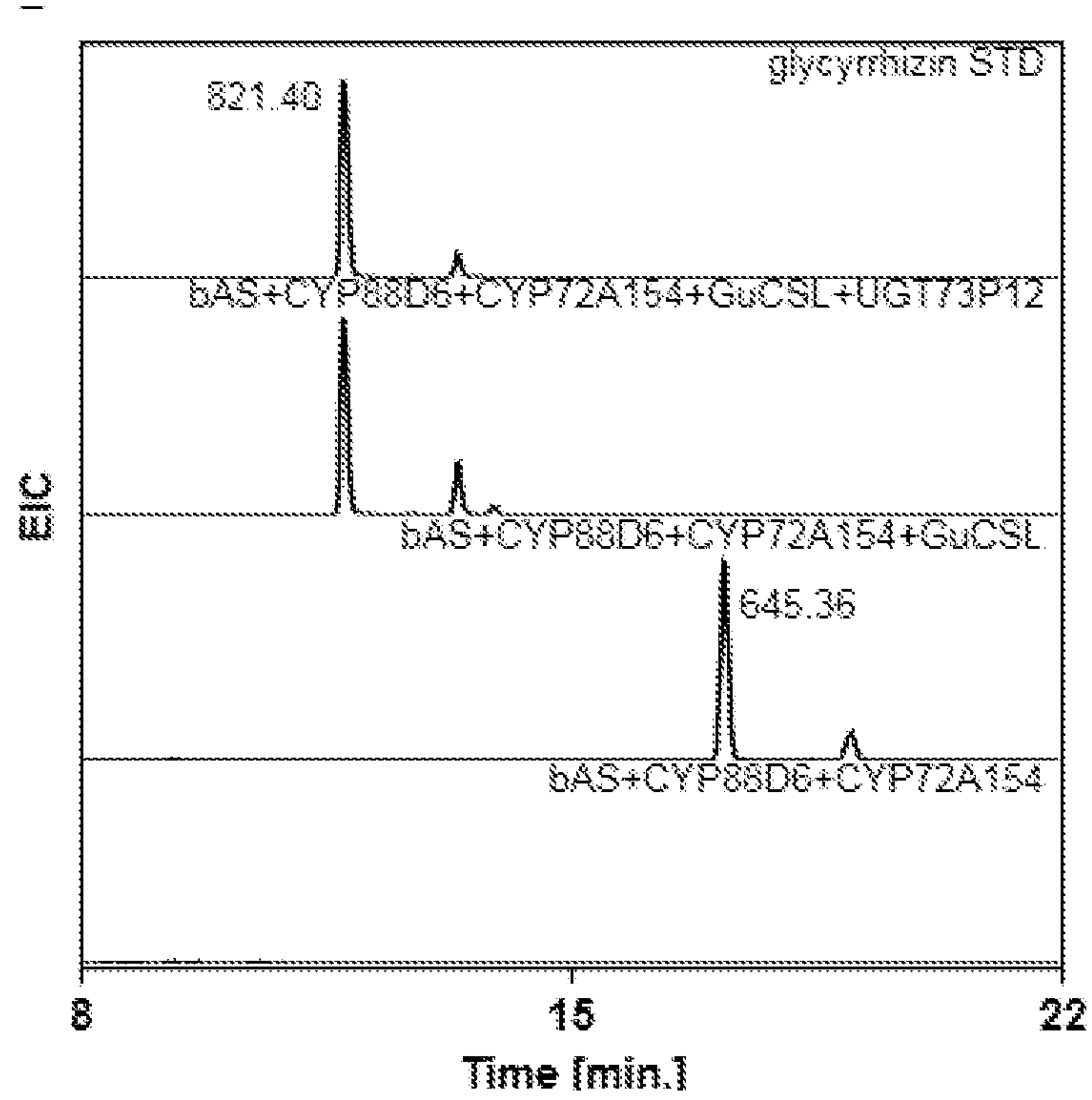


FIGURE 42E

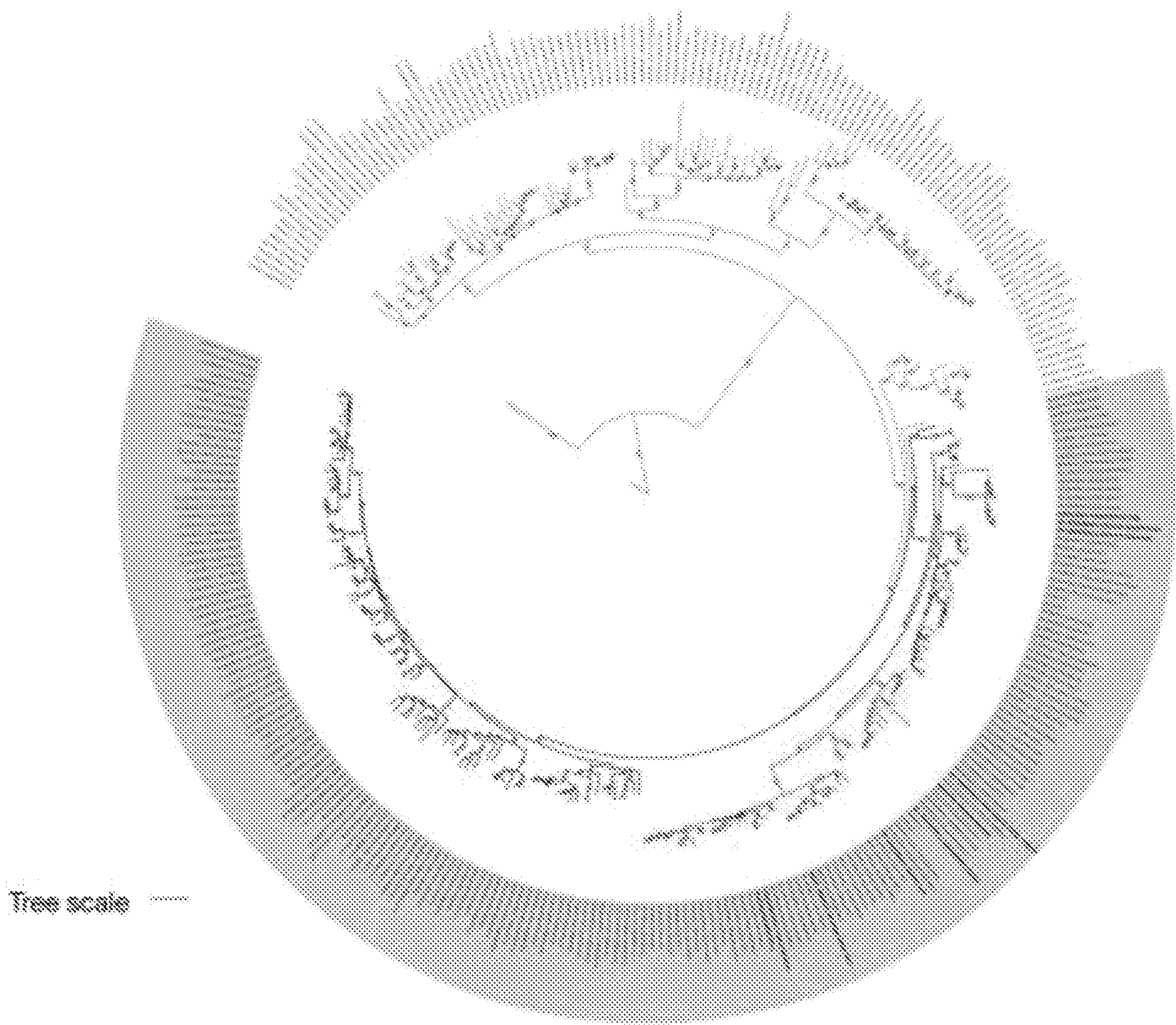


FIGURE 42F

Chenopodium quinoa

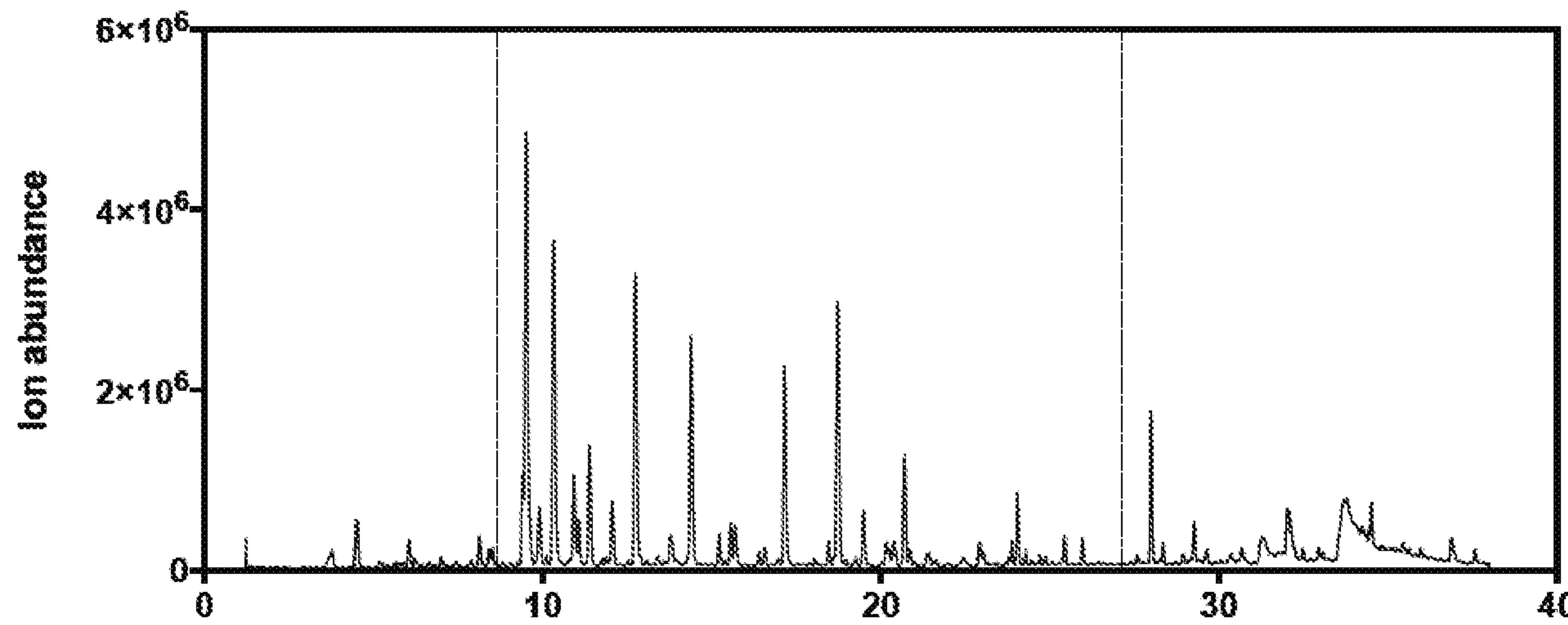


FIGURE 43A

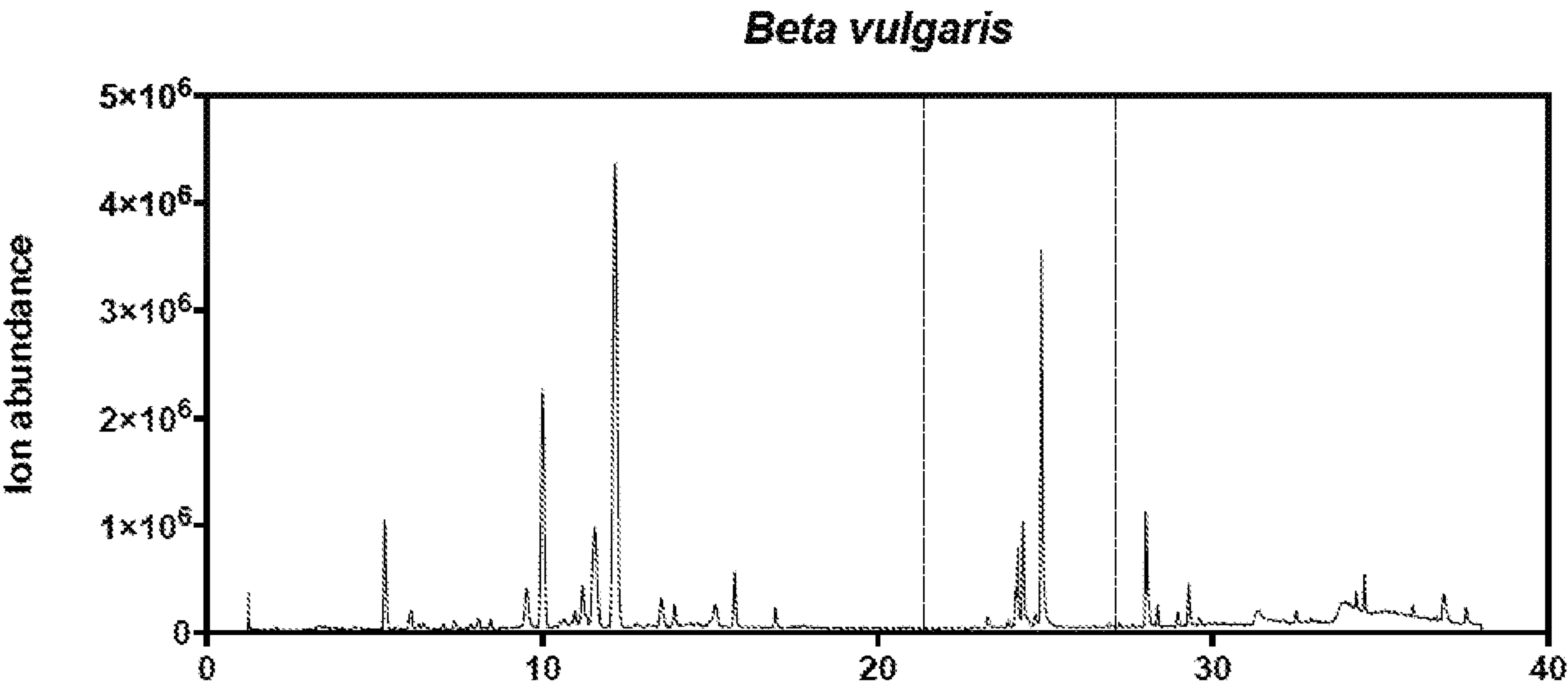


FIGURE 43B

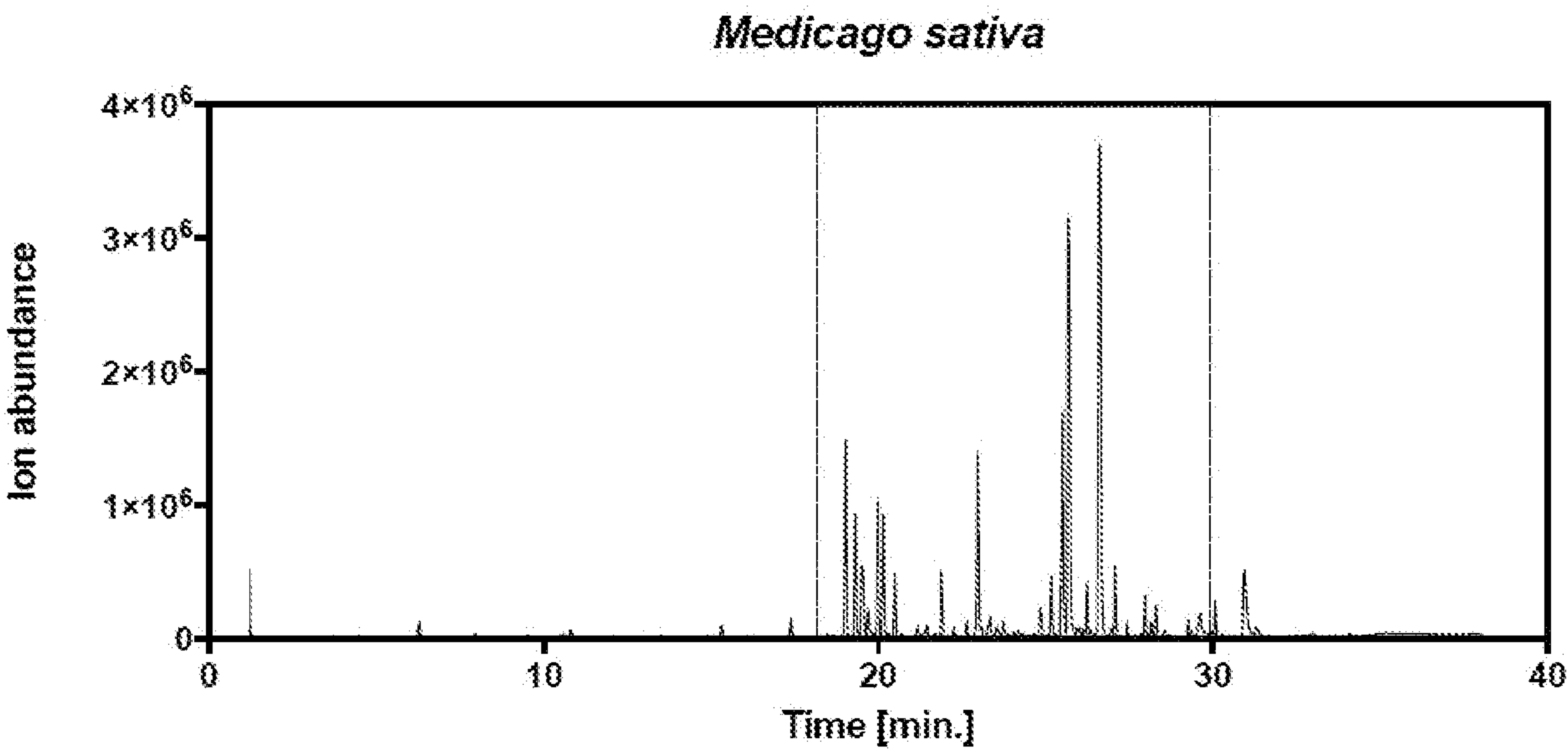


FIGURE 43C

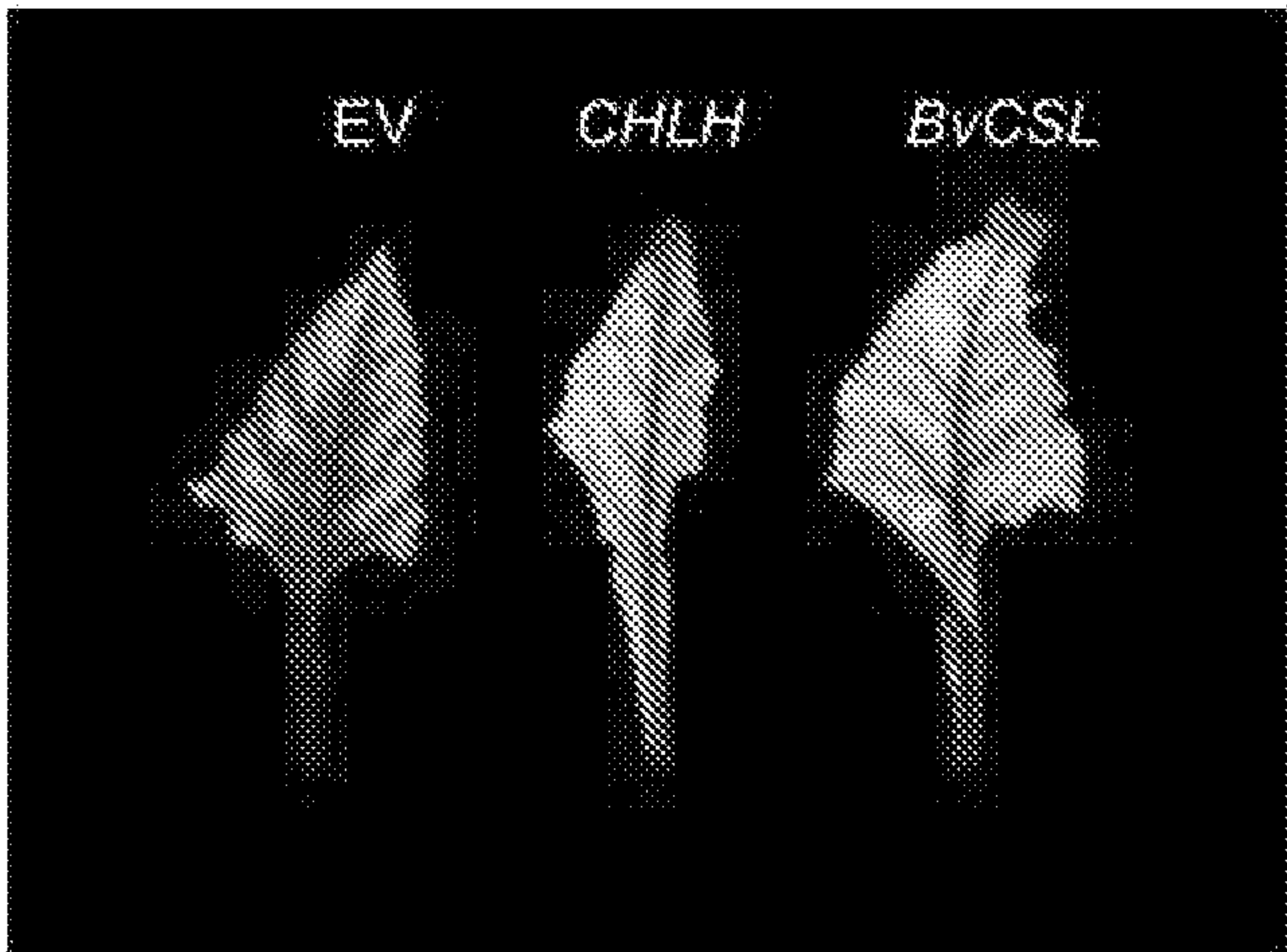


FIGURE 44A

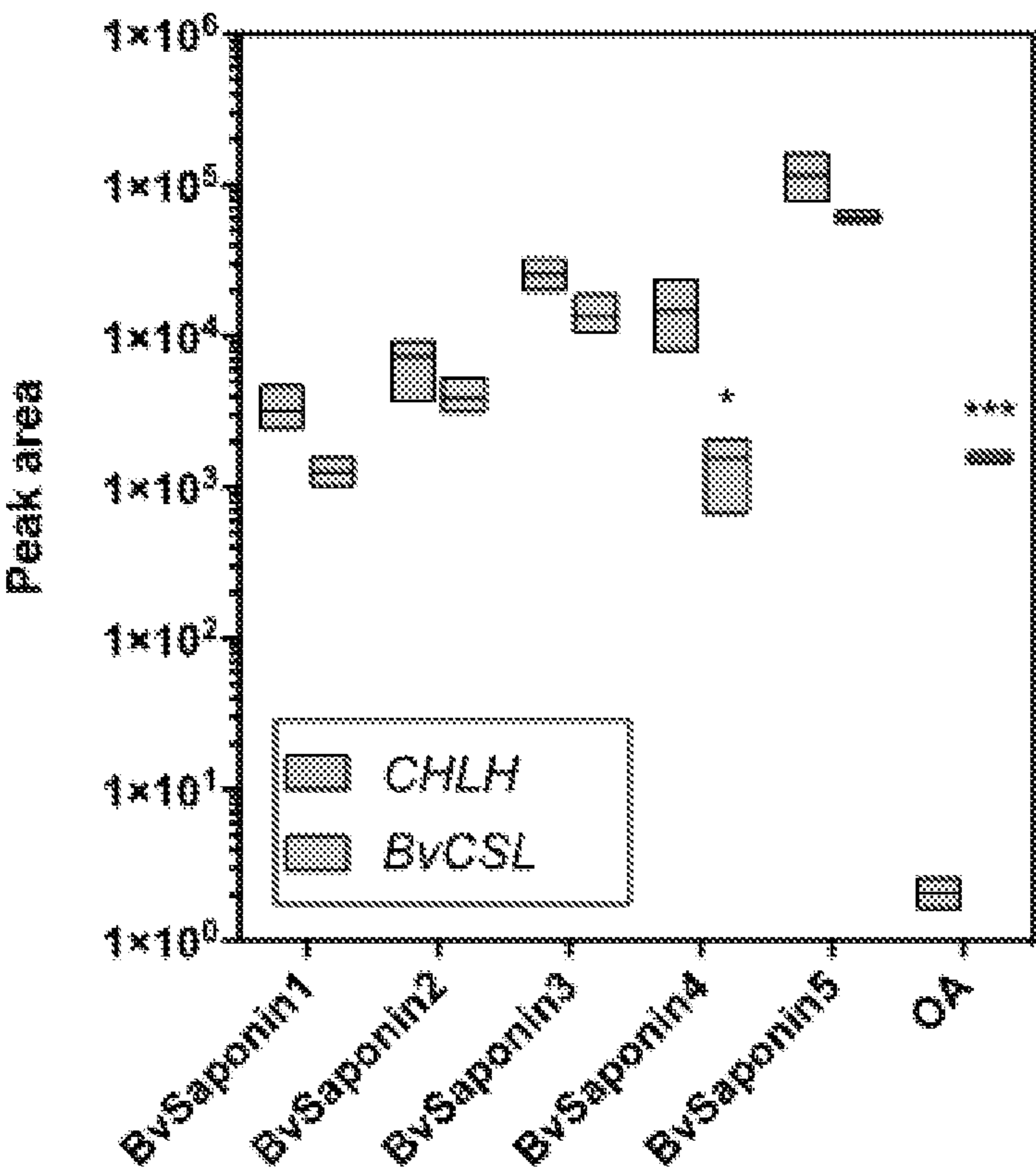


