**2'-(3-Chloropropoxy)cinnamanilide.**--Interaction of 18.0 g (0.75 mole) of *o*-hydroxycinnamanilide<sup>13</sup> with equivalent quantities of sodium methoxide and 1-bromo-3-chloropropane in isopropyl alcohol according to the above procedure gave 24.0 g of product, mp 115–119°. After crystallization from ethanol, the nearly colorless solid weighed 16.0 g ( $67^{\circ}_{C}$ ), mp 118–120°. Anal. Calcd for C<sub>8</sub>H<sub>18</sub>ClNO<sub>2</sub>: Cl, 11.23: N, 4.44. Found:

Anal. Calcd for  $C_8H_{18}CINO_2$ : Cl, 11.23: N, 4.44. Found Cl, 11.08: N, 4.55.

2'-{3-[4-(*o*-Methoxyphenyl)-1-piperazinyl]propylthio}cinnamanilide Hydrochloride (19).—A solution of 28.0 g (0.084 mole) of III in 200 ml of acetone was added to a stirred solution of 13.0 g (0.085 mole) of NaI in 150 ml of acetone and the mixture was refluxed for 6 hr. The solvent was removed under reduced

(13) V. R. Huisgen, H. Eder, L. Blazejewicz, and E. Mergenthaler, Ann., 573, 137 (1951). pressure and the residue was digested with 500 ml of warm toluene and filtered, and the filtrate was treated with 32.0 g (0.17 mole) of 1-(o-methoxyphenyl)piperazine. This mixture was refluxed for 5 hr, cooled, and filtered to remove the hydriodide salt of the starting piperazine (14.0 g). The filtrate was washed with 100 ml of water and then stirred with 150 ml of 1 N HCl. The hydrochloride which separated from the mixture was filtered, dried (25.0 g), and crystallized from 550 ml of isopropyl alcohol to give 20.5 g (47%) of colorless product, mp 191–193°.

**Acknowledgment.**—The authors are indebted to Dr. Bernard Rubin and his associates for the pharmacological data and to Mr. Joseph Alicino and his staff for the analyses reported herein.

## Some Cardiovascular Effects of a Series of Aryloxyalkylamines. II<sup>1</sup>

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Received September 30, 1965 Revised Manuscript Received June 8, 1966

A number of N-substituted phenoxyethylamines have been prepared and their antihypertensive activity examined in anesthetized normotensive cats and neurogenically hypertensive dogs. Examination of the structure-activity relationships shows that the 2-(2-methoxyphenoxy)ethylamino moiety is necessary for maximum effect. The structural requirements in further N substitution are much less specific. A summary of the results of clinical trials with three compounds is included.

In a previous series of phenoxyethylamines<sup>1</sup> a high level of antihypertensive activity was observed which was the result of a classical adrenolytic action, the blockade of  $\alpha$  receptors. The preparation of a number of analogous N-aralkyl, N-alkyl, N-alkenyl, and Nalkynyl derivatives (Tables I–XIII) was therefore undertaken. Some of these compounds were found to be potent antihypertensives with a long duration of action when tested in anesthetized normotensive cats and neurogenically hypertensive dogs.

The structure-activity relationships were determined on the basis of the results obtained using normotensive cats anesthetized with chloralose, the blood pressure changes being traced on a kymograph. The compounds were administered intravenously. The activities of individual compounds are related to that of N-[3-(2,5-dimethoxyphenoxy)propyl]-2-(2-methoxyphenoxy)ethylamine<sup>1</sup> (VI) which is given the arbitrary activity of 100, and which at a dose of 100 mg/kg produced a fall in mean arterial pressure of 60 mm, which lasted from 20 to 90 min and usually from 60 to 90. The comparison is of both potency and duration of action and is therefore a comparison of the areas given by the curves on the kymograph tracings under the straight line given by the normal blood pressure.

The effects of the more active compounds on the pressor responses of injected epinephrine and norepinephrine were examined. In contrast to the N-aryloxyalkylphenoxyethylamines of part I<sup>1</sup> where, in the fashion of typical adrenolytic agents, the pressor responses to norepinephrine were abolished and those to epi-

C. R. Worthing, J. Med. Chem., 8, 356 (1965).

nephrine were reversed, varying effects were observed, suggesting that the modes of action were only partly those of an adrenolytic agent.

In agreement with previous findings on structure activity relationships, it was established that the 2-(2-methoxyphenoxy)ethylamino moiety was necessary for a maximum antihypertensive effect when the compounds were administered intravenously to anesthetized cats. In contrast, the structural requirements for the rest of the molecule were much less specific. For example, high levels of activity have been demonstrated for such diverse structures as I–V.

OCH <sub>2</sub> CH <sub>2</sub> NH	łR
I, $R = CH_2CHOHCH_2OCH_2CH = CH_2$	(Table II, <b>28</b> )
II, $\mathbf{R} = (\mathbf{CH}_2)_3 \mathbf{OCH}_2 \mathbf{CH} = \mathbf{CH}_2$	(Table II <b>I,68</b> )
III, $\mathbf{R} = (\mathbf{CH}_2)_5 \mathbf{CN}$	(Table X,104)
IV, $R = (CH_2)_6 OCOCH_3$	(Table XII,110)
$V,  \mathbf{R} = (\mathbf{CH}_2)_4 \mathbf{C}_6 \mathbf{H}_4 \mathbf{OCH}_3 \cdot p$	(Table XIII, 119)
VI, $R = (CH_2)_3 OC_6 H_3 \cdot 2, 5 \cdot (OCH_3)_2$	

Compound I, unlike most other *o*-methoxyphenoxyethylamine derivatives of this series, potentiated the pressor effects of epinephrine and norepinephrine in dogs and was shown to act predominantly by a central mechanism. Compound III, however, reversed the pressor response to epinephrine without altering that to norepinephrine. Further work was precluded by the fact that toxic symptoms were observed at therapeutic doses and that the activity apparent after intravenous administration was not reproduced orally.

<sup>(4)</sup> Part I: J. Augstein, W. C. Austin, R. J. Boscott, S. M. Green, and

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# TABLE I N-Hydroxyalkyl-2-(substituted phenoxy)ethylamines



								(	alea, ½		ł	ouna, V		-Ac-
No.	$\mathbf{R}_{1}$	$\mathbf{R}_2$	R₃	$R_4$	Bp, °C (mm)	Method	Formula	С	$\mathbf{H}$	N	С	Н	N	tivity <sup>a</sup>
1	o-OCH₃	Н	н	н	$170 \ (1.3)^{b}$	B	$\mathrm{C}_{11}\mathrm{H}_{17}\mathrm{NO}_3$	62.54	8.11		62.50	8.01		10
$^{2}$	o-OCH3	Н	$CH_3$	н	143 (1)	В	$C_{12}H_{19}NO_3$	63.97	8.50	6.22	63.98	8.46	6.20	0
3	o-OCH3	н	$CH_3$	$CH_3$	128-130 (0.3)	А	$C_{18}H_{21}NO_8$	65.24	8.85	5.85	64.97	8.70	5.64	0
4	o-OCH3	н	$CH_3$	C₂H₅	146 - 149(2)	A	$C_{14}H_{28}NO_8$	66.37	9.15	5.53	66.25	9.40	5.03	10
5	o-OCH₃	н	СHз	$n-C_3H_7$	146 - 148(0.3)	в	$C_{15}H_{25}NO_3^c$	67.38	9.43	5.24	67.57	9.37	5.56	20
6	o-OCH₃	Н	$CH_3$	$n-C_4H_9$	158-160 (0.005)	А	$\mathrm{C}_{16}\mathrm{H}_{27}\mathrm{NO}_3$	68.29	9.67	4.98	68.41	9.67	4.73	15
7	o-OCH₃	н	CH3	$n-C_{6}H_{13}$	154 - 156 (0.002)	А	$C_{15}H_{31}NO_3$	69.86	10.10	4.53	69.74	10.37	4.42	0
8	o-OCH₃	Н	CH3	$CH_2CH=CH_2$	$129 - 130 \ (0.001)$	А	$C_{16}H_{23}NO_3$	67.94	8.68	5.28	68.29	8.64	5.22	10
9	o-OCH3	H	C2H5	$C_2H_5$	124(0.002)	А	$\mathrm{C}_{15}\mathrm{H}_{25}\mathrm{NO}_3$	67.38	9.43	5.24	67.44	9.30	4.80	10
10	o-OCH₃	$CH_2CH_2OH$	Η	H	165-170 (0.1)	В	$C_{13}H_{21}NO_4$	61.15	8.29	5.49	61.60	8.59	5.60	0
11	o-OCH3	$C_2H_5$	$CH_3$	$n-C_{8}H_{7}$	146 - 150 (0.6)	С	$C_{17}H_{29}NO_8$	69.11	9.90	4.74	69.13	9.79	4.30	0
12	o-OCH₃	CO-n-C3H7	$CH_3$	$n-C_3H_7$	194 - 198 (1)	В	$\mathrm{C}_{28}\mathrm{H}_{87}\mathrm{NO}_{b}{}^{d}$	67.78	9.15	3.44	68.02	9.38	3.88	0
13	н	Н	$CH_3$	$n-C_{3}H_{7}$	130 (0.5)	в	$C_{14}H_{23}NO_2$	70.85	9.77	5.90	70.70	10.15	5.65	0
14	m-OCH <sub>8</sub>	Н	$\rm CH_3$	$n-C_{3}H_{7}$	140 (0.1)	в	$C_{15}H_{25}NO_3$	67.38	9.43	5.24	68.00	9.58	5.24	10
15	$p\text{-}\mathrm{OCH}_3$	Н	$\mathrm{C}\mathrm{H}_3$	$n-C_3H_7$	158-160 (0.5)	В	$C_{15}H_{25}NO_3$	67.38	9.43		67.67	9.70		0
16	o-Cl	н	$CH_3$	$n-C_3H_7$	176 (1)	в	$C_{14}H_{22}ClNO_2$	61.86	8.12	5.12	61.76	8.56	5.09	0
17	$3,4-(CH_3)_2$	Н	$CH_3$	$n-C_3H_7$	136 (0.25)	в	$\mathrm{C}_{16}\mathrm{H}_{27}\mathrm{NO}_2$	72.41	10.26	5.28	71.97	10.36	5.59	0