FIGURE 44B

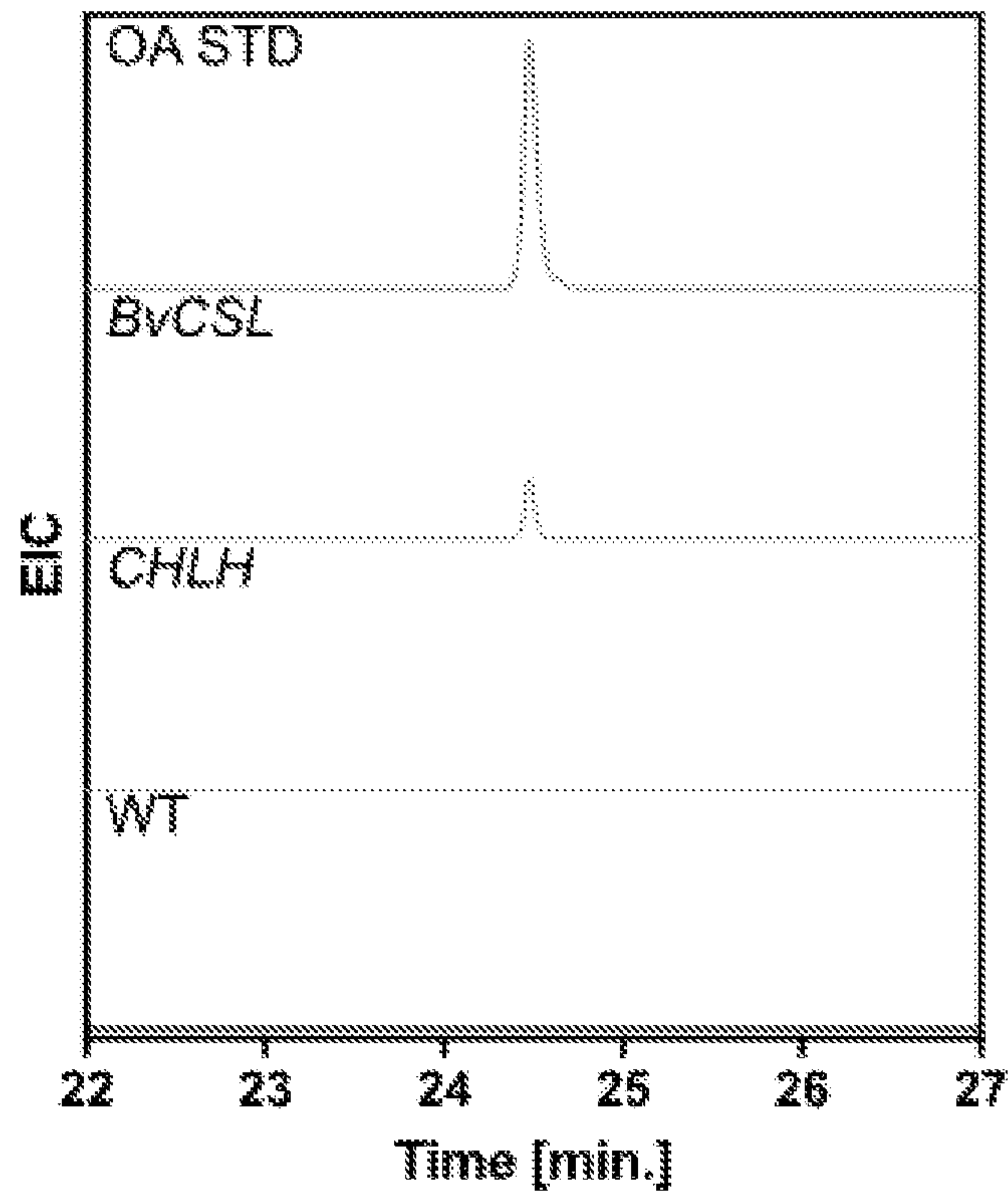


FIGURE 44C

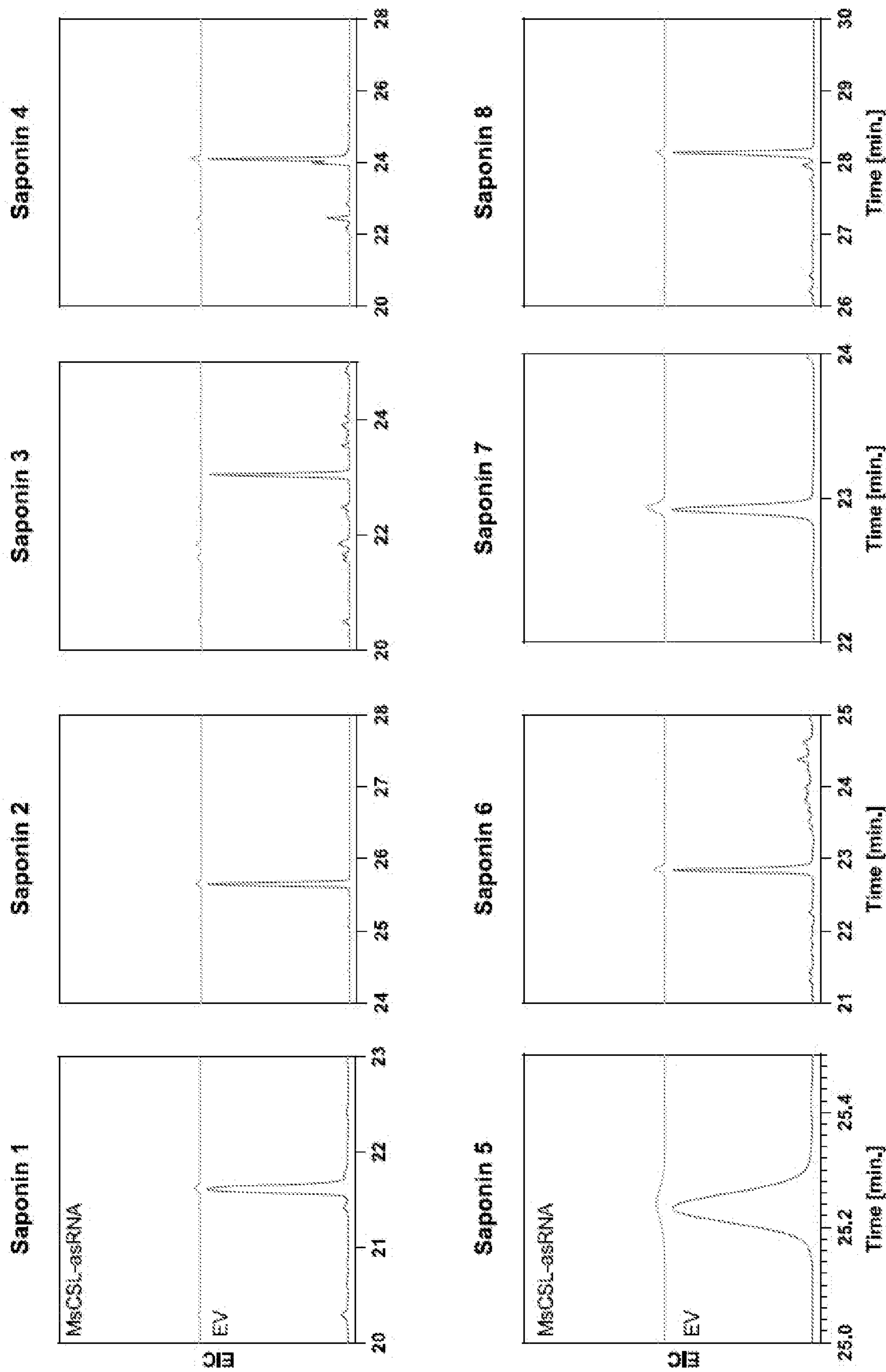


FIGURE 45A

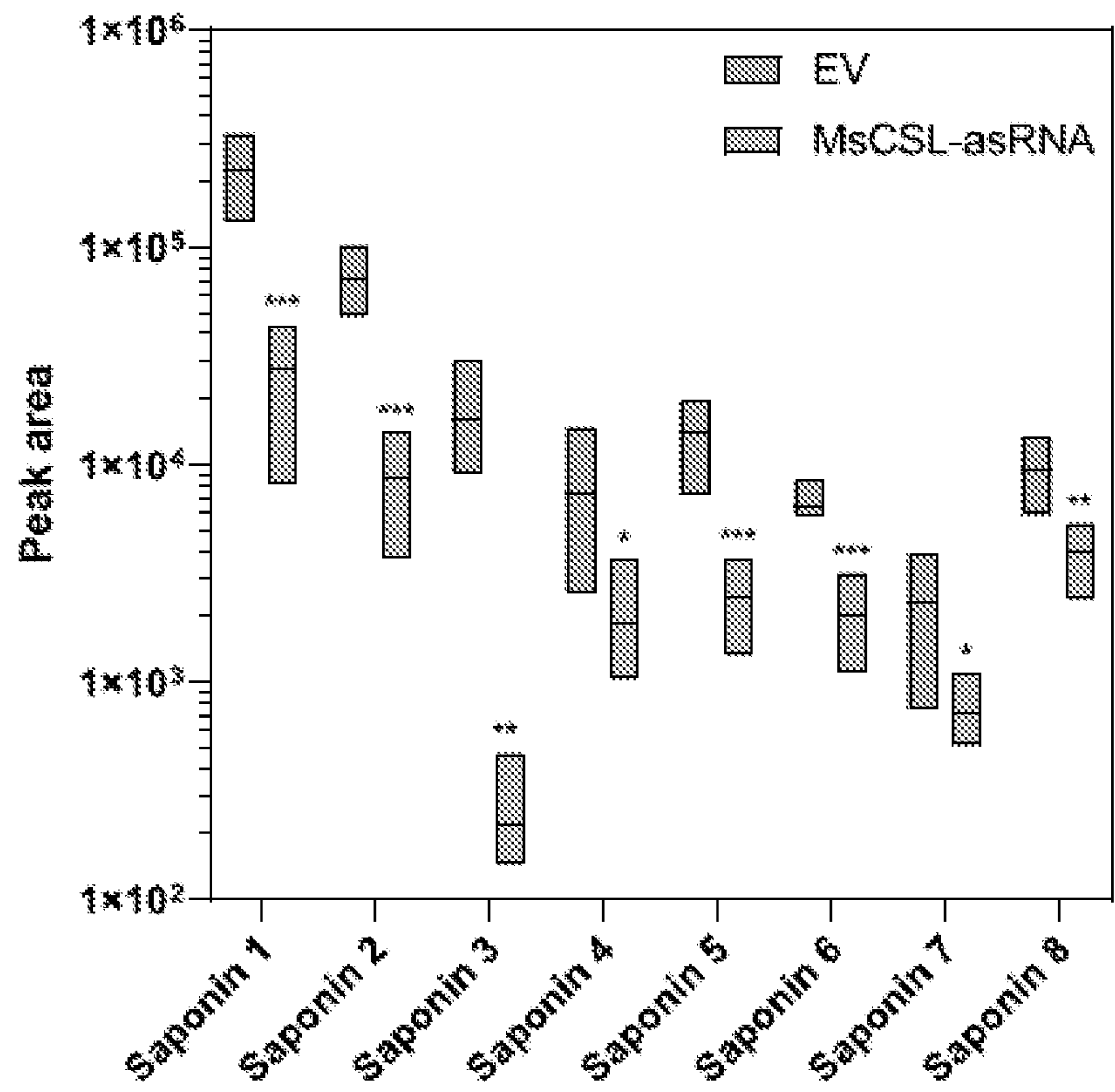


FIGURE 45B

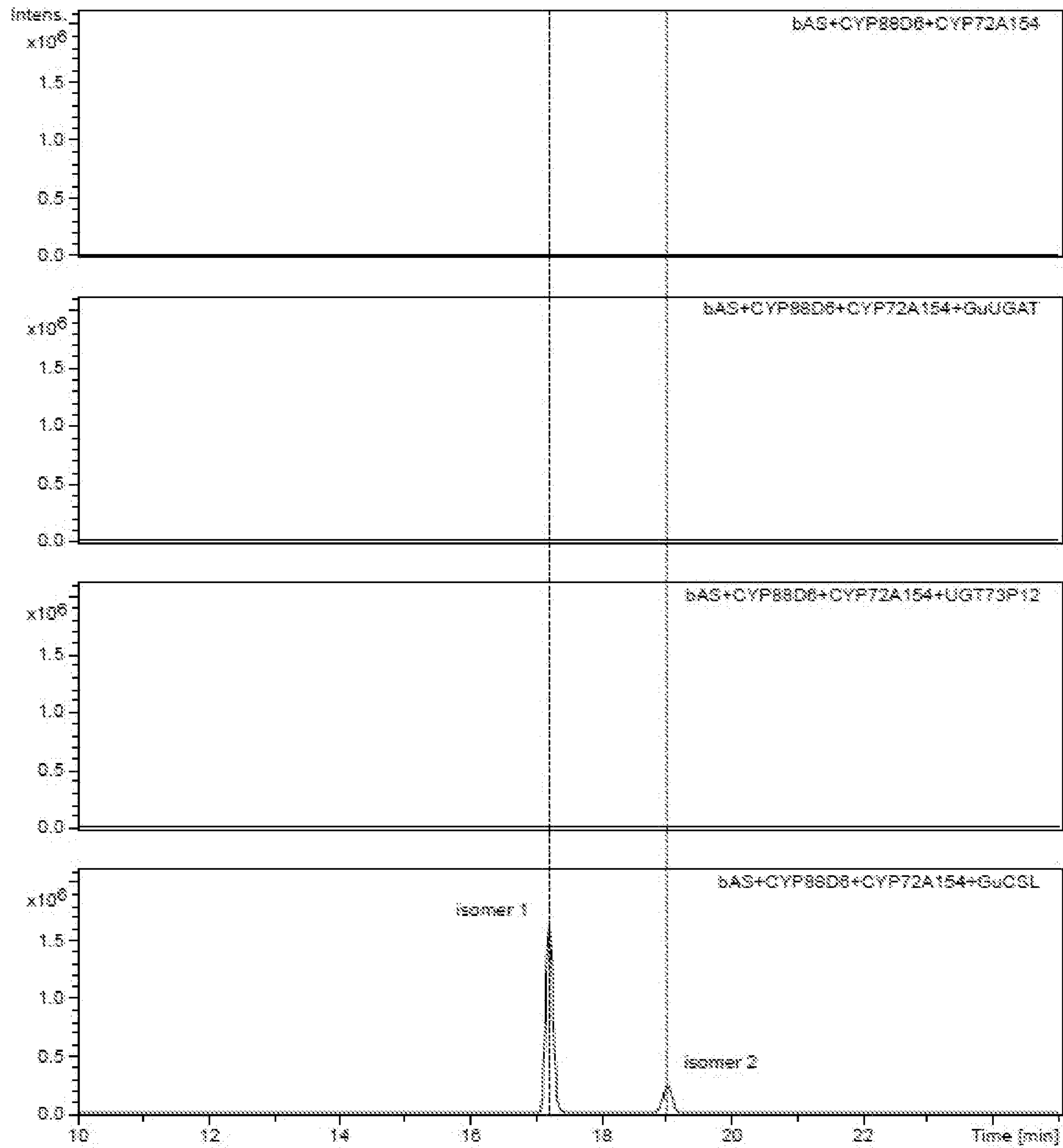


FIGURE 46A

MS/MS glycyrrhetic acid 3-O-glucuronide isomer 1 (55 eV)

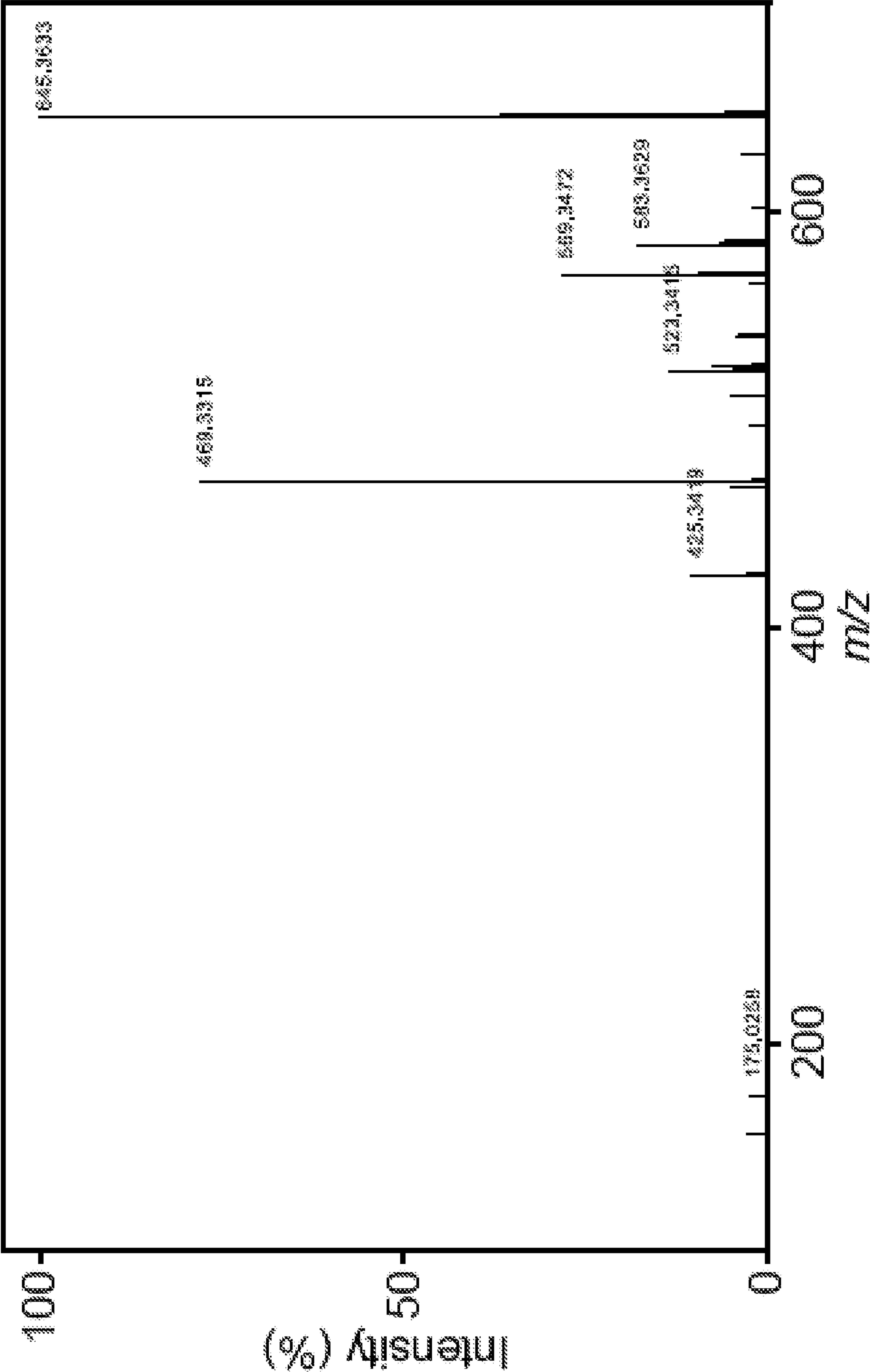


FIGURE 46B

MS/MS glycyrrhetic acid 3-O-glucuronide isomer 2 (55 eV)