<sup>a</sup> The antihypertensive activities are related to the compound N-[3-(2,5-dimethoxyphenoxy)propyl]-2-(2-methoxyphenoxy)ethylamine, which is given the arbitrary activity of 100. At 100  $\mu$ g/kg, this compound produces a fall in mean arterial pressure of 60 mm, which lasted for 20-90 min and usually 60-90 min. <sup>b</sup> W. S. Gump and E. J. Nikawitz [J. Am. Chem. Soc., 72, 3846 (1950)] reported bp 181-186° (4 mm). <sup>c</sup> Hydrochloride mp 77.5-78°. <sup>d</sup> O-Butyryl derivative. O,N acylation with butyryl chloride.

Compounds IV and V, in the fashion of a typical adrenolytic, both reverse the pressor effects of epinephrine while abolishing those due to norepinephrine. Compound IV like III, was not active after oral administration, although highly active by the intravenous route. Compound V, in dogs, appears, however, to act mainly by a central effect. At an oral dose of 2.5 mg/kg in dogs a sustained antihypertensive response was elicited which lasted more than 20 hr.

At various stages, I, V, and VI were submitted to clinical trial. In hypertensive patients, I produced a variable fall in blood pressure, lasting 0.5 hr, which was accompanied by an associated central depressive effect. Compound VI produced a predictable fall in blood pressure lasting 3-4 hr, accompanied by tachycardia which was sufficient to preclude its use as an antihypertensive agent. Compound V produced a fall in blood pressure of similar duration. This is in contrast with the longer duration shown in dogs and was accompanied by a considerable feeling of depression.

#### **Experimental Section**

Preparation of the Secondary Amines. A.—One molecular equivalent of substituted alkyl halide was added slowly to an excess of the required phenoxyalkylamine (2-4 moles) while stirring at 100°. When the addition was complete, heating and stirring were continued for a further 2 hr. The mixture was cooled, basified with dilute NaOH solution, and extracted with chloroform or methylene chloride. After drying and removing the solvent, the residue was distilled *in vacuo*. After recovery of excess starting amine, the products were usually obtained as colorless oils.

**B.**—As in **A**, except that a substituted alkylamine is treated with the requisite phenoxyalkyl halides.

C.—Equimolar quantities of amine and halide were mixed with an equivalent of  $Na_2CO_3$  or  $NaHCO_3$  in alcohol, and the resultant mixture was refluxed while stirring for 16–24 hr. The mixture was then cooled, inorganic salts were removed by filtration, the alcohol distilled, and the residue distilled *in vacuo*. The products were obtained as colorless oils, some of which solidified on standing.

**D**.—Some derivatives containing ester groupings were prepared from the N-benzylphenoxyethylamine and the requisite chloro compound followed by debenzylation of the product in acetic acid using hydrogen in the presence of 10% Pd–C catalyst at atmospheric pressure and room temperature.

**E.**—Other ester derivatives were prepared by esterification with the N-( $\omega$ -hydroxyalkyl)-2-phenoxyethylamine of the required acid as follows. The acid (1.5 moles), the alcohol (1 mole), *p*-toluenesulfonic acid (1.25 moles), and dry benzene were mixed and refluxed under a Dean–Stark trap, the theoretical quantity of water usually being obtained in 16–24 hr. The mixture was then cooled, excess acid was recovered by shaking with cold, dilute NaOH solution, it was washed with water and dried, and the solvent was removed. The products were then converted to, and purified as, the acid maleate.

N-[4-(4-Trimethylacetoxyphenyl)butyl]-2-(2-methoxyphenoxy)ethylamine Acid Maleate (15).—N-[4-(p-Hydroxyphenyl)-butyl]-N-benzyl-2-(2-methoxyphenoxy)ethylamine (5 g) and pivalyl chloride (14 g) were mixed together with dry pyridine (15 ml), the resultant mixture being heated on the steam bath for 1.5 hr. After cooling, the mixture was poured into ice water, then treated with Na<sub>2</sub>CO<sub>3</sub> solution, the resultant mixture being extracted with chloroform.

The residue (2.5 g) was then debenzylated by hydrogenation at atmospheric pressure and room temperature using  $10 \frac{C_o}{Pd-C}$  pred-C catalyst (0.5 g) in glacial acetic acid (15 ml). The product was obtained as the acid maleate which after several recrystallizations from ethyl acetate gave colorless needles, mp 114–115°.

N-(3,4-Dimethoxyphenethyl)-2-(2-hydroxyphenoxy)ethylamine Acid Maleate (24).—N-(3,4-Dimethoxyphenethyl)-2-(2benzyloxyphenoxy)ethylamine (25) (4 g) was debenzylated by hydrogenation in 95% alcohol (30 ml) in the presence of 10%Pd-C catalyst (1 g) at atmospheric pressure and room temperature. The product was isolated as the acid maleate, which was recrystallized several times from alcohol-ether and obtained as colorless needles, mp 138-139°.

N-[4-(4-Hydroxyphenyl)butyl]-2-(2-hydroxyphenoxy)ethylamine Hydrobromide.—N-[4-(4-Methoxyphenyl)butyl]-2-(2-methoxyphenoxy)ethylamine (5 g) was mixed with concentrated HBr (15 ml) and the mixture refluxed for 18 hr. On cooling, the resultant solid was filtered off, washed with cold water, and recrystallized several times from water. The product was obtained as colorless fine crystals, mp 219-220°.

Acknowledgment.—The authors wish to thank Mr. P. R. Wood for microanalytical data and Dr. H. Reinert for permission to quote pharmacological results and to acknowledge the technical contributions of Mr. A. L. Ham, Mr. A. B. Plane, and Miss M. J. Rasor.