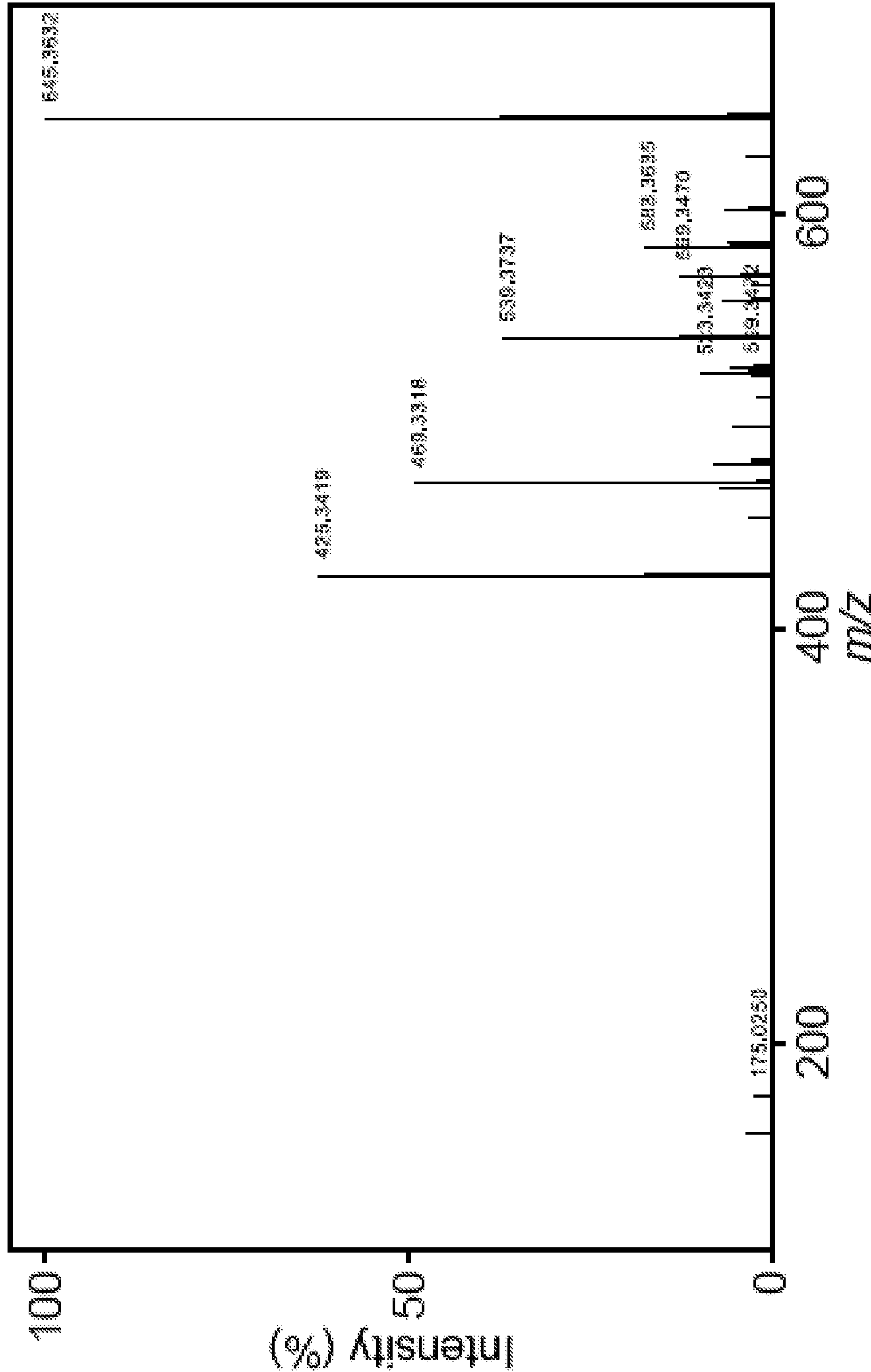


FIGURE 46C

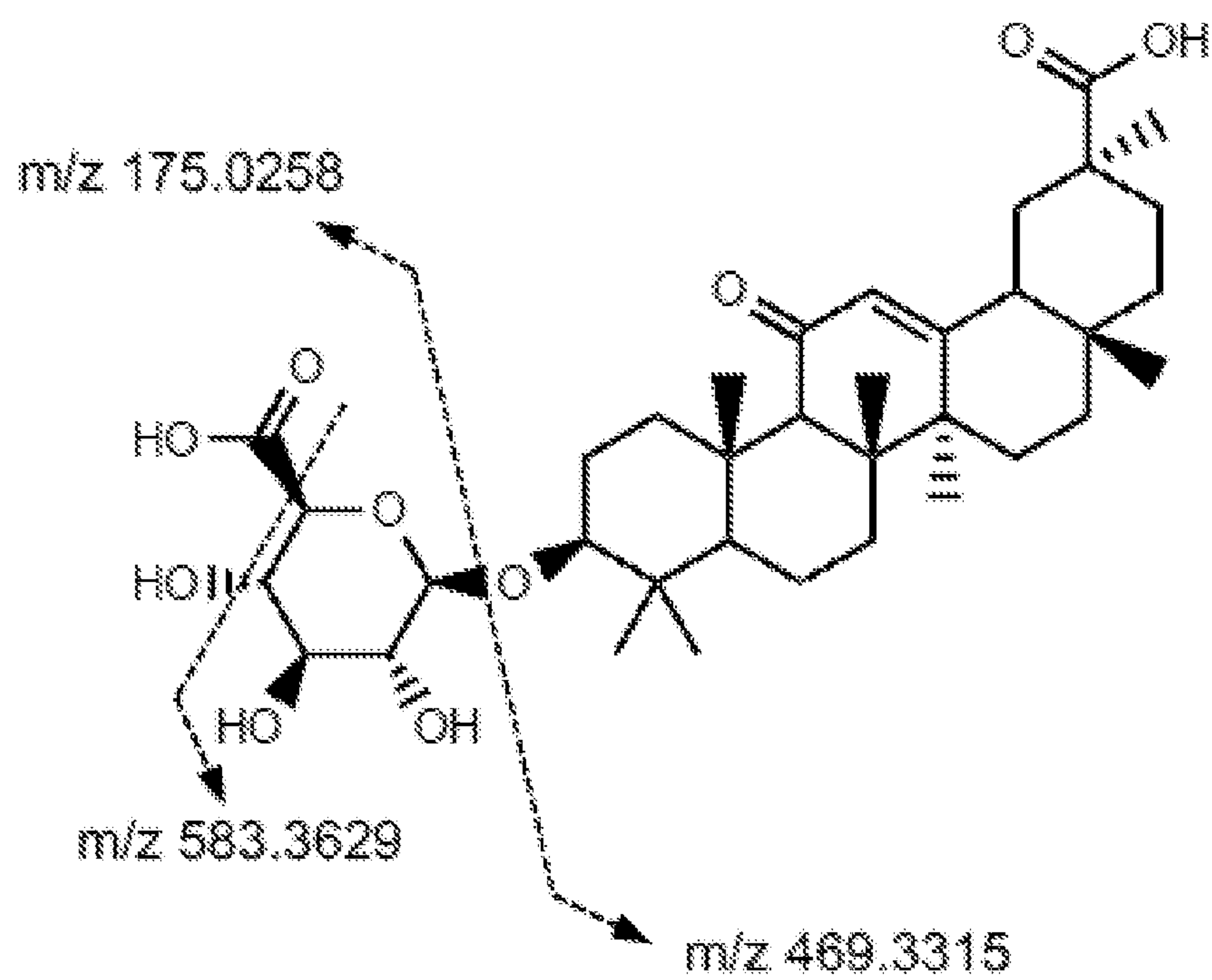


FIGURE 46D

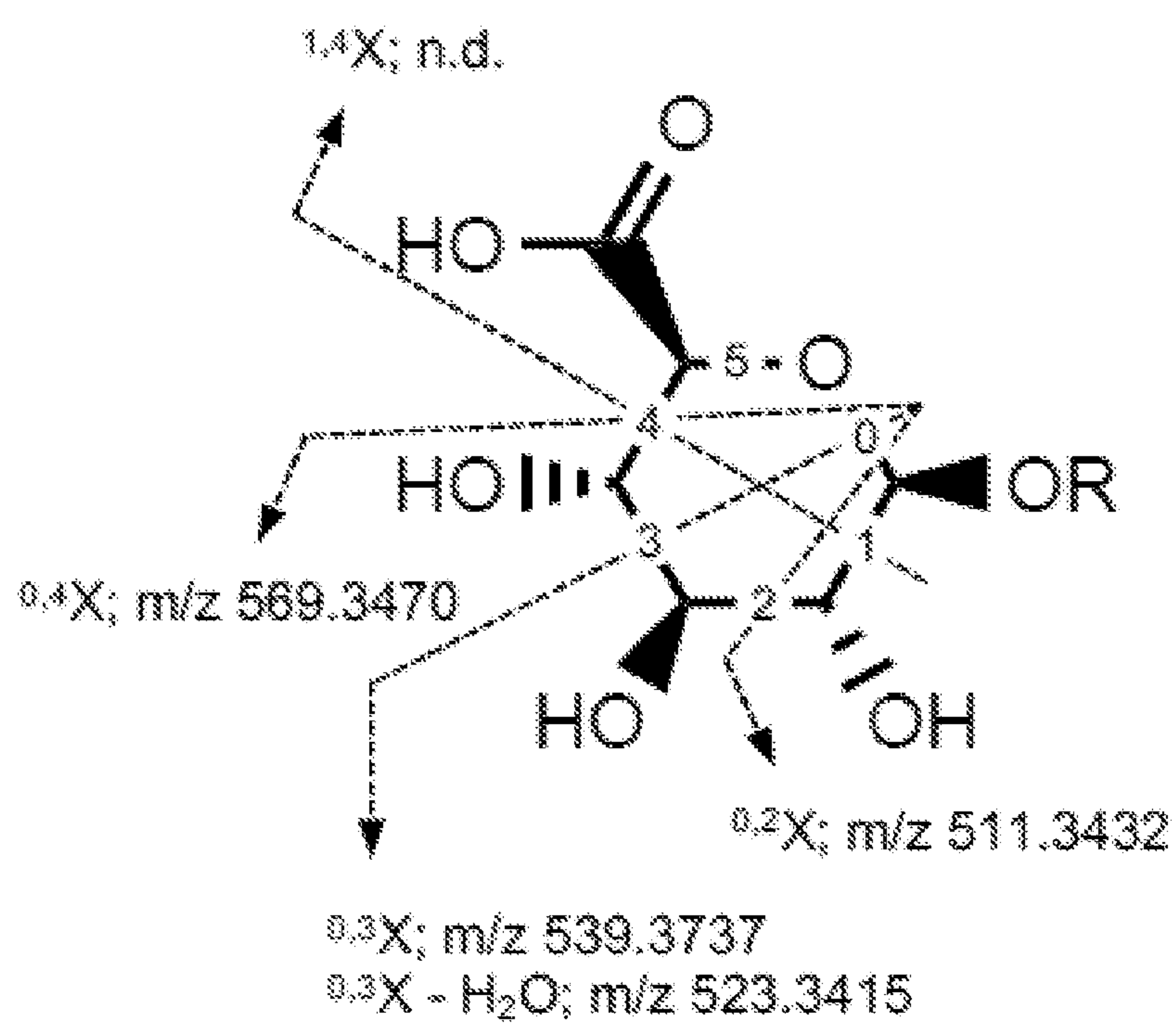


FIGURE 46E

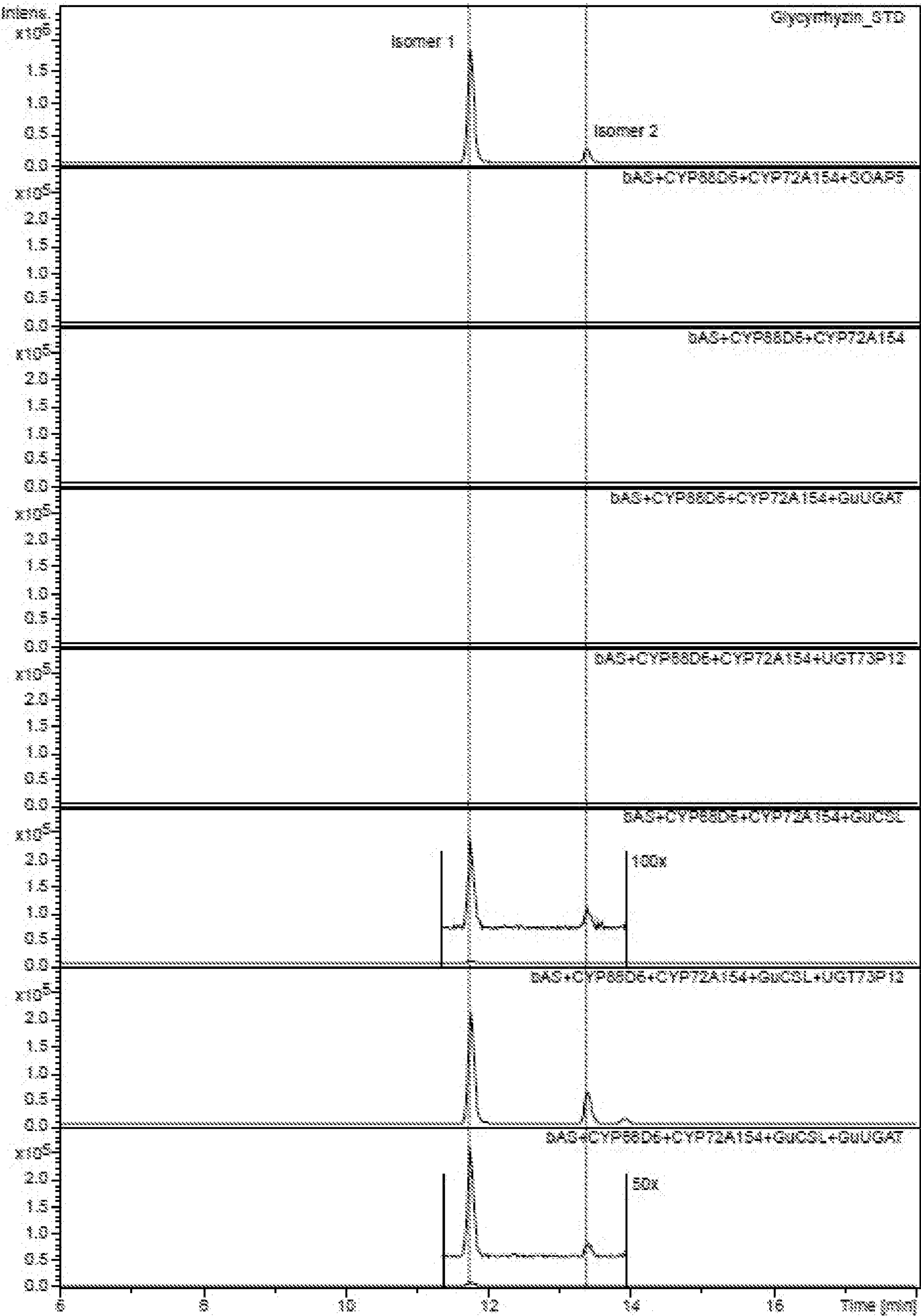


FIGURE 47A

MS/MS glycyrrhizin isomer 1 (65 eV)

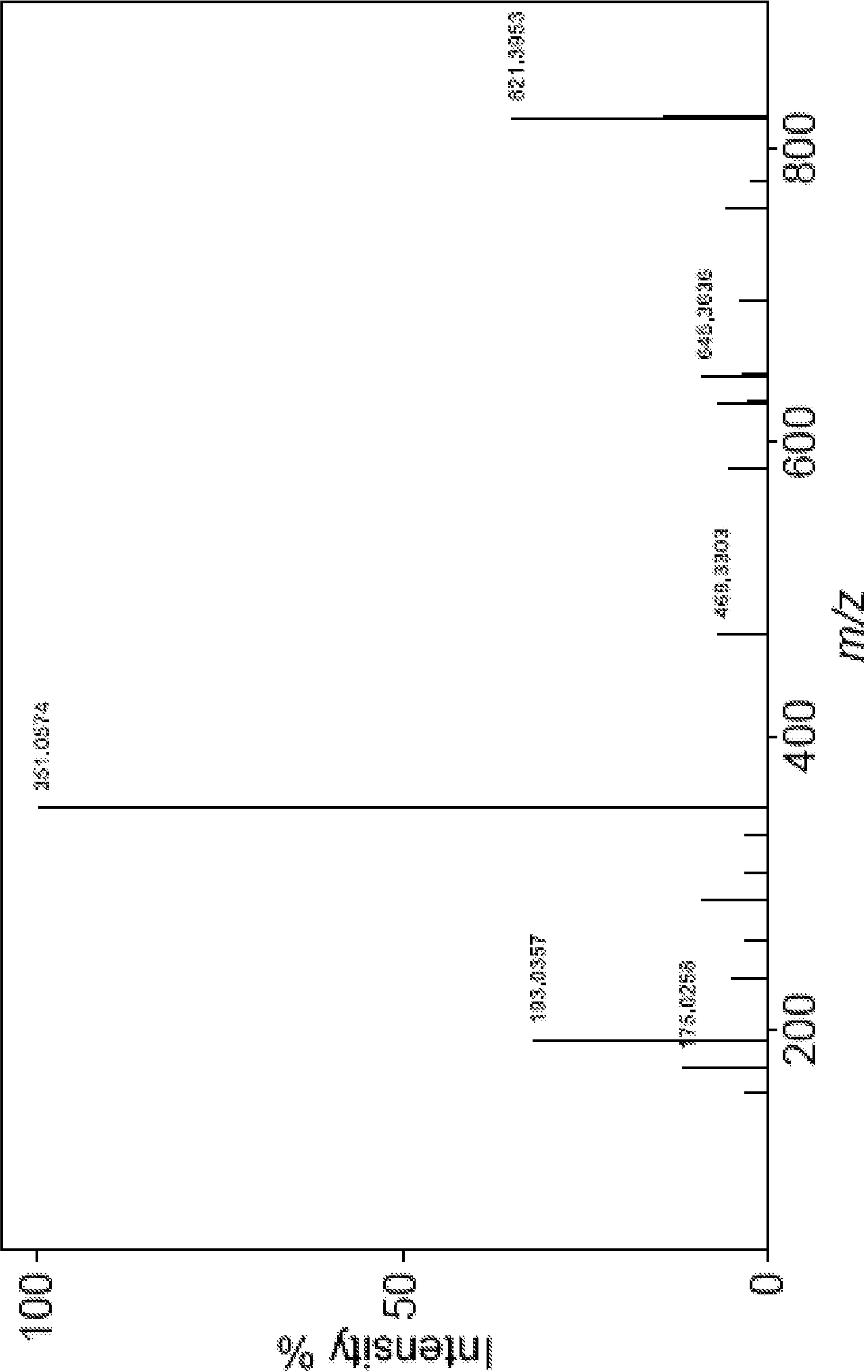


FIGURE 47B

MSMS glycyrrhizin isomer 2 (65 eV)

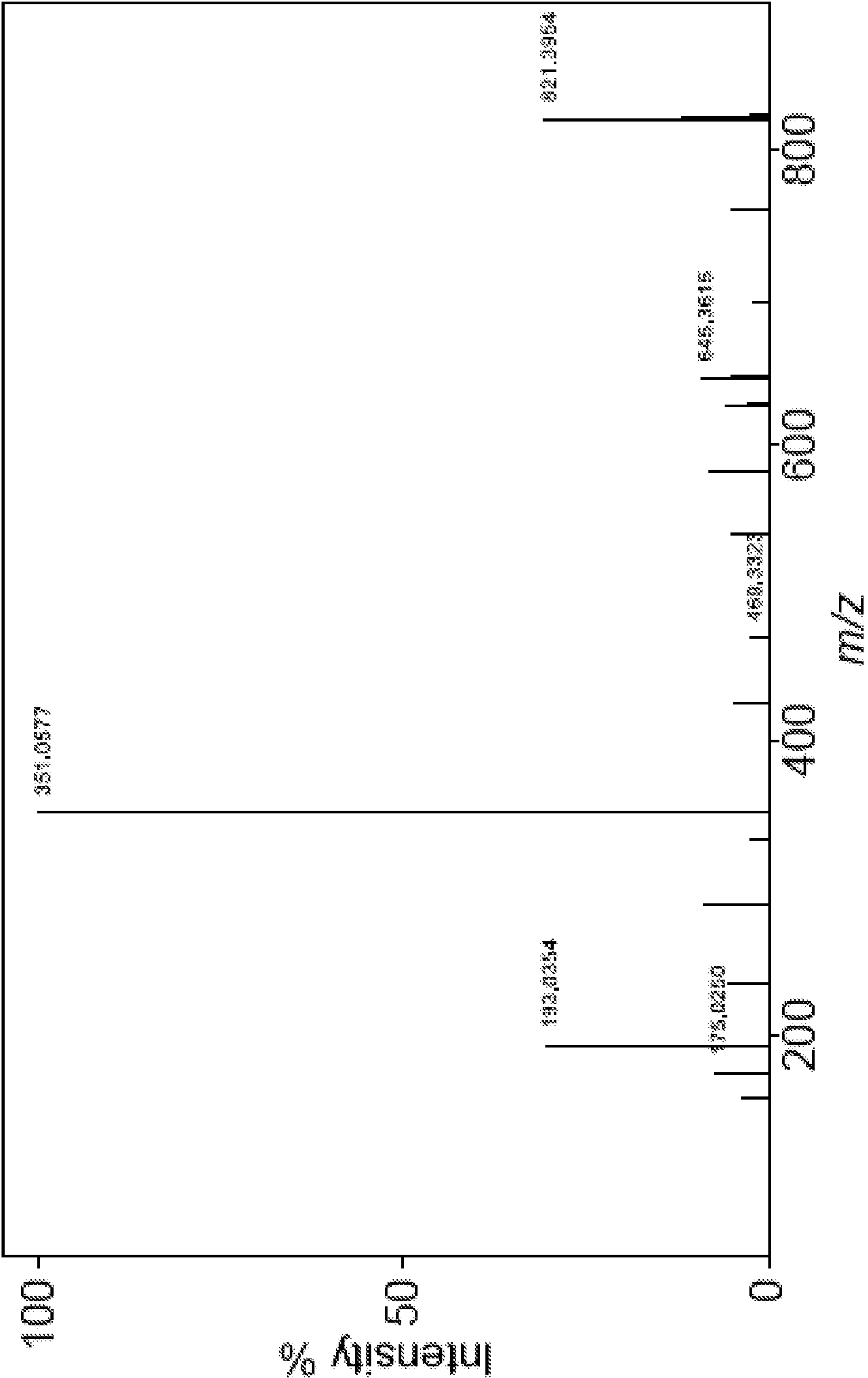


FIGURE 47C

MS/MS glycyrrhizin STD isomer 1 (65eV)

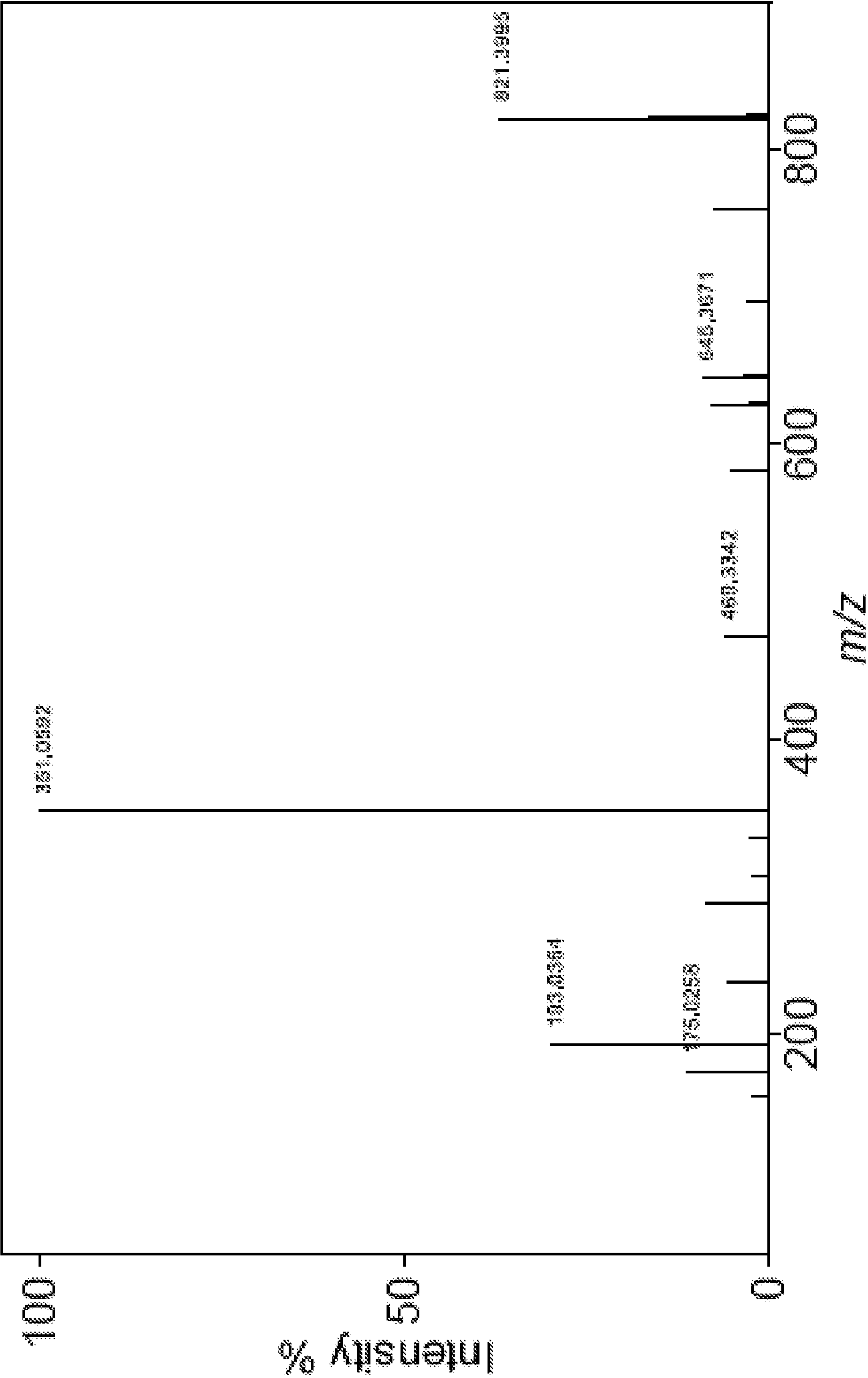


FIGURE 47D

MS/MS glycyrrhizin STD isomer 2 (65eV)