II	
Тавье	

 $N-A_{LK}Y_{L}-2+(s_{U}s_{S}TTUCTED-PHENOXY) EPHYLAMINES$ 

No.	Rı	$R_2$	R.	Ra	Bp (mm) or mp. °€	u™o or other data	Method	Formula	c L	Caled, % II	Z	с Ес	ыпd, <sup>96-</sup> Н	Z	Ac- ivity <sup>a</sup>
18	0-0CH3	Π	П	HO	86-87	Needles (EtOAc)	8	${\rm C}_{12}{\rm H}_{19}{\rm NO}_4$	59.73	7.94	5.81	59.82	7.82	5,72	0
19	0-0CH3	Н	Ш	OCH <sub>a</sub>	68.5-70	Cryst (petr ether,	V	ChaH21NO4	61.15	8.29	5.49	61.53	8.39	5.48	0
20	0-OCH1	Н	II	$OC_3H_{7-H}$	158-161 (0.2)	-10-60°)									
21	0-0CH3	Ш	н	$OC_4 \Pi_{g-H}$	160 (0.005), 52 54		1.	$C_{1b}H_{2b}NO_4$	63.58	8.80	4.94	63.06	8.93	5.23	20
22	0-0CH3	Н	Н	$0C_b \Pi_{11-n}$	166-168 (0.2)		ŀ.	$C_{16}H_{27}NO_4$	64.62	9.15	4.71	64.37	8.94	4.83	20
23	0-0CHs	Н	Π	OC 36 H 13-11	180-182 (0.2)		1	C <sub>I7</sub> H <sub>29</sub> NO <sub>4</sub>	65.56	9.39	1.50	65.36	9.52	4.57	20
54	0-0CH2	Η	=	$OC_T \Pi_{16-R}$	188 (0.007)		1.	ChgHa1NO4	66.43	9.60	1.30	66.45	9.61	1.17	0
25	o-OCH3	Ξ	=	$00.8 \Pi_{17-h}$	193194 (0.3)		1	C <sub>19</sub> 1133NO4	67.22	9.80	1.13	66.97	9.97	4.13	0
							7	C34H36NO4	67.95	9.98	3,96	67.59	9.92	4.20	•
36	<i>0</i> -0CII <sub>3</sub>	H	11	осн(сн <sub>эа</sub>	178–180 (0.4), 71.5–72.5	Neetles (perr ether)	Y	C <sub>17</sub> H27NO4	65.99	8.80	4.53	66.00	8.68	4.31	9
27	0-0CH1	н	=	$O(\Pi_{2})_{s}$	176 (0.2)		1	0.18H29NO4	66.84	9 04	4.33	67.15	9.12	4.49	0
Sc.	a-OCH.	н	=	OCHP-CH-	161 (0.3)	1.5254	8	C <sub>16</sub> H <sub>23</sub> NO4	64.03	8.24	4.98	63.92	8.07	1.96	30
i						B/-HCl, mp 79.5-80°	2	C <sub>16</sub> H <sub>24</sub> CHO <sub>4</sub>	56.69	7.61	1 41	56.46	7.38	1.47	
						(EtOAc) B+AM, mp 85–86° (EtOAc)		$\mathrm{C}_{19}\mathrm{H}_{27}\mathrm{NO}_8$	57.42	6.85	3 52	57,42	£. 83	3 67	
29	0-0CH3	=	Ξ	осньен -сиспь	$181 \cdot 186 (0.4)$		1	$C_{16}H_{26}NO_4$	65.06	8.53	1-74	65 - 12	2 2 2	1 1	50
30	0-0CH3	Ξ	Ш	осн <sub>е</sub> сльсти сль	162 163 (0.01)		1	$C_{16}H_{26}NO_4$	65.06	8.53	4.74	64.92	8.59	4.55	20
Ĩ	0-0CH3	Ш	Н	$(0(CH_2)_3(TH_2 - CH_2)$	$168 - 171 \ (0.0006)$	1.5205	۲.	$C_{17}H_{27}NO_4$	65.99	8.80	1.53	65.66	8.80	4.35	15
32	0-0CH3	Ξ	н	0(СН <sup>а</sup> ) <sup>6</sup> СН СЛСИ <sup>4</sup> СИ <sup>3</sup>	169-171 (0.002)		1	$\mathrm{C}_{1\mathrm{S}}\mathrm{H}_{29}\mathrm{NO}_4$	66.84	9.04	4.33	66.59	8 95	4.14	10
22	6-OCH3	Ξ	Η	$OCH_2(CH = , CH)_2CH_3$	178-181 (0.02)		١.	$C_{18}\Pi_{27}NO_4$	67.26	8.17	1.36	66.83	8.28	1.80	5
				()											
12	0-0CH3	н	=	св сисиси – сиси <sup>а</sup>	172 176 (0.1)	1.5240	1	$\rm C_{1S}H_{27}NO_4$	67.26	8.47	4.36	67.30	8.56	1.31	Û
35	<i>o</i> -0CH <sub>3</sub>	Ξ	Ξ	رن برگاری (CHa)ور تین (CH	152 154 (0.2)		1	$C_{17} \Pi_{26} NO_4$	66. 12	8.20	1.56	66.36	8.27	1.17	01
92	a-0C11 <sub>a</sub>	=	Ξ	сПассенде сти -0	162 166 (0 0006)		V	$C_{\rm bs} H_{\rm es} NO_4$	67.26	8.47	1 36	67.23	8 70	1.13	06
1	<i>a</i> -OCH <sub>3</sub>	н	Ξ	H.) DHOHOPARDO	160-164 (0.005)	1.5213	1	$C_{\rm N}H_{\rm ef}NO_4$	67 26	in x	92.4	67 34	Ξ x	4.09	01