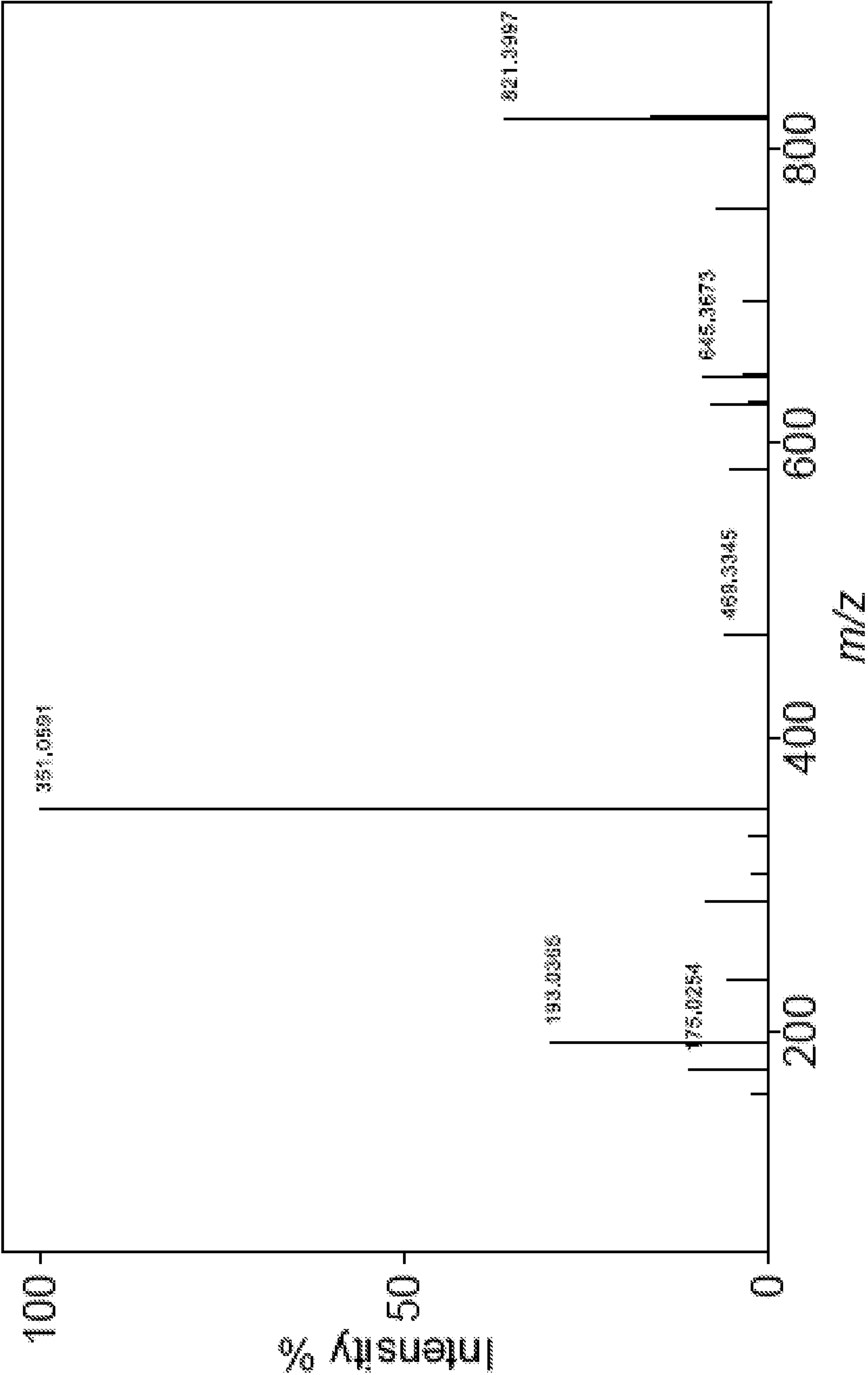


FIGURE 47E

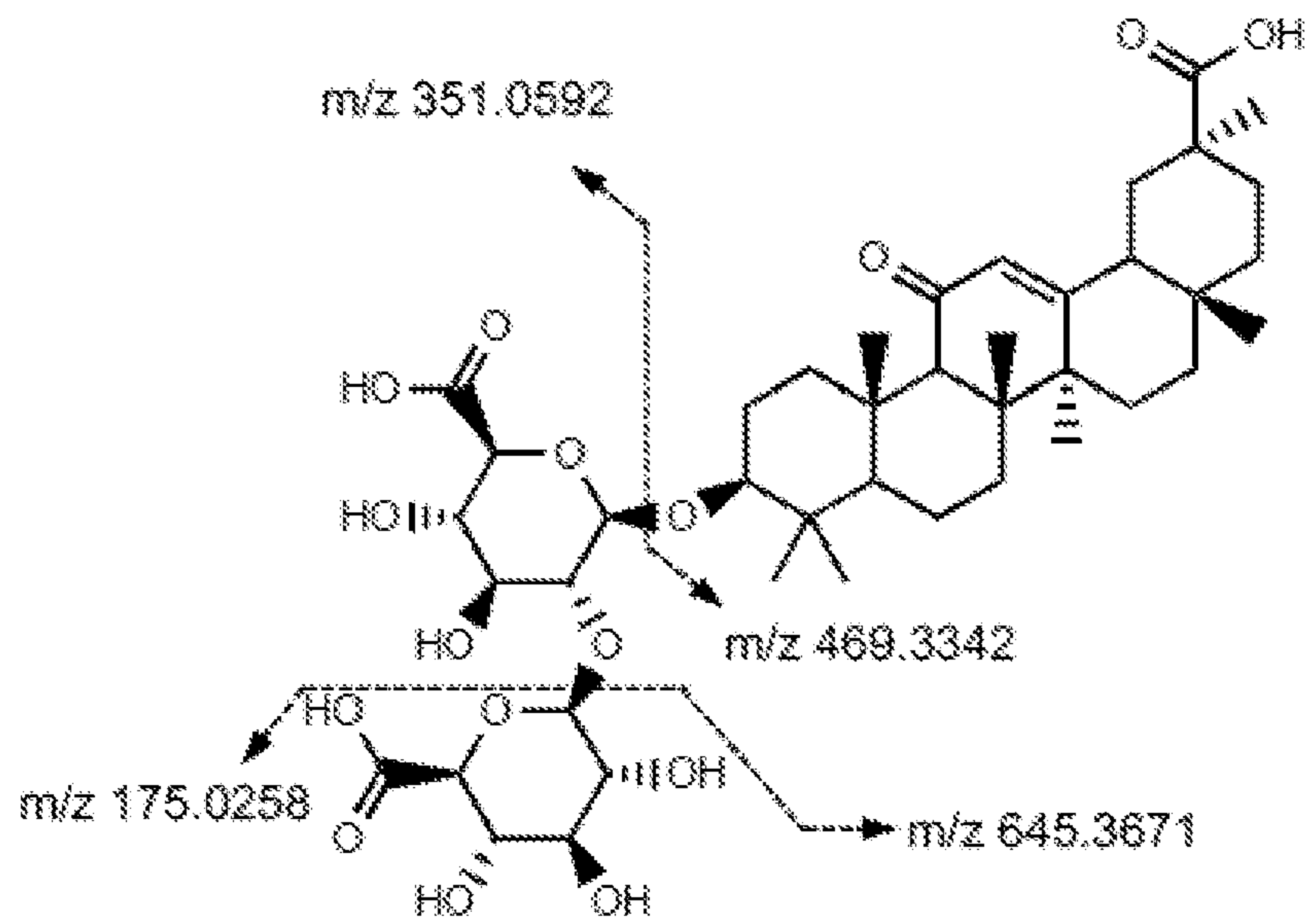


FIGURE 47F

SEQ ID NO. 67	AtCESA1	DRLAIRYERDGEPSQLVPVDVFVSTVDPELKEPPLVTANTVLSILSVDPVDKVACVVS	395
SEQ ID NO. 70	XP_021853954.1__SoCESA1	DRLAFRHREGEPSQLAFIDVEVSTVDPELKEPPIITANTVLSILAVDPVDKVSQVVS	400
SEQ ID NO. 68	AtCESA3	DRLAIRYERDGEPSQLAAVDIIVSTVDPELKEPPLVTANTVLSILAVDPVDKVSQVVS	379
SEQ ID NO. 71	XP_021846548.1__SoCESA3	DRLAIRYERDGEPSQLAAVDIIVSTVDPELKEPPLVTANTVLSILAVDPVDKVSQVVS	378
SEQ ID NO. 69	AtCSLG1	SKYA-----AKPEDFPEKLDVFICTADPEYKEPEPMVMVNTALSMAYEYPSOKISVYVS	142
SEQ ID NO. 66	SOAP5	CYES-----IKPEQLPEGLDVFIVTADPEYKEPEVLEVMNSVISSMALDYPVDRLAVYLS	133
		: :*: :*: :*: :*: :*: :*: :*: :*: :*: :*: :*: :*: :*: :*	
SEQ ID NO. 67	AtCESA1	GLDT-DGNELEPRLIYVSRERKRPGEFQHHKKAGAMNALIRVSAVLTNAGAYLLNV	568
SEQ ID NO. 70	XP_021853954.1__SoCESA1	GLDM-DGNELEPRLVYVSRERKRPGEFQHHKKAGAMNALIRVSAVLTNAGAYLLNV	573
SEQ ID NO. 68	AtCESA3	GLDA-EGNELEPRLVYVSRERKRPGEFQHHKKAGAMNALVSVSAVLTNAGPFILNI	552
SEQ ID NO. 71	XP_021846548.1__SoCESA3	GLDT-DGNELEPRLVYVSRERKRPGEFTHHKKAGAMNSLVRSVAVLTNGPEFELNI	551
SEQ ID NO. 69	AtCSLG1	EMDNTRKYIMENLIYVSRERKSKVSEPHFHKAGALNTLLRVSGVMTNSPIILTL	312
SEQ ID NO. 66	SOAP5	-QNGESDVKMLLVYVAREKRPGRPHRFKAGALNALIRVSSIMSNAPYLLV	290
		: :*: :*: :*: :*: :*: :*: :*: :*: :*: :*: :*: :*: :*	
SEQ ID NO. 67	AtCESA1	PATLLEKEAIIHVISCQYEDKTEWGEKEIGWIYGSVT	804
SEQ ID NO. 70	XP_021853954.1__SoCESA1	PATLLEKEAIIHVISCQYEDKSEWGEKEIGWIYGSVT	809
SEQ ID NO. 68	AtCESA3	PENLLEKEAIIHVISCQYEDKSDWGEIGWIYGSVT	789
SEQ ID NO. 71	XP_021846548.1__SoCESA3	POTLLEKEAIIHVISCQYEDKTDWGAIEIGWIYGSVT	784
SEQ ID NO. 69	AtCSLG1	AQDVLSLAHNVAGCIYEYNTNWSKIGERYGSLV	471
SEQ ID NO. 66	SOAP5	EDELVQEARNLATCTYEANTLWGEVGVSYECLIS	466
		: . * : : * * : : * * : : * : : * : : * : : * : : * : : *	
SEQ ID NO. 67	AtCESA1	KGSAPINLSDRLN	864
SEQ ID NO. 70	XP_021853954.1__SoCESA1	KGSAPINLSDRLN	869
SEQ ID NO. 68	AtCESA3	KGSAPINLSDRLN	849
SEQ ID NO. 71	XP_021846548.1__SoCESA3	KGSAPINLSDRLN	844
SEQ ID NO. 69	AtCSLG1	YGDSPKCLVDLVG	530
SEQ ID NO. 66	SOAP5	LGCTTIDMKDATV	525
		* : : * * : : * : : * : : * : : * : : * : : * : : *	

FIGURE 48

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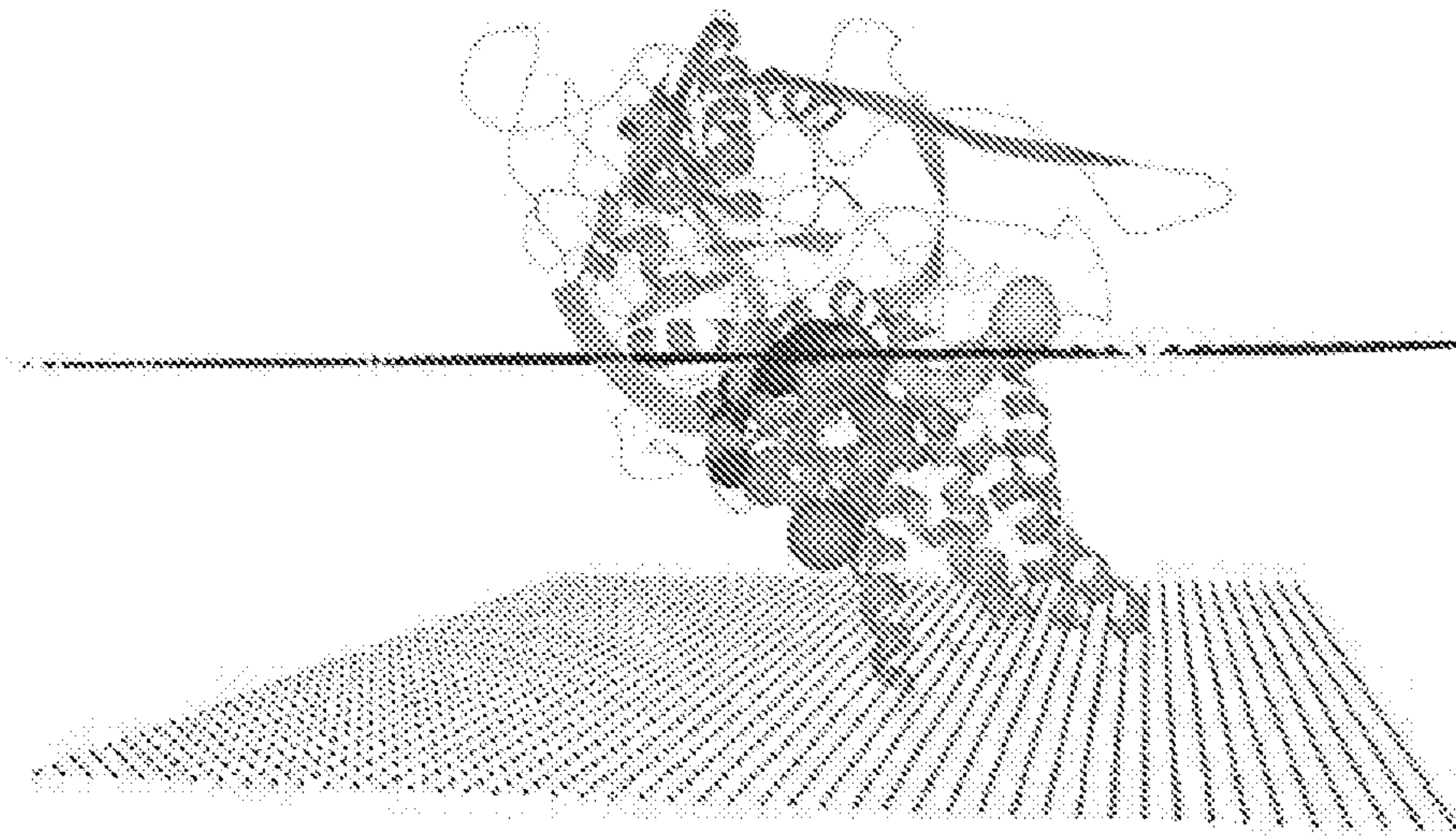


FIGURE 49A

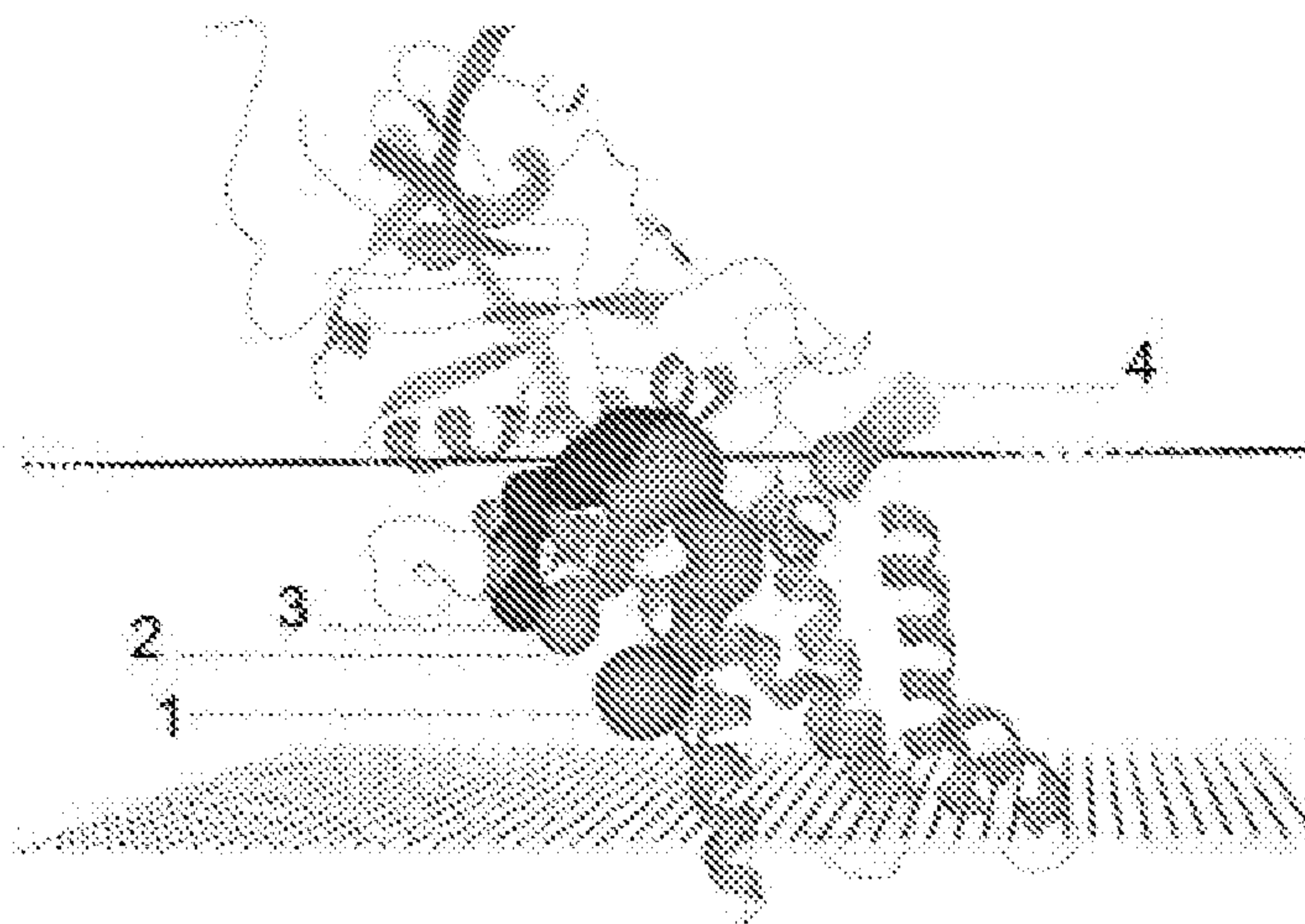


FIGURE 49B

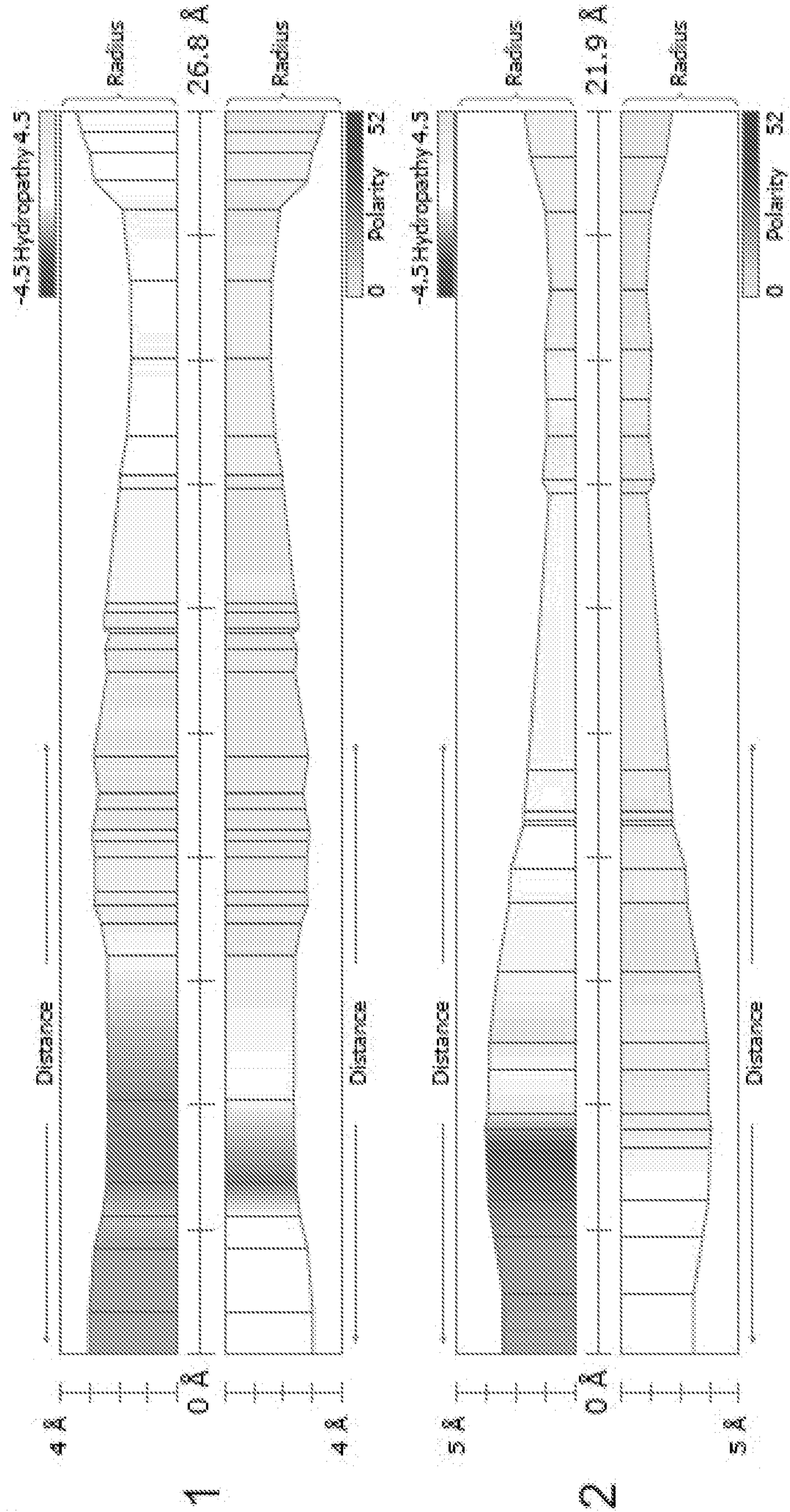


FIGURE 49C

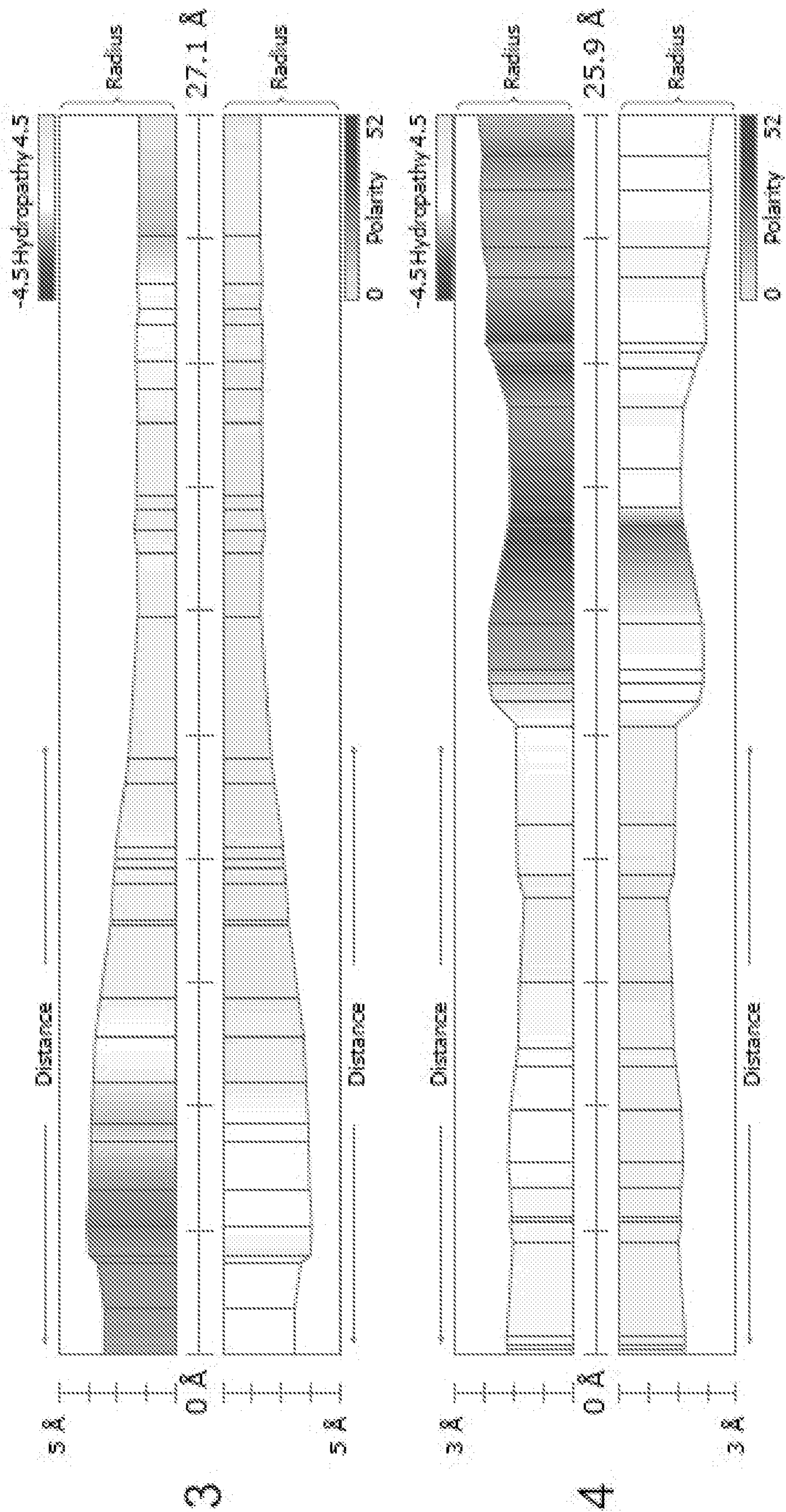


FIGURE 49C (cont.)