# Augstein, Austin, Bartram, and Boscott

N tivity"	91 0	1.20 0	1.18 10	.60 20	.13 0	1.86 0	.95 0		.26 0	5.26 0 5.05 20	8.26 0 5.05 20 8.99 0	2.26 0 5.05 20 5.99 0 5.74 0	1.26 0 5.05 20 5.99 0 5.74 0 0.11 0	1.26 0 5.05 20 5.99 0 5.74 0 5.11 0 5.45 10	2.26 0 5.05 20 5.99 0 5.74 0 5.11 0 5.45 10 1.96 0	256 0 5.05 20 5.99 0 5.74 0 0.11 0 0.11 0 0.45 10 1.74 10 1.74 10	2,26 0 5,05 20 5,99 0 5,74 0 0,111 0 0,111 0 0,111 0 1,145 10 1,45 10 1,245 10	26 0 5.05 20 5.99 0 5.11 0 0.11 0 0.11 0 1.11 0 1.12 0 1.96 0 1.91 10	2.26 0 5.05 20 1.99 0 0.11 0 0.11 0 0.45 10 1.74 10 1.74 10 1.74 10 1.74 10 1.74 10 1.96 0 1.74 10 1.97 10 1.96 10 1.96 10 1.96 10 1.96 10 1.96 10 1.96 10 1.96 10 1.66 100 100 100 100 100 100 100 100 100 1	<ul> <li>2. 26</li> <li>0</li> <li>5. 05</li> <li>20</li> <li>20</li> <li>20</li> <li>21</li> <li>21</li> <li>245</li> <li>10</li> <li>455</li> <li>10</li> <li>455</li> <li>10</li> <li>174</li> <li>10</li> <li>174</li> <li>10</li> <li>174</li> <li>10</li> <l< th=""><th>2.26 0 5.05 20 5.05 20 5.74 0 1.11 0 1.24 0 1.24 0 1.24 0 1.24 0 1.22 10 1.92 10 1.92 10 1.92 10 1.92 10 1.92 10 5.35 0</th><th><ul> <li>26</li> <li>05</li> <li>505</li> <li>505</li> <li>20</li> <li>11</li> <li>11</li> <li>111</li> <li>111</li> <li>111</li> <li>111</li> <li>112</li> <li>111</li> <li>111</li> <li>112</li> <li>110</li> <li>111</li> <li>1111</li> <li>111</li> <li>111</li> <li>111</li> <li>111</li> <li></li></ul></th><th>26600 20520 29900 211100 21100 21000 21100 2100 21000 21000 21000 21000 21000 21000 21000</th><th>256 0 205 20 299 0 111 0 111 0 145 10 145 10 146 0 1474 10 192 10 192 10 192 10 193 0 133 0 1.33 0 1.30</th><th>2.26 0 5.05 20 5.05 20 5.99 0 1.11 0 0.11 0 0.11 0 1.21 0 1.22 10 1.22 10 1.33 0 5.35 0 5.35 0 1.33 0 1.30 0 1.33 0 1.30 0 1.30 0 1.30 0 1.30 0 1.30 0 1.33 0 1.33 0 1.30 0 1.33 0 1.33 0 1.33 0 1.30 0 1.33 0 1.30 0 1.300</th><th><ul> <li>26</li> <li>26</li> <li>305</li> <li>305</li> <li>20</li> <li>45</li> <li>11</li> <li>145</li> <li>10</li> <li>171</li> <li>10</li> <li>171</li> <li>10</li> <li>133</li> <li>10</li> <li>133</li> <li>10</li> <li>133</li> <li>10</li> <li>133</li> <li>10</li> <li>133</li> <li>10</li> <li>15</li> <li>16</li> <li>15</li> </ul></th><th><ul> <li>26</li> <li>26</li> <li>305</li> <li>505</li> <li>20</li> <li>11</li> <li>145</li> <li>11</li> <li>146</li> <li>141</li> <li>10</li> <li>145</li> <li>10</li> <li>10</li> <li>10</li> <li>110</li> &lt;</ul></th><th><ul> <li>26</li> <li>26</li> <li>505</li> <li>505</li> <li>20</li> <li>505</li> <li>20</li> <li>11</li> <li>0</li> <li>11</li> <li>11</li> <li>12</li> <li>10</li> <li>13</li> <li>10</li> <li>11</li> <li>10</li> </ul></th><th>2. 26 0 2. 99 0 2. 74 0 0. 11 0 0. 45 10 1. 74 10 1. 74 10 1. 74 10 1. 33 0 1. 73 10 1. 33 0 1. 51 10 1. 51 10</th><th>2.26 0 2.99 0 2.74 0 0.11 0 0.45 10 1.74 10 1.74 10 1.74 10 1.74 10 1.73 0 1.73 0 1.73 0 1.73 0 1.74 10 1.74 10 1.75 100 100 100 100 100 100 100 100 100 10</th></l<></ul>	2.26 0 5.05 20 5.05 20 5.74 0 1.11 0 1.24 0 1.24 0 1.24 0 1.24 0 1.22 10 1.92 10 1.92 10 1.92 10 1.92 10 1.92 10 5.35 0	<ul> <li>26</li> <li>05</li> <li>505</li> <li>505</li> <li>20</li> <li>11</li> <li>11</li> <li>111</li> <li>111</li> <li>111</li> <li>111</li> <li>112</li> <li>111</li> <li>111</li> <li>112</li> <li>110</li> <li>111</li> <li>1111</li> <li>111</li> <li>111</li> <li>111</li> <li>111</li> <li></li></ul>	26600 20520 29900 211100 21100 21000 21100 2100 21000 21000 21000 21000 21000 21000 21000	256 0 205 20 299 0 111 0 111 0 145 10 145 10 146 0 1474 10 192 10 192 10 192 10 193 0 133 0 1.33 0 1.30	2.26 0 5.05 20 5.05 20 5.99 0 1.11 0 0.11 0 0.11 0 1.21 0 1.22 10 1.22 10 1.33 0 5.35 0 5.35 0 1.33 0 1.30 0 1.33 0 1.30 0 1.30 0 1.30 0 1.30 0 1.30 0 1.33 0 1.33 0 1.30 0 1.33 0 1.33 0 1.33 0 1.30 0 1.33 0 1.30 0 1.300	<ul> <li>26</li> <li>26</li> <li>305</li> <li>305</li> <li>20</li> <li>45</li> <li>11</li> <li>145</li> <li>10</li> <li>171</li> <li>10</li> <li>171</li> <li>10</li> <li>133</li> <li>10</li> <li>133</li> <li>10</li> <li>133</li> <li>10</li> <li>133</li> <li>10</li> <li>133</li> <li>10</li> <li>15</li> <li>16</li> <li>15</li> </ul>	<ul> <li>26</li> <li>26</li> <li>305</li> <li>505</li> <li>20</li> <li>11</li> <li>145</li> <li>11</li> <li>146</li> <li>141</li> <li>10</li> <li>145</li> <li>10</li> <li>10</li> <li>10</li> <li>110</li> &lt;</ul>	<ul> <li>26</li> <li>26</li> <li>505</li> <li>505</li> <li>20</li> <li>505</li> <li>20</li> <li>11</li> <li>0</li> <li>11</li> <li>11</li> <li>12</li> <li>10</li> <li>13</li> <li>10</li> <li>11</li> <li>10</li> </ul>	2. 26 0 2. 99 0 2. 74 0 0. 11 0 0. 45 10 1. 74 10 1. 74 10 1. 74 10 1. 33 0 1. 73 10 1. 33 0 1. 51 10 1. 51 10	2.26 0 2.99 0 2.74 0 0.11 0 0.45 10 1.74 10 1.74 10 1.74 10 1.74 10 1.73 0 1.73 0 1.73 0 1.73 0 1.74 10 1.74 10 1.75 100 100 100 100 100 100 100 100 100 10