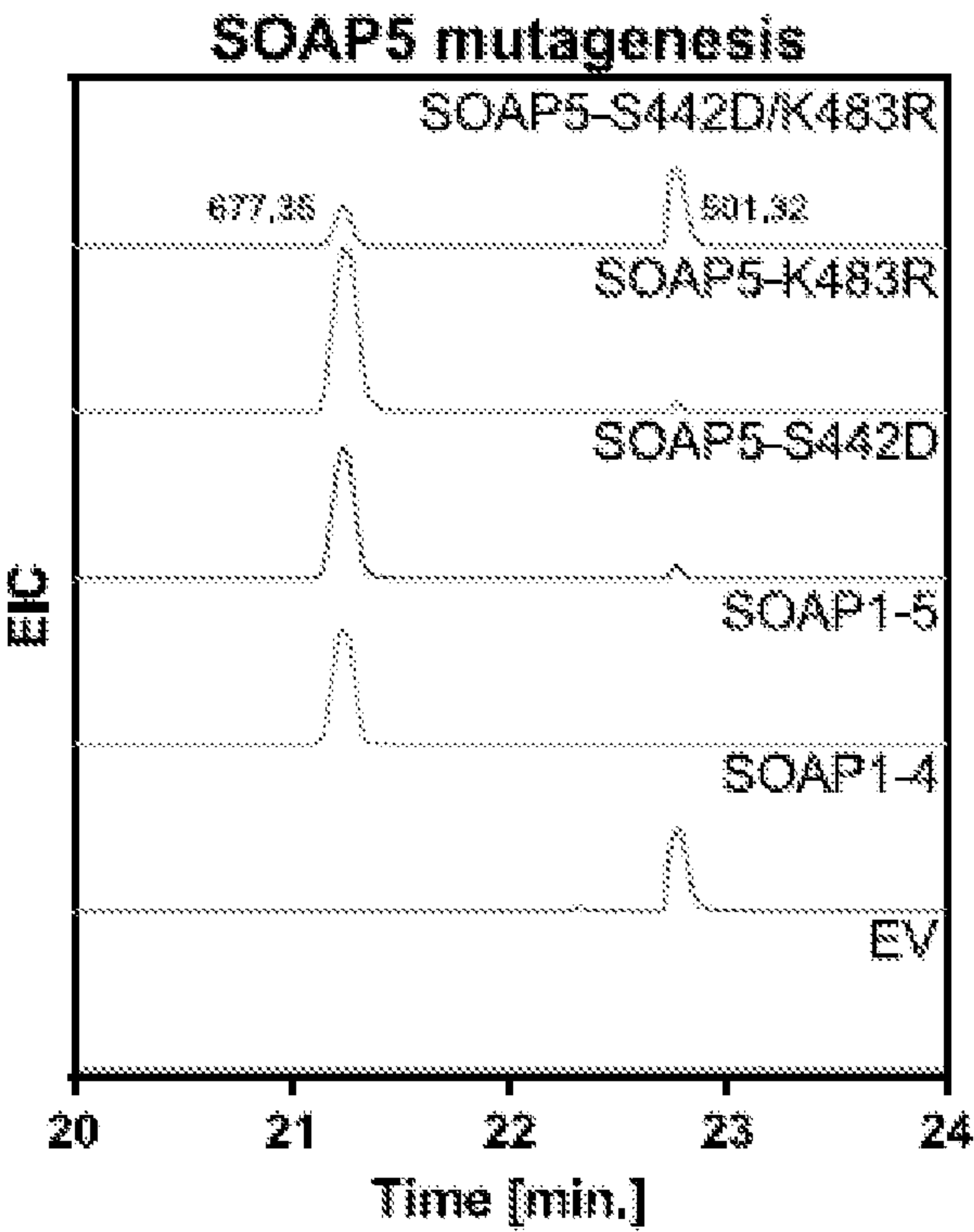


FIGURE 50A

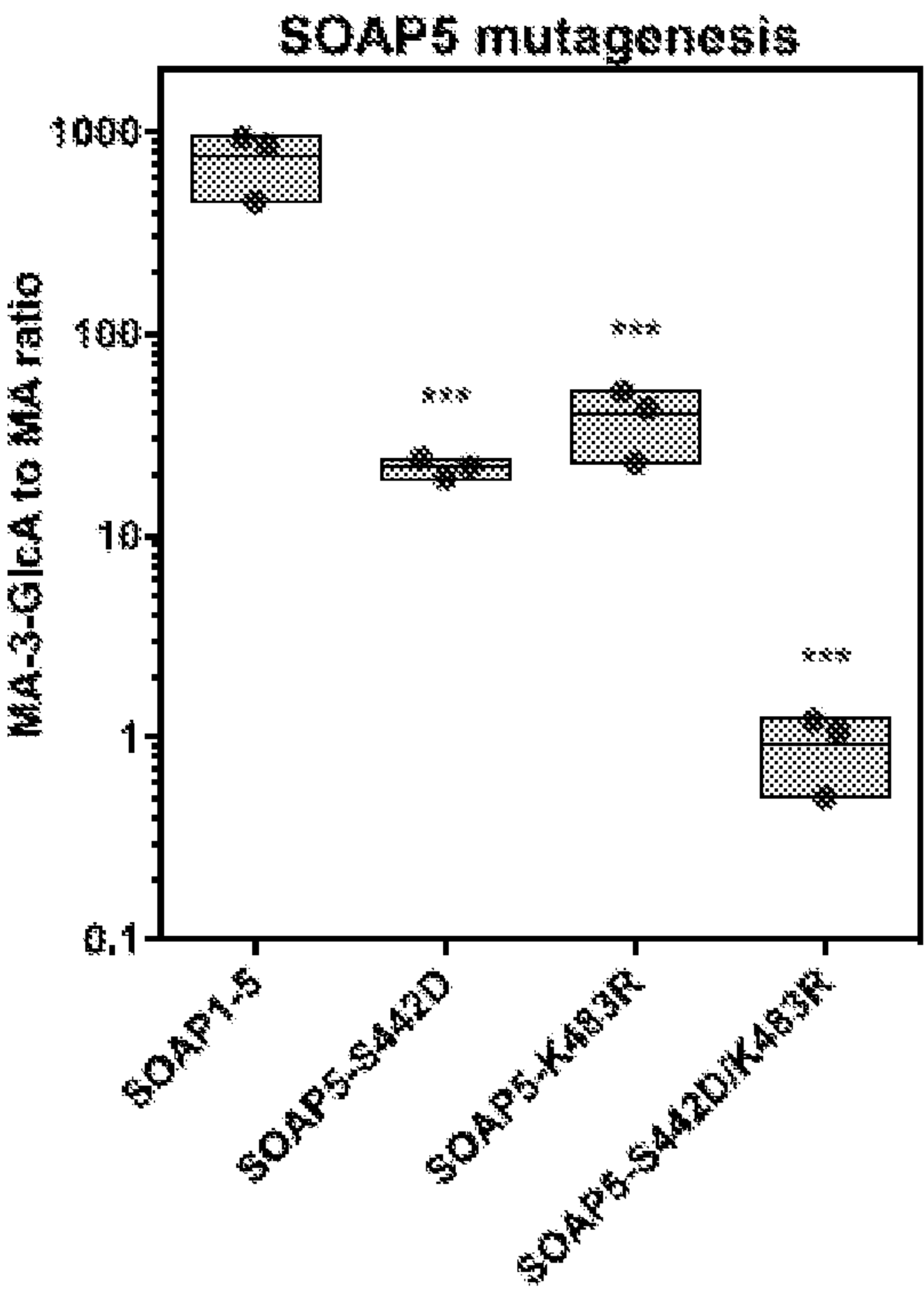


FIGURE 50B

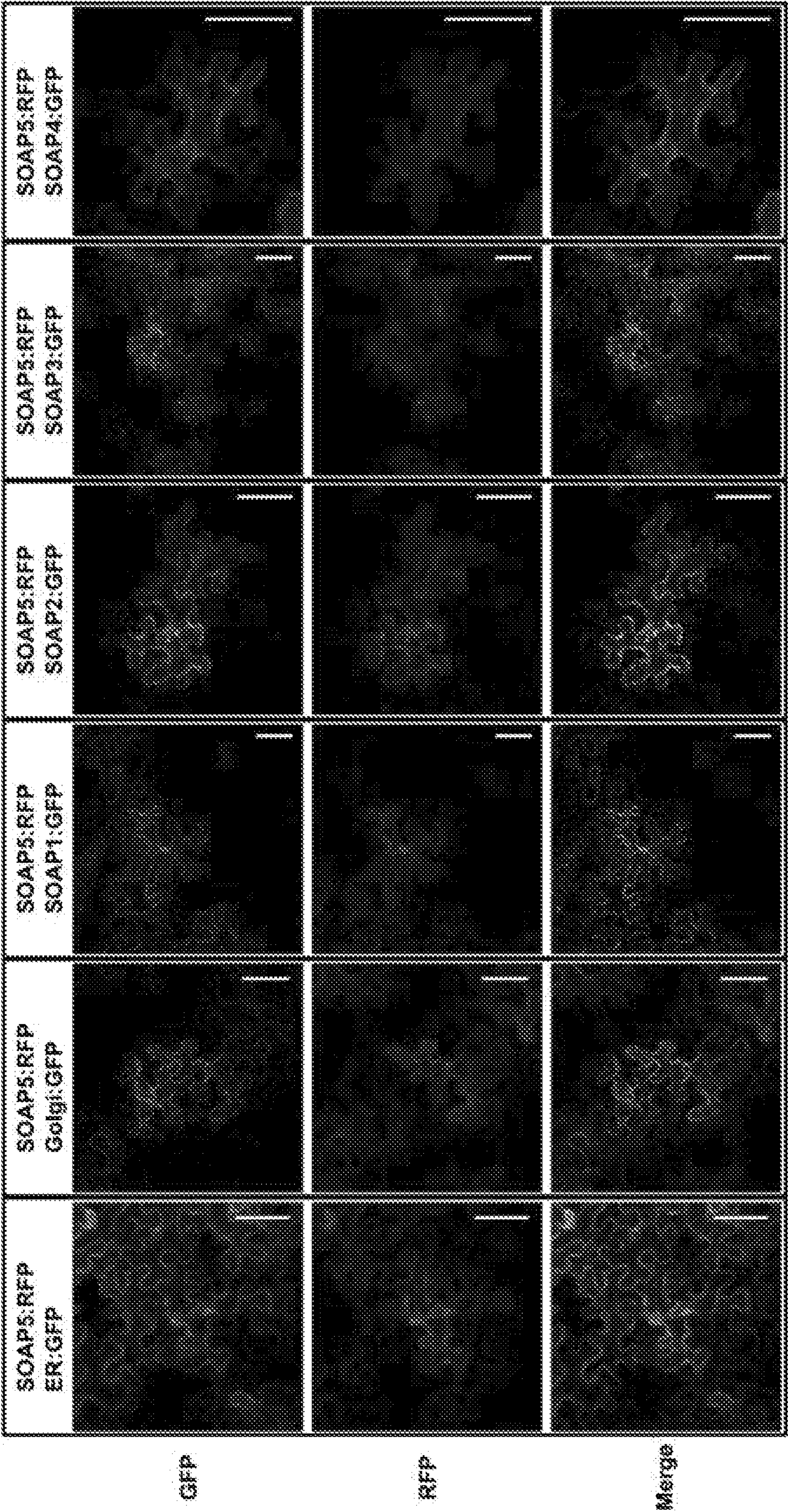


FIGURE 51A

FIGURE 51B

FIGURE 51C

FIGURE 51D

FIGURE 51E

FIGURE 51F

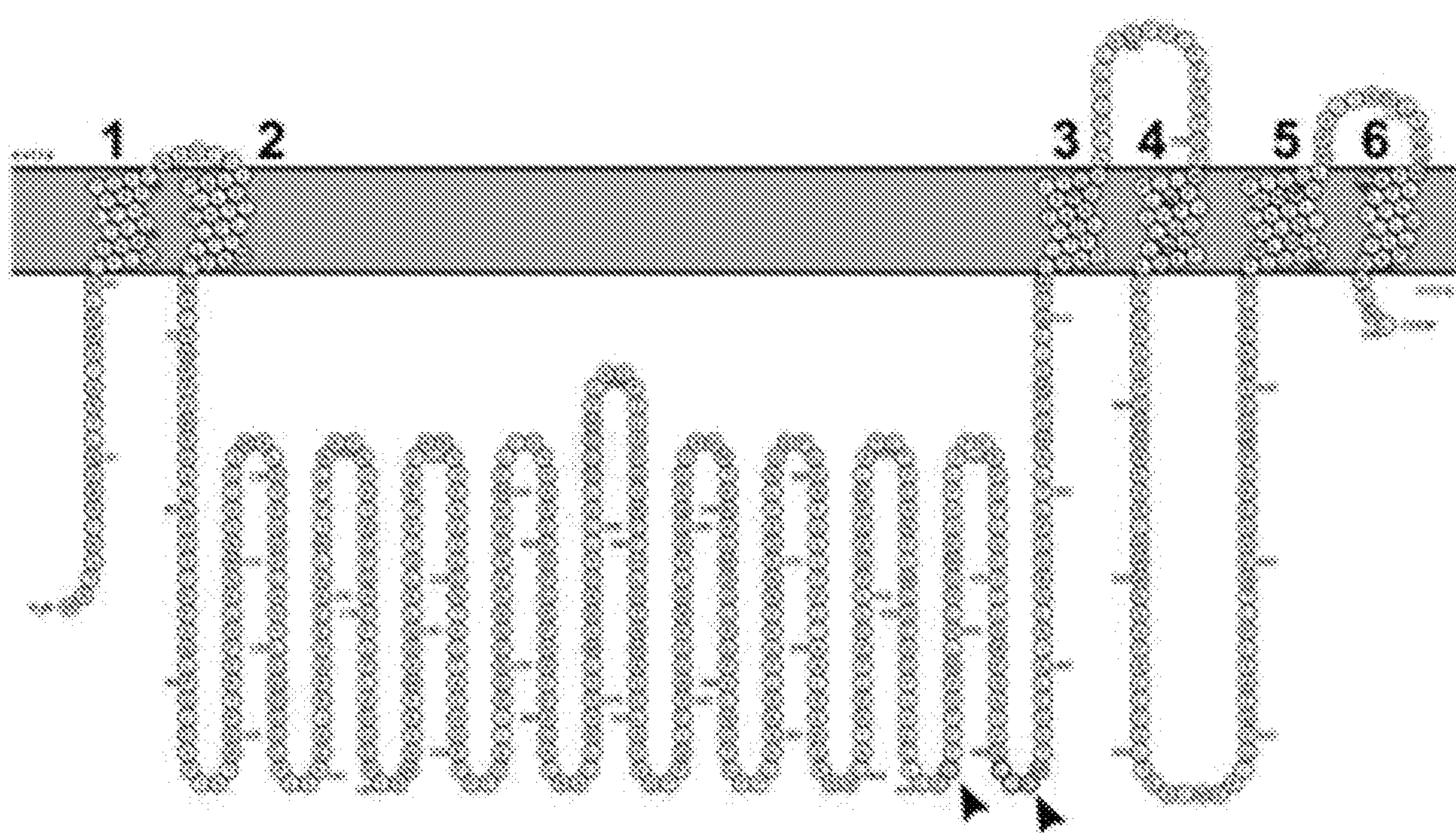


FIGURE 51G