und, % H	8.42	9.09	8.33	7.93	8.59	. 16.7	7.55	8.47		8.45	8.45 5 9.20	8.45 9.20 7.66	8.45 9.20 7.66 7.01	8.45 9.20 7.66 7.01 7.81	8.45 9.20 7.66 7.01 9.68 8.63	8.45 9.20 7.66 7.01 8.63 8.40 8.40	8.45 9.20 7.66 7.01 7.81 8.62 8.40 8.82 8.32	8.45 9.20 7.66 7.01 7.81 8.84 8.82 8.32	8.45 9.20 9.20 7.66 8.40 8.62 8.62 8.61 8.61	8.45 9.20 7.66 8.62 8.62 8.32 8.32 7.06 7.06	8.45 7.66 7.66 8.62 8.64 8.32 8.32 8.64 7.06 8.32 8.32 8.32 8.32 9.64 7.06 8.32 8.32 8.32 8.32 8.32 8.32 8.32 8.32	8.45 7.66 7.66 8.62 8.62 8.62 8.62 8.32 8.61 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1	8.45 9.20 7.66 8.62 8.62 8.62 8.32 9.15 9.15 9.15 9.15	8.45 9.20 7.66 7.01 7.01 8.62 8.62 8.62 8.62 7.06 9.15 9.15 8.13 8.13	8.45 7.01 7.01 8.60 8.64 8.64 8.33 9.15 8.33 9.15 8.33 9.15 8.33 9.15 8.33 9.15 8.33 9.15 8.33 9.15 15 15 15 15 15 15 15 15 15 15 15 15 1	8.45 7.01 7.01 8.60 8.64 8.64 9.15 8.33 9.15 8.26 8.26 8.26 9.15 1.06 1.00 8.20 8.20 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	8.45 7.01 7.01 8.40 8.64 8.64 9.15 9.15 9.15 8.26 8.26 8.26 8.26 8.26 8.26 8.26 8.26	8.45 7.01 7.01 8.40 8.40 8.33 9.15 8.33 9.15 8.33 9.15 8.26 8.26 8.26 8.26 8.26 8.26 8.26 8.26	8.45 7.66 7.66 8.40 8.40 9.15 8.33 9.15 8.33 8.13 8.13 8.13 8.13 8.13 8.13 8.13	8.45 7.66 7.66 8.40 8.62 8.40 9.15 9.15 8.33 9.15 8.33 9.15 8.33 9.15 7.06 9.15 8.33 8.33 8.33 7.06 15 8.33 8.13 8.13 7.06 15 7.06 15 8.33 7.06 7.09 15 8.32 8.32 15 7.06 15 7.01 15 8.40 5.52 8.33 15 7.06 15 7.01 15 8.40 5.52 8.32 8.32 15 7.06 15 7.701 15 7.01 15 8.40 5.56 8.33 8.40 5.56 8.33 8.33 8.33 8.15 15 7.06 15 7.06 15 8.32 8.32 8.32 8.32 8.32 8.32 8.33 8.33
C -Fo	60.43	63.20	62.54	60.52	67.25	62.87	62.29	65.49	65.07		67.63	67.63 60.95	67.63 60.95 58.02	67.63 60.95 58.02 60.23	67.63 60.95 58.02 60.23 64.98	67.63 60.95 58.02 60.23 64.98 63.74	67.63 60.95 58.02 60.23 64.98 64.19 64.19	67.63 60.95 58.02 60.23 64.98 63.74 64.19	67.63 60.95 58.02 60.23 64.98 63.74 64.19 64.19	67.63 60.95 58.02 60.23 64.98 63.74 64.19 64.19 64.82 58.88	67.63 60.95 58.02 64.98 64.19 64.19 64.19 64.82 67.82 58.88	67.63 60.95 58.02 61.98 61.19 61.19 61.19 61.23 61.23 61.23 61.23	67.63 60.95 58.02 64.98 64.98 64.19 64.19 64.19 64.19 64.30 58.30 56.30 61.93	67.63 60.95 58.02 60.23 64.98 64.19 64.19 64.19 67.82 58.88 58.88 61.93 61.93	67.63 60.95 58.02 64.98 64.19 64.19 67.82 67.82 67.83 67.41	67.63 58.02 58.02 64.98 64.19 64.19 64.19 61.30 61.33 61.30 61.33 61.30 61.33 61.30	67.63 60.95 58.02 64.98 64.19 64.19 61.82 67.83 61.93 61.70 61.70 61.51	67.63 60.95 58.02 60.23 61.98 61.19 61.19 61.23 67.41 61.51 61.51 61.51	67.63 60.95 58.02 64.98 64.19 64.19 61.83 61.93 61.83 61.51 61.51 61.81	67.63 60.95 58.02 64.98 64.98 64.19 61.83 65.34 61.51 61.93 61.70 61.51 61.81
z	4.68	4.10	4.30	4.71	4.36	4.33	3.83	3.32	4.74	4.15		3.96	3.96 9.03	3.96 9.03 9.45	3.96 9.03 9.45 4.74	3.96 9.03 9.45 4.74 4.98	3.96 9.03 9.45 4.74 4.98 4.98	3.96 9.45 9.45 4.74 4.98 4.98	3.96 9.03 9.45 4.74 4.98 4.98	3.96 9.03 9.45 4.74 4.98 4.98 4.98	3.96 9.03 9.45 4.98 4.98 4.98 4.98	3.96 9.03 9.45 4.74 4.98 4.98 4.98 4.90 4.39	3.96 9.03 4.74 4.98 4.98 4.98 4.98 4.39 4.39	3.96 9.03 9.45 4.74 4.98 4.98 4.98 4.98 4.33 4.33 3.33	3.96 9.03 4.74 4.74 4.98 4.98 4.98 4.99 4.23 3.33 3.33	3.96 9.45 4.74 4.74 4.98 4.98 4.98 4.93 4.23 3.33 3.33 4.50	$\begin{array}{c} 3.96\\ 9.45\\ 9.45\\ 4.74\\ 4.98\\ 4.98\\ 4.98\\ 4.99\\ 4.23\\ 3.33\\ 3.33\\ 4.50\\ 4.50\\ 4.50\end{array}$	$\begin{array}{c} 3.96\\ 9.45\\ 9.45\\ 4.74\\ 4.98\\ 4.98\\ 4.98\\ 4.99\\ 3.33\\ 3.33\\ 3.33\\ 4.50\\ 4.50\\ 4.50\end{array}$	3.96 9.03 4.74 4.74 4.98 4.98 4.98 4.98 4.93 4.23 3.33 4.23 4.23 4.50 4.50 4.50	3.96 9.03 9.45 4.74 4.98 4.98 4.98 4.98 4.93 4.23 3.33 3.33 4.23 4.23 4.50 4.50 4.50 4.50
aled, %- H	8.42	9.15	8.36	7.80	8.47	7.79	7.45	8.37	8.53	9.26	7.70		7.15	7.15 8.16	7.15 8.16 8.53	7.15 8.16 8.53 8.24	7.15 8.16 8.53 8.24 8.24 8.24	7.15 8.16 8.53 8.21 8.21 8.21	7.15 7.15 8.16 8.53 8.24 8.24 8.24 8.24	7.15 8.53 8.21 8.24 8.24 8.74 7.05	7.15 8.53 8.24 8.24 8.24 7.05 7.05	7.115 8.116 8.53 8.24 8.24 8.24 8.24 7.05 6.31	7.15 8.16 8.24 8.24 8.24 8.24 7.05 7.05 8.83 8.83 8.83	7.15 8.71 8.21 8.21 8.23 8.24 8.24 8.24 8.24 8.24 8.33 8.33 8.33 8.08	7.15 8.24 8.24 8.24 8.24 7.05 7.05 8.83 8.83 8.83 8.08 8.83 8.08	7.15 8.24 8.24 8.24 8.24 7.05 7.05 8.31 8.33 8.33 8.05 8.03 8.03 8.09	7.15 8.816 8.21 8.21 8.21 7.05 7.05 8.83 8.83 8.09 8.09 8.09	7.15 7.15 8.24 8.24 7.05 7.05 8.24 8.09 8.09 8.09 8.09 8.09	7.15 8.21 8.21 8.21 8.21 8.21 6.31 7.05 8.24 8.28 8.24 8.29 8.09 8.09 8.09 8.09	7.15 8.21 8.21 8.21 8.21 8.21 6.31 7.05 7.05 8.24 8.28 8.29 8.09 8.09 8.09 8.09 8.09
0	60.18	63.31	62.75	60.59	67.26	63.14	62.45	65.53	65.06	67.62	61.17		58.05	58.05 60.79	58.05 60.79 65.06	58.05 60.79 65.06 64.03	58.05 60.79 65.06 64.03 64.03	58.05 60.79 65.06 64.03 64.03	58.05 60.79 65.06 64.03 64.03 64.03 67.89	58.05 60.79 65.06 64.03 64.03 64.03 67.89 58.83	58.05 60.79 65.06 64.03 64.03 67.89 58.83 58.83	58.05 60.79 65.06 64.03 64.03 67.89 67.89 58.83 58.83	58.05 60.79 65.06 64.03 64.03 64.03 64.2 58.83 58.83 58.42 61.70	58.05 60.79 61.03 64.03 64.03 64.03 64.03 64.03 54.03 58.83 58.83 58.42 61.70 61.70	58.05 60.79 65.06 61.03 61.03 58.83 58.83 58.83 58.42 61.70 61.70	58,05 60,79 65,06 64,03 64,03 58,83 58,83 58,83 58,83 58,83 51,55 57,55 57,55 57,55	58,05 60,79 65,06 64,03 64,03 61,70 61,70 61,70 61,71 61,71	58,05 60,79 65,06 64,03 64,03 67,89 61,70 61,70 61,71 61,71 61,71	58.05 60.79 65.06 61.03 61.70 61.70 61.71 61.71 61.71 61.71 61.71 61.71	58,05 60,79 65,06 64,03 64,03 58,83 58,83 58,83 58,83 61,70 61,71 61,71 61,71 61,71 61,71