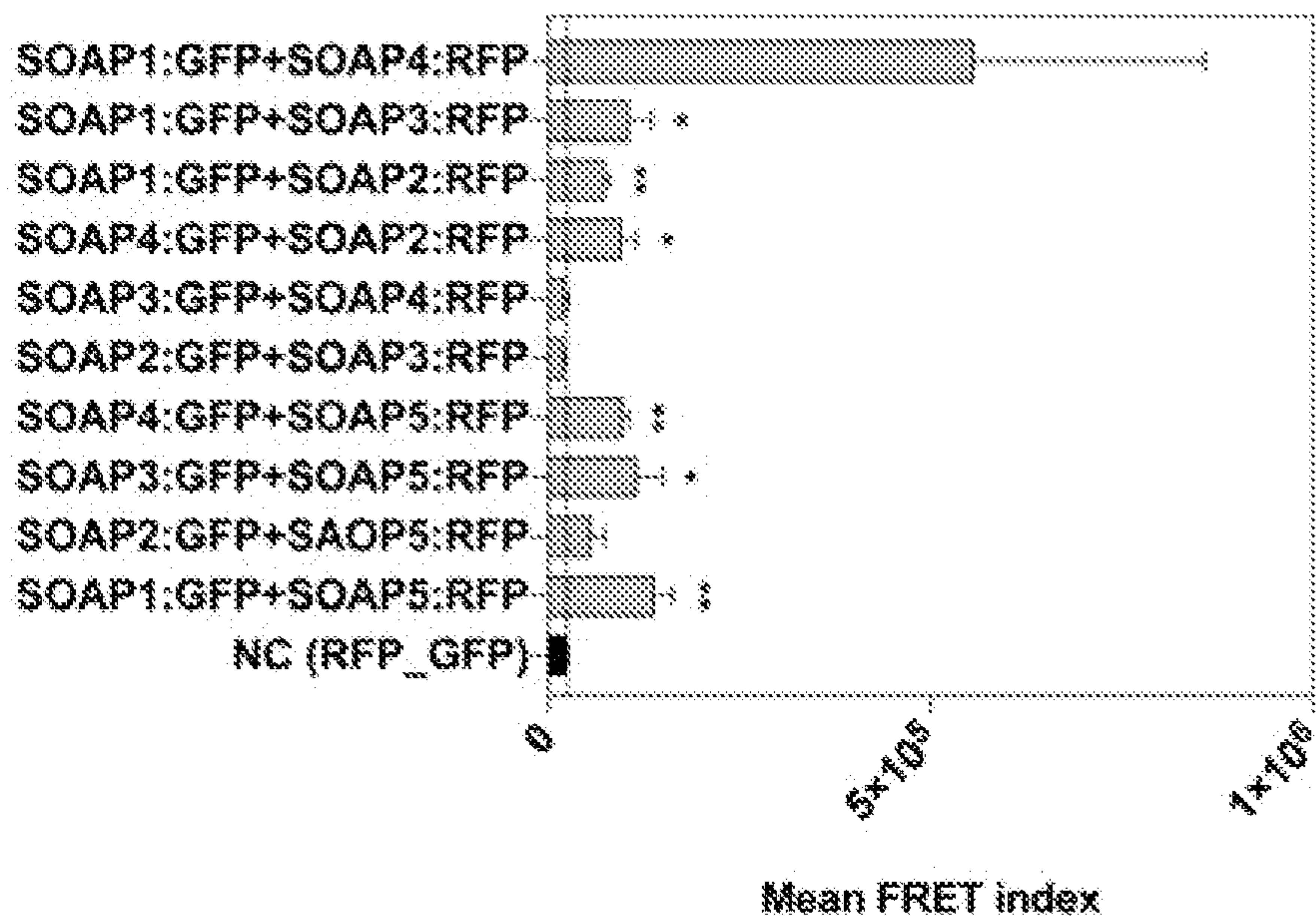


FIGURE 51H

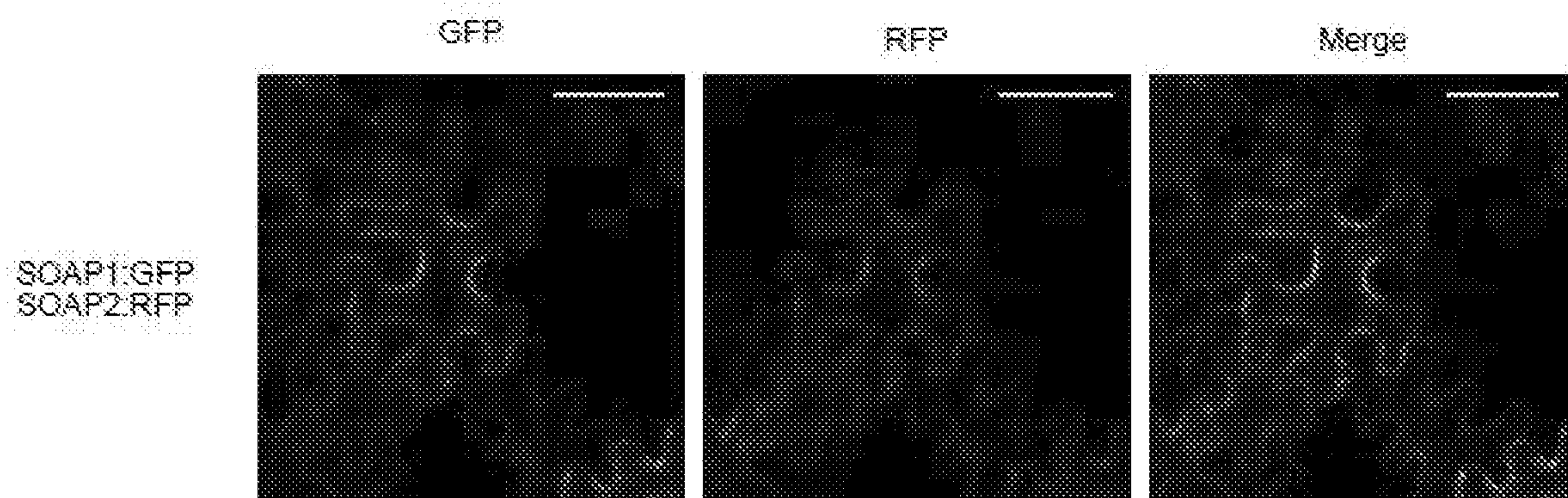


FIGURE 52A

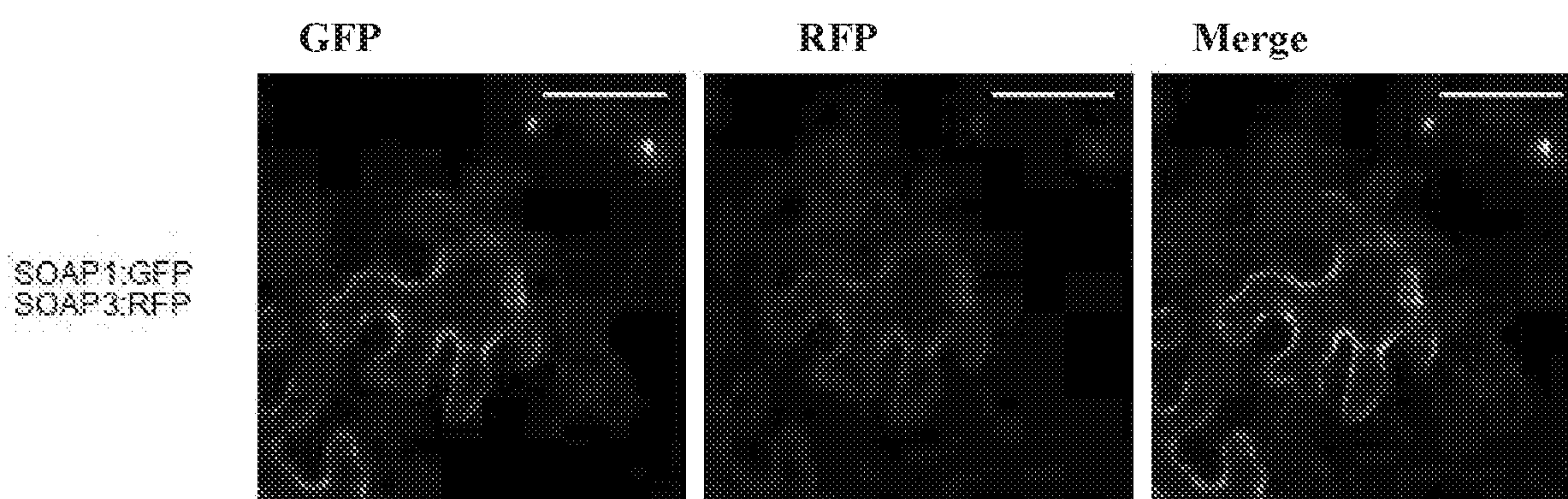


FIGURE 52B

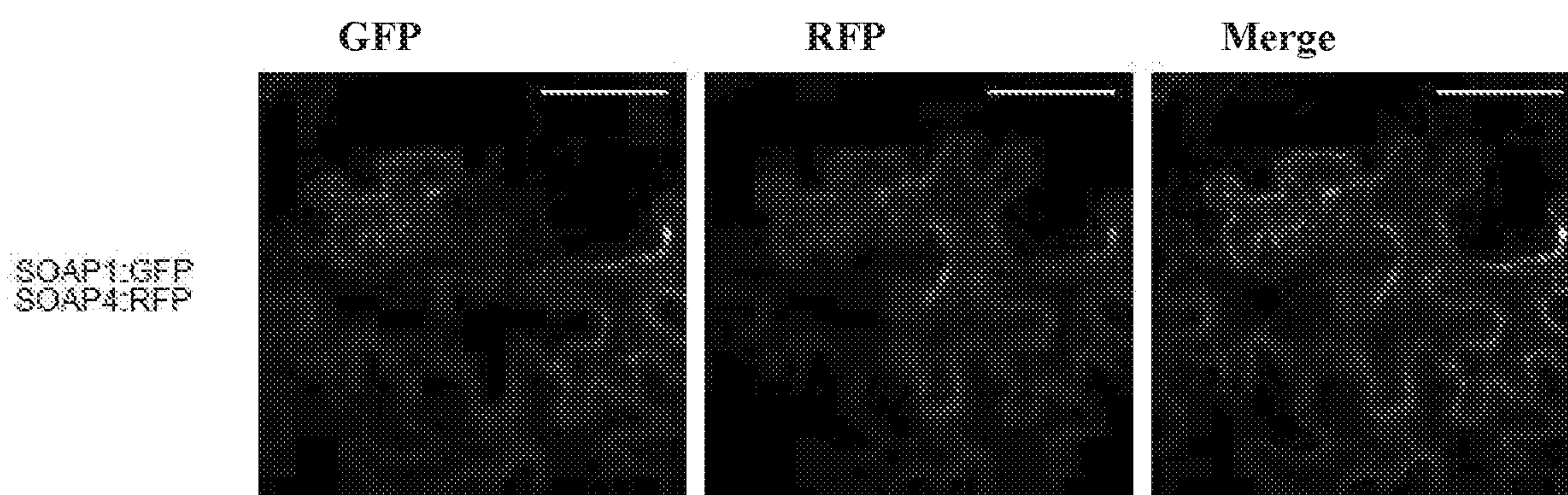


FIGURE 52C

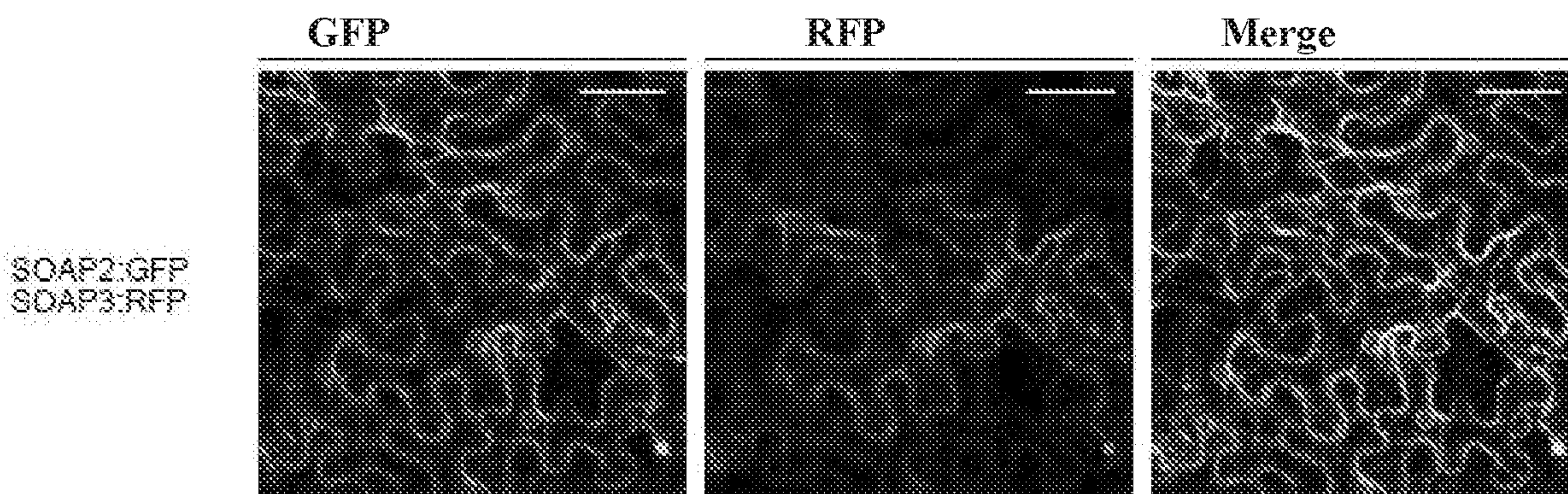


FIGURE 52D