Formula	C <sub>16</sub> H <sub>25</sub> NO <sub>5</sub>	C <sub>18</sub> Ha1NO5	C <sub>17</sub> II <sub>27</sub> NO <sub>5</sub>	C <sub>16</sub> H <sub>23</sub> NO <sub>3</sub> S	C <sub>18</sub> II <sub>27</sub> NO4	CI7 II 25 NO6	$C_{19}H_{27}NO_6$	C23H36NO6	C <sub>16</sub> 11 <sub>25</sub> NO4	$C_{19}II_{31}NO_4$	$C_{18}H_{27}NO_6$		C16H24N2O5	C16H24N2O6 C16H24N2O4	C15H24N2O6 C15H24N2O4 C15H25NO4	C15H21N2O6 C15H21N2O4 C16H25NO4 C16H25NO4 C16H23NO4	CisH41N=206 CisH21N=204 CisH25NO4 CisH25NO4 CisH25NO4 CisH25NO4	C18H21N2O6 C18H23N2O4 C16H28NO4 C16H28NO4 C16H28NO4 C16H28NO4	C18H24N5O6 C18H24N5O4 C16H25NO4 C16H25NO4 C16H25NO4 C16H23NO4 C16H23NO4	Cisi H21 N ±06 Cisi H23 N ±04 Cisi H25 N 04 Cisi H25 N 04 Cisi H25 N 04 Cisi H25 N 03 Cisi H26 L 03	C16H21N±06 C16H21N±04 C16H25N04 C16H25N04 C16H25N04 C16H25N04 C14H24C1N05 C14H24C1N05	C16H21N±06 C16H21N±06 C16H35N04 C16H35N04 C16H35N04 C16H35N04 C16H32N04 C16H34C1N05 C16H34C1N05 C16H34C1N05	Cis H21 N ±06 Cis H23 N ±04 Cis H23 N 04 Cis H23 N 04 Cis H24 N 04 Cis H24 Ci N 03 Cia H24 Ci N 03 Cir H24 Ci N 03 Cir H24 Ci N 03	CisH21N ±06 CisH21N ±06 CisH28N 04 CisH28N 04 CisH28N 04 CisH25N 05 CisH25N 05 CisH26N 05 CisH26CN 05 CisH26CN 05 CisH26CN 05 CisH26CN 05 CisH26CN 05 CisH26CN 05	CisH24N ±06 CisH24N ±06 CisH28N 04 CisH28N 04 CisH23N 04 CisH23N 04 CisH24P3N 05 CisH24P3N 05 CisH24P3N 05 CisH24CIN 05 <sup>h</sup> CisH24CIN 06 <sup>h</sup>	CisH24N±06 CisH24N±06 CisH28N04 CisH28N04 CisH23N04 CisH23N04 CisH24N05 CisH24N05 CisH24CIN05 CisH24CIN06 CisH24CIN06 CisH24CIN06 CisH24CIN06	CisH21N ±0.6 CisH22N ±0.4 CisH22N 0.4 CisH22N 0.4 CisH22N 0.4 CisH22N 0.4 CisH24CiN 0.5 CisH24CiN 0.7 CisH24CiN 0.7 CisH24CIN 0.7 CisH25N 0.5 CisH25N 0.5 CisH25N 0.5	CisH24N±06 CisH24N±06 CisH28N04 CisH28N04 CisH28N04 CisH24N04 CisH24N05 CisH24CIN05 CisH24CIN05 CisH24CIN06 CisH26N05 CisH25N05 CisH28N05 CisH28N05 CisH28N05	Cis H21 N ±0.6 Cis H23 N ±0.4 Cis H23 N 0.4 Cis H23 N 0.4 Cis H23 N 0.4 Cis H24 P 3 N 0.5 Cis H24 Ci N 0.5 Cis H24 Ci N 0.6 Cis H24 Ci N 0.6 Cis H25 N 0.6 Cis H25 N 0.6 Cis H25 N 0.6 Cis H25 N 0.6	Cis H21 N ±0.6 Cis H22 N ±0.4 Cis H22 N 0.4 Cis H22 N 0.4 Cis H22 N 0.4 Cis H23 N 0.5 Cis H24 Ci N 0.5 Cis H24 Ci N 0.6 Cis H25 N 0.6
Method	V	V	P	P	v					¥	Υ				r	a a	8 2 2 3	21 22 23	<b>z</b> z z z	<b></b>	<b></b>									
$n^{20}$ or other data							Purified by chromatog		1.5169												583 -	1.4825	1.4825	1.4825	1.4825 I.4825 EtoAe-BloII (10:1)	1.4825 I.4825 EtoAe-BloII (10:1)	1.4825 I.4825 EtoAe-EtoII (10:1)	1.4825 I.4825 EtOAe-EtOII (10:1) 1.5252	1.4825 FLOAc-PLOH (10:1) 1.5252	1.4825 Eto.Ae-Ploii (10:1) 1.5252
or mp, °C	$188 - 190 \ (0.35)$	170 - 172 (0.006)	145 (0.02)	196(0.8)	151(0.2)	204 - 206(0.3)	Decompd	182 - 184 (0.005)	156-157 (0.25)	170 (0.3)	174 - 176(0.0008)	Not distilled		168-172 (0.0006)	168–172 (0.0006) 198 (1)	168-172 (0.0006) 198 (1) 187 (0.75)	168–172 (0.0006) 198 (1) 187 (0.75) 178–180 (0.5),	168–172 (0.0006) 198 (1) 187 (0.75) 178–180 (0.5), 63–65	$\begin{array}{c} 1.88-172 & (0,0006) \\ 1.98 & (1) \\ 1.87 & (0,75) \\ 1.78-180 & (0,5), \\ 63-65 \\ 1.82-181 & (2), 50-52 \end{array}$	168-172 (0.0006) 198 (1) 187 (0.75) 178-180 (0.5), 63-65 182-181 (2), 50-52 182-181 (2), 50-52 160-162 (0.15), 38-40	168-172 (0.0006) 198 (1) 187 (0.75) 178-180 (0.5), 63-65 182-181 (2), 50-52 182-181 (2), 50-52 160-162 (0.15), 38-40	$\begin{array}{c} 168-172 \ (0.0006) \\ 198 \ (1) \\ 187 \ (0.75) \\ 178-180 \ (0.5), \\ 63-65 \\ 182-181 \ (2), 50-52 \\ 182-181 \ (2), 50-52 \\ 182-128 \ (0.15), \\ 38-40 \\ 124-128 \ (0.006) \\ \end{array}$	$\begin{array}{c} 168-172 \ (0.0006) \\ 198 \ (1) \\ 187 \ (0.75) \\ 178-180 \ (0.5), \\ 63-65 \\ 182-181 \ (2), 50-52 \\ 182-181 \ (2), 50-52 \\ 160-162 \ (0.15), \\ 38-40 \\ 124-128 \ (0.0006) \\ B \cdot IIC11 \ 08.5- \\ 109.5 \end{array}$	168-172 (0.0006) 198 (1) 187 (0. 75) 178-180 (0. 5), 63-65 182-181 (2), 50-52 182-181 (2), 50-52 182-181 (2), 50-52 182-182 (0. 15), 38-40 124-128 (0. 0006) B · HC(198, 5- 109, 5 B · HC(195, 95	168-172 (0.0006) 198 (1) 187 (0.75) 178-180 (0.5), 63-65 182-181 (2), 50-52 182-181 (2), 50-52 182-181 (2), 50-52 182-191 (0.15), 38-40 124-128 (0.0006) B-11C1108.5- 109.5 B-11C1182.5- 109.5 B-11C1182.5- 1183.5	168-172 (0.0006) 198 (1) 187 (0.75) 178-180 (0.5), 63-65 182-181 (2), 50-52 182-181 (2), 50-52 182-181 (2), 50-52 182-181 (2), 50-52 182-18 (0.0006) B-11C1 108.5- 109.5 B-11C1 182.5- 183.5 194-198 (0.6)	168-172 (0.0006) 198 (1) 187 (0.75) 178-180 (0.5), 63-65 182-181 (2), 50-52 182-181 (2), 50-52 182-181 (2), 50-52 182-198 (0.15), 38-40 124-128 (0.0006) B-11C(1108.5- 199.5 B-11C(1182.5- 183.5 194-198 (0.6) 198-200 (0.7)	168-172 (0.0006) 198 (1) 187 (0.75) 178-180 (0.5), 63-65 182-181 (2), 50-52 182-181 (2), 50-52 182-181 (2), 50-52 182-198 (0.15), 38-40 124-128 (0.0006) 124-128 (0.0006) 194-198 (0.6) 194-198 (0.6) 194-166 (0.0006),	168–172 (0.0006) 198 (1) 187 (0. 75) 178–180 (0. 5), 63–65 182–181 (2), 50–52 182–181 (2), 50–52 160–162 (0. 15), 38–40 124–128 (0. 0006) B · HCl 95–95 B · HCl 95–95 B · HCl 95–95 B · HCl 95–96 B · HCl 95–96 B · HCl 182 . 5 194–198 (0. 6) 198–200 (0. 7) 164–166 (0. 0006),	168-172 (0.0006) 198 (1) 187 (0. 75) 178-180 (0.5), 63-65 182-181 (2), 50-52 182-181 (2), 50-52 160-162 (0.15), 38-40 124-128 (0.0006) B-11C1108.5- 109.5 B-11C1108.5- 199.5 194-198 (0.6) 198-200 (0.7) 198-200 (0.
R	OCH2CH2OCH3	OCII2CII2OC4H9-n	OC(CH <sub>3</sub> ) <sub>2</sub> COCH <sub>3</sub>	SCH2CII=.CH2	OCH2CIF CH2	0CH2CH=CH2	0CH2CH=CH2	OCIII2CH==CH2	OCH2CH=CH2	OCH2CII=CII2	OCH2CII=CH2	OCH2CH =CH2		OCH2CH=CH2	ОСН2СН=СН2 ОСН2СП-=СП2	0CH2CH=CH2 0CH2CH=CH2 0CH2CH=-CH2 0CH2CH=-CH2	0CH2CH=CH2 0CH2CH=CH2 0CH2CH=:CH2 0CH2CH=:CH2 0CH2CH=:CH2	0CH_CH=CH <sub>2</sub> 0CH_CH=CH <sub>2</sub> 0CH <sub>2</sub> CH=-CH <sub>2</sub> 0CH <sub>2</sub> CU=-CH <sub>2</sub>	0CH5CH=CH, 0CH5CH=CH, 0CH5CH=CH, 0CH2CH=CH, 0CH2CH=CH, 0CH2CH=CH,	0CH5CH=CH5 0CM5CH=CH5 0CH5CH=CH5 0CH5CH=CH5 0CH5CH=CH5 0CH5CH=CH5 0CH5CH=CH5	0CH_CH=CH, 0CH_CH=CH, 0CH_CH=CH_ 0CH_CH=CH_ 0CH_CH=CH_ 0CH_CH=CH_ 0CH_CH=CH_	0CH5CH=CH 0CH5CH=CH 0CH5CH=CH 0CH5CH=CH 0CH5CH=CH 0CH5CH=CH 0CH5CH=CH 0CH5CH=CH	$0CH_{3}CH=CH_{1}$ $0CH_{3}CH=-CH_{2}$ $0CH_{3}CH=-CH_{2}$ $0CH_{3}CH=-CH_{2}$ $0CH_{3}CH=-CH_{2}$ $0CH_{3}CH=-CH_{2}$ $0CH_{3}CH=-CH_{2}$	$\begin{array}{l} 0 \\ 0 \\ 0 \\ C \\ H_{3} \\ C \\ H_{1} \\$	0CH <sub>3</sub> CH=CH <sub>5</sub> 0CH <sub>2</sub> CH=-CH <sub>5</sub> 0CH <sub>2</sub> CH=-CH <sub>5</sub> 0CH <sub>3</sub> CH=CH <sub>5</sub> 0CH <sub>3</sub> CH=CH <sub>5</sub> 0Ch <sub>1</sub> -n 0C <sub>5</sub> M <sub>1</sub> -n 0C <sub>5</sub> M <sub>1</sub> -n 0C <sub>5</sub> M <sub>1</sub> -n	0CH4CH=CH4 0CH4cH=CH4 0CH4cH=CH4 0CH4cH=CH4 0CH4cH=CH4 0CH4cH=CH4 0C4h1-n 0C4h1-n 0Ch11-n 0Ch4cH= CH4	$\begin{array}{l} 0.0 \text{CH}_{2}\text{CH}=\text{CH}_{3},\\ 0.0 \text{CH}_{3}\text{CH}=\text{CH}_{3},\\ 0.0 \text{H}_{3}\text{CH}=\text{CH}_{3},\\ 0.0 \text{H}_{3}\text{CH}=\text{CH}_{3},\\ 0.0 \text{H}_{3}\text{CH}=\text{CH}_{3},\\ 0.0 \text{G}_{4}\text{H}_{1}-n,\\ 0.0 \text{G}_{4}$	$\begin{array}{l} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 $	$0CH_{2}CH=CH_{2}$ $0CH_{3}CH=-CH_{3}$ $0CH_{3}CH=-CH_{3}$ $0CH_{3}CH=-CH_{3}$ $0CH_{3}CH=-CH_{3}$ $0CH_{3}CH=-CH_{2}$ $0CH_{3}CH=-CH_{2}$ $0C_{3}H_{11}-n$ $0C_{3}H_{11}-n$ $0C_{4}H_{11}-n$ $0CH_{4}CH=-CH_{3}$ $0CH_{4}CH=-CH_{3}$ $0CH_{4}CH=-CH_{3}$ $0CH_{4}CH=-CH_{3}$	$0CH_{2}CH=CH_{1}$ $0CH_{2}CH=-CH_{2}$ $0CH_{2}CH=-CH_{2}$ $0CH_{2}CH=-CH_{2}$ $0CH_{2}CH=-CH_{2}$ $0CH_{2}CH=-CH_{2}$ $0CH_{2}CH=-CH_{2}$ $0CH_{1}-n$ $0C_{3}H_{1}-n$ $0C_{4}H_{1}-n$ $0CH_{4}CH=-CH_{2}$ $0CH_{4}CH=-CH_{2}$ $0CH_{4}CH=-CH_{2}$ $0CH_{4}CH=-CH_{2}$ $0CH_{4}CH=-CH_{2}$ $0CH_{4}CH=-CH_{2}$ $0CH_{4}CH=-CH_{2}$ $0CH_{4}CH=-CH_{2}$
${ m R}_3$	Н	II	11	Н	CH2CH=CH2	COCH	COCH <sub>3</sub>	$COC_3H_{7-n}$	Н	Ш	Н	Н		Н	Н	н Н	H H H II	ннн	<u>н</u> пна п	<u>на</u> на н п	<u>дата и с</u> р	цы <u>н</u> д н д с:	2243 H Z 22		<b>X X X X X X X X X X X X X X X X X X X </b>	<b>2272 H Z Z Z H Z</b>	<b>XXXX X X X X X X X X X X X X X X X X X</b>	<b>XXXX X X X X X X X X X X X X X X X X X</b>	<b>XXXX X X X X X X X X X X X X X X X X X</b>	<b>X X X X X X X X X X X X X X X X X X X </b>
${ m R}_2$	Н	Ш	П	н	II	II	COCIII3	$COC_3H_{7-n}$	$CH_3$	n-C4115	COOC <sub>2</sub> II <sub>5</sub>	NO		N112	NII₃ H	NIII <sub>2</sub> H H	NIII2 H H H	NIII: H H	NШ <sup>2</sup> Н Н Н	NЦ: Н Н Н Н	- н н н н н н	ÎNE E E E	- N N N N N N N N N N N N N N N N N N N	ÎNA A A A A A					ARAN A ARA SASA	N R R R R R R R R R R R R R R R R R R R
Rı	5H <sub>3</sub>	)CH3	DCH3	OCH3	-OCII3	OCH3	-OCH3	-OCH3	-0CH3	-OCH3	-0CH3	p-0CH3		0-0CH3	0-0CH3 0-0C2H5	0-0CH3 0-0C2H5 m-0C113	<i>•</i> -ОСН <sub>3</sub> <i>•</i> -ОС <sub>2</sub> Н <sub>6</sub> <i>m</i> -ОСП <sub>3</sub> <i>p</i> -ОСН <sub>3</sub>	0-ОСН <sub>3</sub> 0-ОС2Нь <i>m</i> -ОСН3 <i>p</i> -ОСН3	ОСП₃ ОС;Н₅ <i>m</i> -ОСЛ₃ <i>p</i> -ОСН₃ СП₃	-0CII <sub>3</sub> - -0C <sub>3</sub> H <sub>5</sub> -0CH <sub>3</sub> -0CH <sub>3</sub> -0CH <sub>3</sub> -0CH <sub>3</sub> -0CH <sub>3</sub>	-0CII3 -0CJI3 -0CJI3 -0CH3 -CII3 -CII3 -CII3		-0CH3 -0CH5 -0CH3 -0CH3 -0CH3 -CH3 -CH3 -CH3 -CH3	0-0СП3 0-0С2Н3 <i>m</i> -0СЛ3 <i>p</i> -0СН3 0-СП3 0-СН3 0-СН3 0-СН3	0-ОСП3 0-ОС3Н3 <i>m</i> -ОС3Н3 <i>p</i> -ОСН3 0-СП3 0-СП3 0-СН3 0-СН3 0-СН3 0-ОСН3САН5	0-0СП3 0-0С3Н3 m-0С3Н3 p-0СН3 0-СП3 0-СН3 0-СН3 0-СН3 0-ОН 0-ОН	0-0СП3 0-0С3Н5 m-0С3Н5 p-0СН5 0-СП3 0-СП3 0-СН5 0-СН5 0-СН5 0-0Н 0-0H 2-3-(0СП3)2 2-4-(0СН3)2	<i>•</i> -0СП <sub>3</sub> <i>•</i> -0С3Н <sub>5</sub> <i>m</i> -0С3Н <sub>5</sub> <i>m</i> -0С1H <sub>5</sub> <i>•</i> -0СH <sub>3</sub> <i>•</i> -СП <sub>3</sub> <i>•</i> -СП <sub>3</sub> <i>•</i> -СН <sub>5</sub> <i>•</i> -СH <sub>5</sub> <i>•</i> -СH <sub>5</sub> <i>•</i> -СH <sub>5</sub> <i>•</i> -СH <sub>5</sub> <i>•</i> -СH <sub>5</sub> <i>•</i> -СH <sub>3</sub> <i>•</i> -0H <i>•</i> -0H <i>•</i> -0H <i>•</i> -0CH <sub>3</sub> 2 <i>•</i> -0CH <sub>3</sub> 2	e-OCII <sub>3</sub> OCJI <sub>3</sub> OCJI <sub>3</sub> CII <sub>3</sub>	<i>•</i> -0СП <sub>3</sub> <i>•</i> -0С3Н <sub>5</sub> <i>m</i> -0С3Н <sub>5</sub> <i>m</i> -0С11 <sub>5</sub> <i>•</i> -0СН <sub>3</sub> <i>•</i> -СП <sub>3</sub> <i>•</i> -СП <sub>3</sub> <i>•</i> -СЦ <sub>5</sub> <i>•</i> -СЦ <sub>5</sub> <i>•</i> -СЦ <sub>5</sub> <i>•</i> -СЦ <sub>3</sub> <i>•</i> -ССЦ <sub>3</sub>
	0-0	0-0	-6	9	0	é	Ś	0	e	0	•	-							• · · •	0 0 0	<b>~~~</b> 3 <b>~</b> 7									