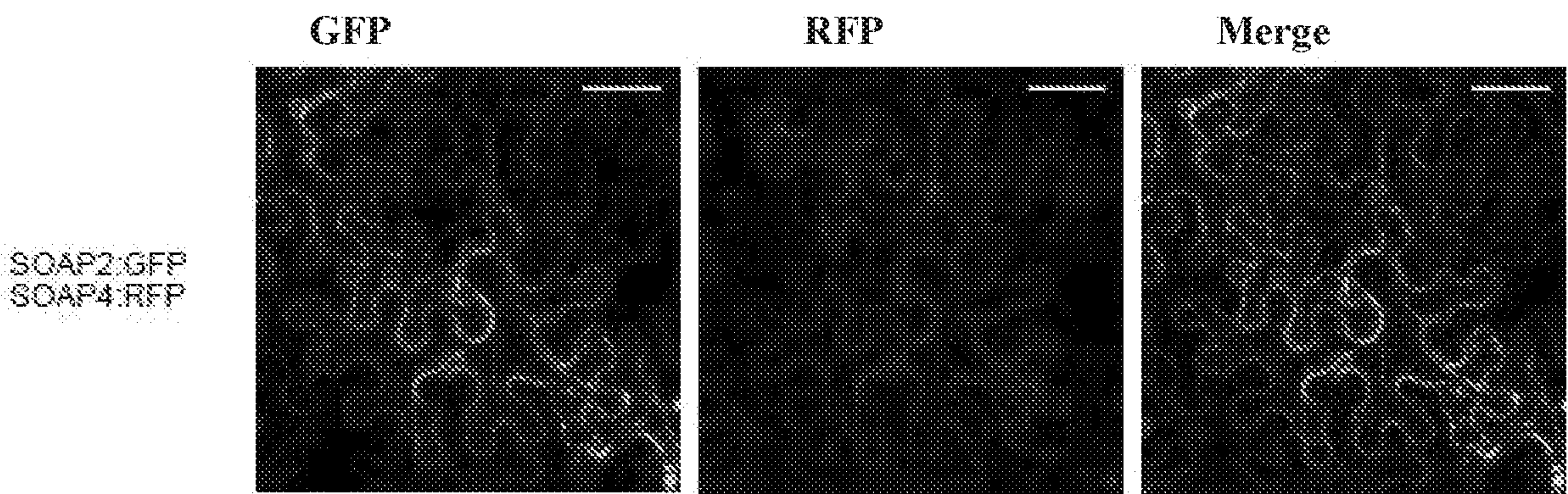


FIGURE 52E

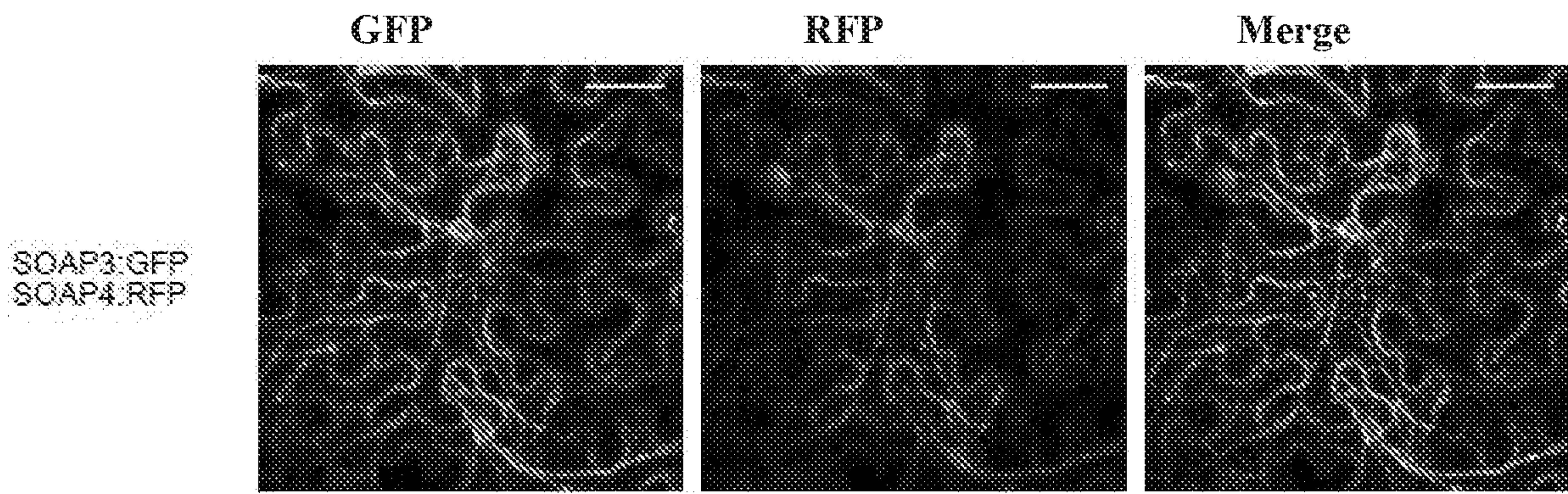


FIGURE 52F

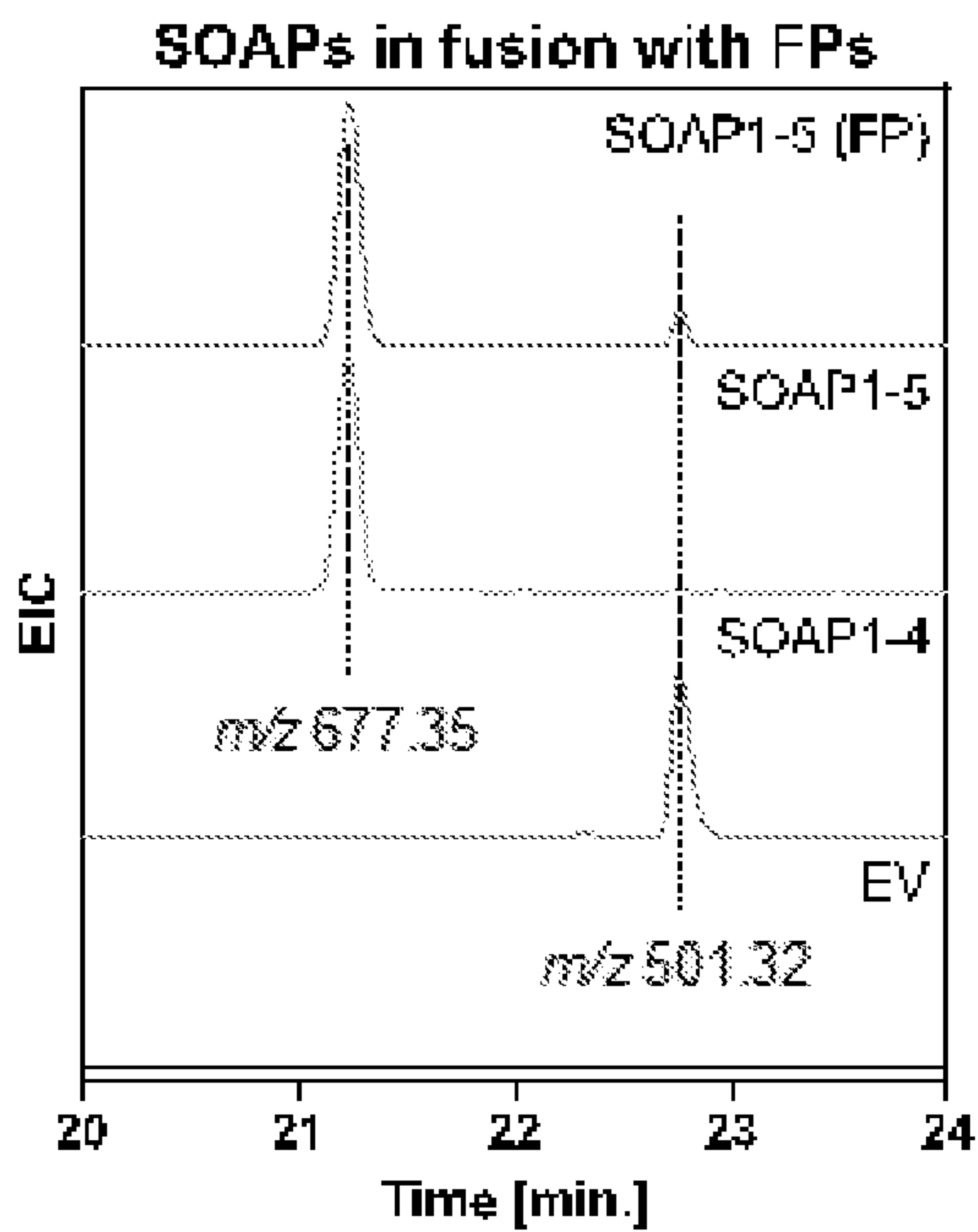


FIGURE 53

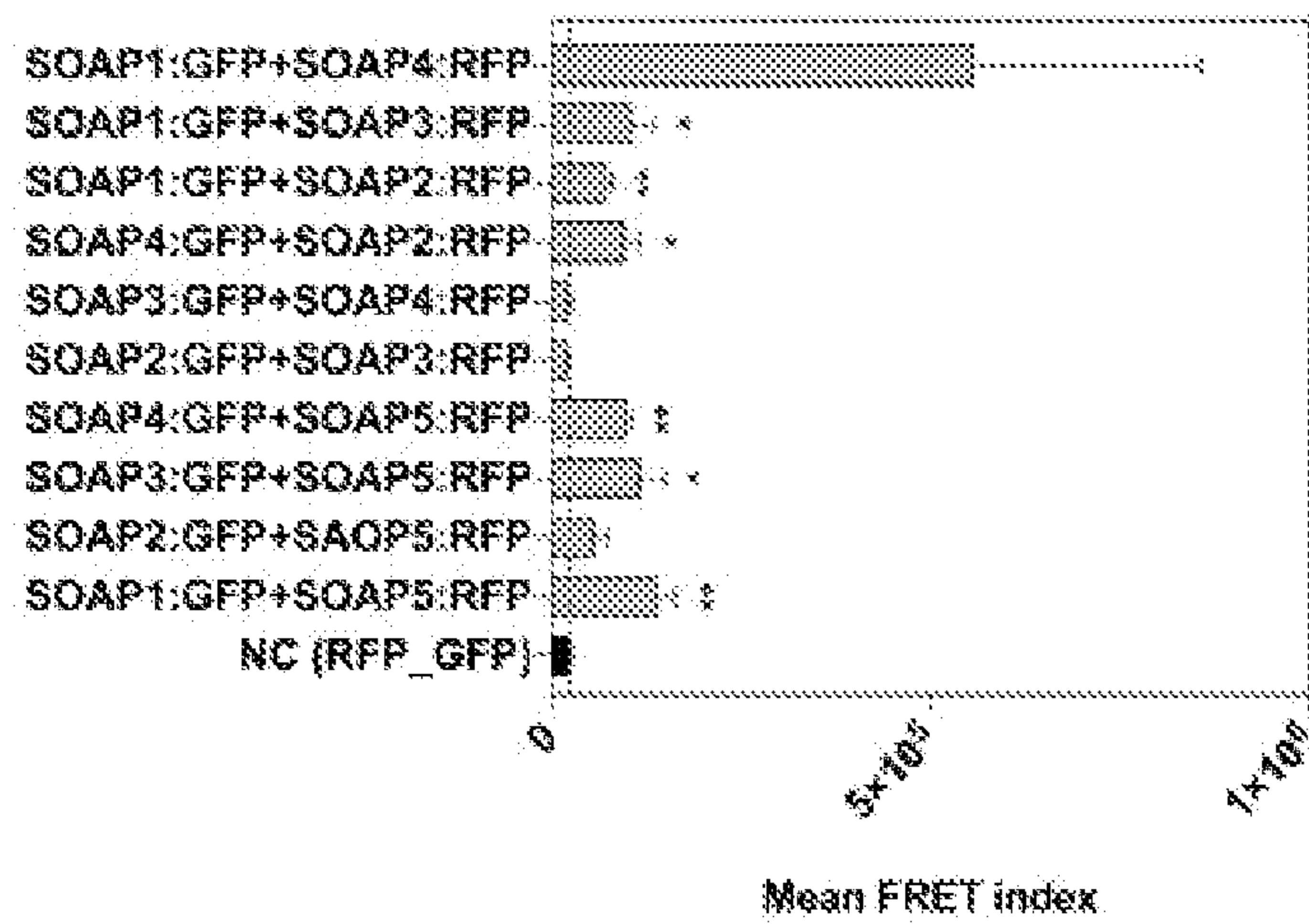


FIGURE 54A

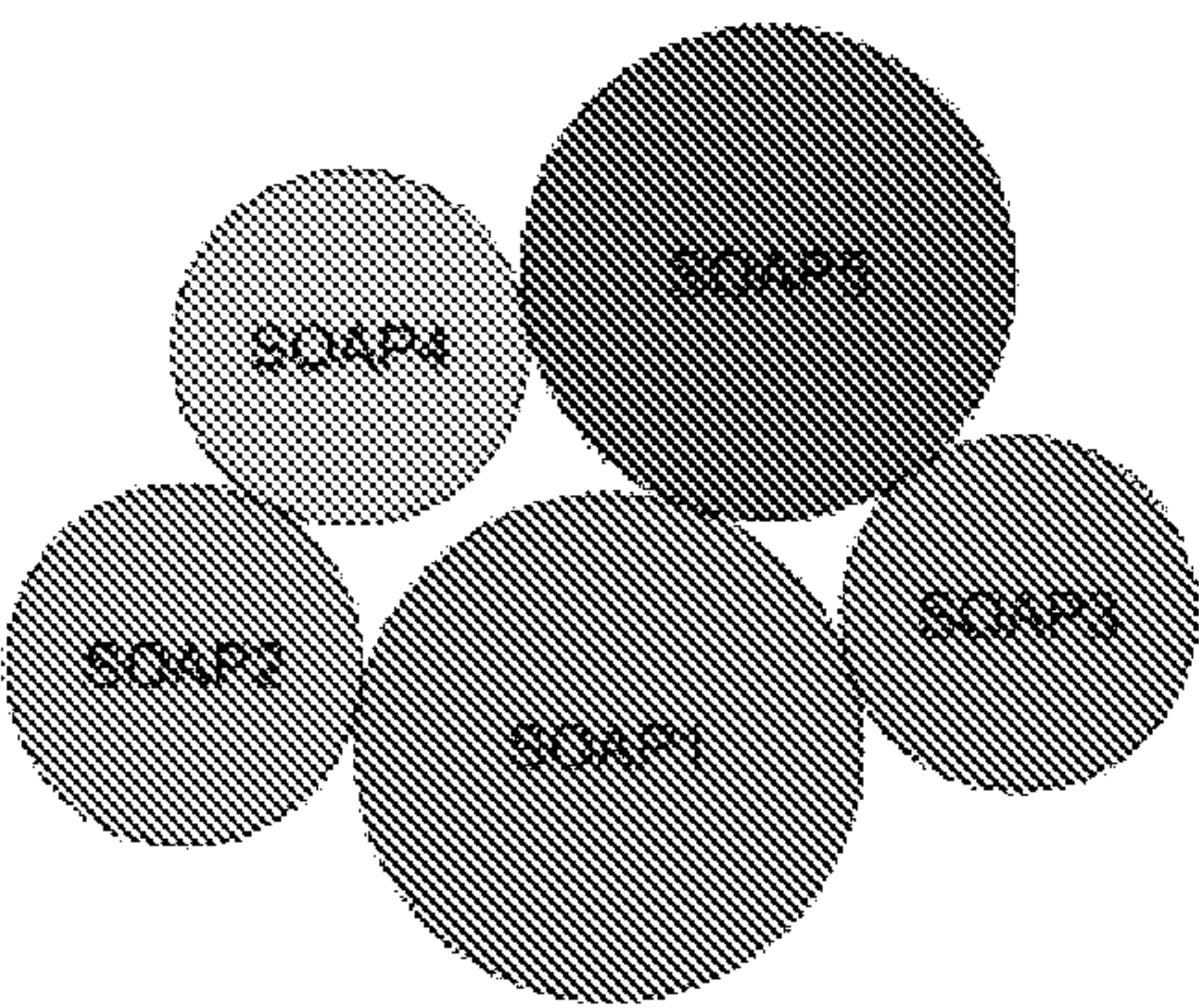


FIGURE 54B