TABLE III

		N-AL	Kyl-2-(sebstitu	TED P	henoxy)ethy	LAMINES		CH₂CH₂N   F	$N(CH_2)_n OR_2$	à		
No.	R	$R_2$	Rs	11.	Bp, °C	Methor	→  \R <sub>I</sub> i Formula	- ~(* C	aled, Gerrer H N	-F C	bund, $\mathbb{C}_{\ell^{+}}$ H N	- Ae- tivity <sup>a</sup>
65	o-OCHa	Н	n-C4H9	2	134-136 (0.7)	Α	$C_{15}H_{2b}NO_5$	67.38	9,43-5,24	67.56	9.26 4.94	10
$66^{b}$ 67	o-OCHs	11	CH <sub>3</sub> mcCaHz	3	139-140 (0.6) 149-151 (0.6)	В	C18H21NOs C14H21NOs	65.24 67.38	8.85 5.85 9.43 5.24	65.28	9.09 5.69	40 10
680	0-OCH3	H	$CH_2CH_2 \cap CH_2$	3	137-139 (0.35)	.\	C15H23NO3	67.94	8.68 5.28	64.57	-8.76 5.19	60
60	* OC11.	U	OR OTHE OTHER	T 1)	100 100 (0.01)	,	C <sub>18</sub> H <sub>2</sub> :NO <sub>7</sub>	59.83 20.00	7.14 3.67	59.87	7.00 3.79	10
$70^d$	a-OCH <sub>3</sub>	COOC <sub>2</sub> H <sub>5</sub>	CH2CH=CH2	18 0 3	128-132(0.01) 145-146(0.000)	-1)	CisHerNO5	64.07	-8.05 - 3.02 -8.06 - 4.15	63.97	- 8.04 - 4.19 - 8.04 - 4.19	0
71	2-OCH <sub>3</sub> -4-CH <sub>3</sub>	H	CHa	3	$142 - 144 \ (0.25)$	В	$C_{14}H_{\gg}NO_{\approx}$	66.37	9 15 5.53	66.27	9.07 5.35	0
73°	0-OCH3	H	CHE n-C4Ha	3 5	154-156 (0.3) 144 (0.003)	- В - А	C141128NO4 C18H2.NO5	62,45 69,86	- 8.61 - 5.20 -10.10 - 4.50	62.59 69.71	8.67 5.40 10.08 1.80	10
74	o-OCH3	11	$CH_2CH==CH_2$	6	156-158 (0.002	) <u>C</u>	$C_{18}H_{29}NO_3$	70 32	9.51 4.56	70.31	9.47 4.65	10
$\frac{75}{76}$	0-OCH3 0-OCH3	H H	n-С4На П	6 6	167 - 168 (0.3) 166 - 168 (0.2)	C A	C15H35NO5 C15H25NO5	$70.55 \\ 67.38$	-10.28 - 4.33 -9.43 - 5.24	$10.44 \\ 67.30$	$   \begin{array}{r}     10.22 & 4.07 \\     9.57 & 4.77   \end{array} $	20 20
⊴ Se ∉ Prep	e footnote <i>a</i> , ared by react	Table I. ion of ethy	<sup>6</sup> Ciba Ltd., S l chloroformate	outh . with (	African Pater <b>38</b> . <sup>e</sup> n <sup>20</sup> D 1.4	nt 59/35) 990,	31 (1959).	· Acid	maleate, r	np 69.5-	70° (EtOI	F-Et₂O).
					Т.\н	BLE IV						
							XN	HCH <sub>2</sub> CH	$HCH_2OCH_2OCH_2OCH_2OCH_2OCH_2OCH_2OCH_2$	$CH = CH_{2}$		
	Ŋ	S-Substite	ted 3-Allyoxy	с-2-нт	DROXYPROPYL	AMINES		o di	н			
							<b>NOCH</b>	Г. Г.				
							0.011	∽ €ulad	C		a como	1 an
No.	Х		Bp, ℃	(mm)	Method	Form	ula (*	H H	N	(' ]	I N	tivity <sup>a</sup>
77	$-O(CH_2)_{3}$ -		186 - 187 (0	.9)	В	$C_{16}H_{23}$	$NO_1 = 65.0$	16 8.5	3 6	5.04 - 8.	53	0
78	$-OCH_2C(O$	$CH_3)H-$	156 (5.4 $ imes$	$10^{-3}$	) B	$C_{16}H_{23}$	$NO_4 = 65.0$	16 - 8.5	3 4.74 6	4.79 - 8.	50 - 4.40	0
79	-OCH <sub>2</sub> C(C	)H)HCH <sub>2</sub>	$210 (4 \times 1)$	$()^{-3})$	В	$C_{16}H_{23}$	$_{ m sNO_5}$ 61. $_{ m NO_5}$	71 8 09	+4.50-6	2.12 8.	04 4.27	()
80	-(CH <sub>2</sub> ) <sub>3</sub>		168-170(2)	)	B	$C_{16}H_{23}$	$\mathbf{NO}_3 = 68.1$ $\mathbf{NO}_3 = 60.1$	18 9.0: to 5 81	2 5.01 6 0 1 = 1 <i>e</i>	8.76 8. 0.99 =	97 4.99	10
82	-NHCH <sub>2</sub> CH	2	174(0.5) 174-176(0	$25 \times$	$10^{-2}$ ) B	$C_{15}H_{2}$	$(N_{2}O_{3}) = 00.1$	26 - 8.6	$0^{-4}.71 = 0$ 3 - 9.99 - 6	$\frac{0.52}{4.15}$ - 7.	$\frac{59}{77}$ $\frac{4.56}{9}$	0
" Se	e footnote $a$ , $\mathbb{Z}$	fable I.			- , .	< 10.42			, ,,,,,,,,,,	1.19		
	,				$T_{\Delta}$	ble V						
						/	$\searrow$					_
	N-(3-Allylon	y-2-hydro	)XYPROPYL)NAP	HLHAT	OXYETHYLAMI	NES		$CH_2CH_2$	NHCH <sub>2</sub> CH(	OHCH <sub>2</sub> O	$CH_2CH = CH$	$\mathbf{I}_{2}$
		Br	o (mm)				-Caled, G			Found, S		Ac-
No.	Substitution	or 100 ti	mp, °C M	ethod T	Formula	('	H =	N	- C	H	N	tivity"
86	a	182-18	84(0.000) 88(0.01)	р В	$C_{18}H_{23}NO_3$	$\frac{11.73}{71.73}$	7.09 - 80	4.00	71.00		0.04 1.69	25
85	$^{P}$ 4-OCH <sub>3</sub> - $\alpha$	75.5-	$77^{b}$	B	$C_{19}H_{23}NO_3$ $C_{19}H_{25}NO_3$	68.86	7.60	4.23	68.91	7.70	4.02	0
ª See	e footnote <i>a</i> , I	l'able I <sup>6</sup>	Needles from 1	oetrole	um ether.							
					Тля	BLE VI						
							∧ .00H	CH-NH	$CH_{CH} = 0$	H(CH.)	OR	
	N-Alk	OXYALKEN	YL-2-(2-метном	YPHE	(OXY)ETHYLA	MINES	<b>~</b> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	.2011.21.11			010	
						L.	► OCH	3				
								Ca	ded, 92	2 · · · · F	ound, G -	· Ac-
No.	<i>n</i>	R	Bp, °C (mm)		Other data	Method	Formula O U NO	C	H N	( '	II N	tivity"
86 87	1 <i>n</i> -C4H9 1 CH <sub>2</sub> CH	=CHCH <sub>3</sub>	138 - 140 (0.000 144 - 145 (0.006	1)		.A .A	C17H27NO3 C17H25NO5	$\frac{69.59}{70.07}$	9.28 4.77	69.76 69.96	$-9.12 - 4.81 \\ -8.59 - 5.04$	10 20
88	2 CH₃				veid maleate,	А	$C_{19}H_{97}NO\tau^5$	59.83	7.14 3.67	60.08	7 03 3 56	10
89	2 n-C3H7		140-142 (0.004	) 1	mp 89.5-90° 20p 1.5108	Δ	$\mathrm{C}_{17}\mathrm{H}_{27}\mathrm{NO}_8$	69.59	9.28	69.58	9.28 Not detd	10
90	$2 = n - C_4 H_B$		137 (0.0006)		Mr. 1 1000	Α	C15H29NO5	70.32	9.51 4.56	70.46	9.35 1.13	10
91 4 Sou	2 n-C₅Hn e footnote a ″	Pable I - <sup>5</sup>		o) H d male	-∾D I.4986 vate	А	C19 <b>H31NO</b> 5	70.99	9.72 - 4.36	71.20	9.38 1.43	141
					Тав	le VII						
								<b>~</b> 00	CHaCHaNHO	CHCH_CF	POB 1°08	
	N_(?)	ATROXY-1	VINVI ODODVI 14	0_(9_10	20 LIAN VILLEN (A	XX) PROVINCI	AMINES	$\gamma$			-2 -2 -2	
	-(·)-/	AIAOA1-1-	, is ill rort il)	1 №-كار-،	STRUATTHENU	5.1.)ETH11	ATTAL SES	× <sup>4</sup> 00	CH <sub>a</sub>	CH=CH	2	

							'aled, S		ŀ	ound, 5		Ae-
No	$\mathbf{R}$	Bp, °C (mm)	11 <sup>20</sup> D	Method	Formula	0	11	N	C	H	N	tivity"
92	$CH_3$	163(0.7)	1.5174	А	$\mathrm{C}_{15}\mathrm{H}_{23}\mathrm{NO}_3$	67.89	8.74	5.28	67.85	8.51	5.34	10
93	$C_2H_5$	110(0.03)	15126	А	$\mathrm{C}_{16}\mathrm{H}_{25}\mathrm{NO}_3$	68.78	-9.02	$5 \ 01$	68.48	8.91	4.77	10
94	n-C <sub>3</sub> H <sub>7</sub>	134-138(0.003)	1.5122	A	$\mathrm{C}_{17}\mathrm{H}_{27}\mathrm{NO}_3$	69.59	-9.28	4.77	69.84	9.42	4.73	10
95	n-C <sub>4</sub> H <sub>9</sub>	136(0.0001)	1.5049	$\mathbf{A}$	$\mathrm{C}_{18}\mathrm{H}_{29}\mathrm{NO}_3$	70.32	9.51	4.56	-70.52	9.33	4.40	10
	1. A 7P	1.1.1										

" See footnote a, Table I.

TABLE VIII

#### N-(4-Alkoxybut-2-ynyl)-2-(2-methoxyphenoxy) ethylamines

						$\checkmark$	<b>`</b> OCH	3				
						<u> </u>	Calcd, %	;	~F	ound, 🕅	~	Ac-
No.	$\mathbf{R}$	Bp, °C (mm)	$n^{20}$ D	Method	Formula	С	н	Ν	С	$\mathbf{H}$	Ν	tivity <sup>a</sup>
96	$CH_3$	128 - 132(0.002)	1.5351	Α	$\mathrm{C}_{14}\mathrm{H}_{19}\mathrm{NO}_{3}$	67.44	7.68	5.62	67.35	7.62	5.47	0
97	$C_2H_5$	138 - 142(0.002)		А	$\mathrm{C}_{13}\mathrm{H}_{21}\mathrm{NO}_3$	68.41	8.04	5.32	68.16	7.90	4.76	10
98	n-C <sub>3</sub> H <sub>7</sub>	154(0.005)	1.5260	A	$\mathrm{C}_{16}\mathrm{H}_{23}\mathrm{NO}_3$	69.28	8.36	5.05	69.25	8.35	4.95	0
e	1	1.1. T										

<sup>*a*</sup> See footnote a, Table I.

#### TABLE IX

N-Substituted 2-(2-Methoxyphenoxy)ethylamines

					C	alcd, %		Fe	ound, %	,	Ac-
No.	R	Bp, °C (mm)	Method	Formula	С	H	N	С	Н	Ν	tivity 🛚
99	$(CH_2)_2CHOHCH_2OCH_2CH=CH_2$	164-168(0.3)	Α	$\mathrm{C_{16}H_{25}NO_{4}}$	65.06	8.53	4.74	65.13	8.56	5.08	25
	$\operatorname{CH}_2 \longrightarrow \operatorname{CH}_2$ $\downarrow \qquad \downarrow$ $O \qquad O$	160(0.2)	A	$\mathrm{C}_{18}\mathrm{H}_{29}\mathrm{NO}_5$	63.69	8.61	4.13	63.63	8.69	4.39	10
100 ª See	CH2CCH2OC4H3-n e footnote a, Table I.										

# Table X

OCH<sub>2</sub>CH<sub>2</sub>NH(CH<sub>2</sub>)<sub>n</sub>CN  $N{\textbf{-}}\omega{\textbf{-}}Cyanoalkyl{\textbf{-}}2{\textbf{-}}(2{\textbf{-}}methoxyphenoxy){\textbf{ethylamines}}$ OCH<sub>3</sub> Acid maleate -Caled, % Found, % Ν Bp, °C (mm) mp, °C (solvent)  $\mathbf{C}$ С Ν Activity<sup>a</sup> No. n Method Formula Η Η 101 $\mathbf{2}$ 119-121 (MeOH)  $\mathbf{C}$  $C_{16}H_{20}N_2O_6{}^b$ 57.135.998.3357.20 - 5.978.4310 . . .  $\mathbf{C}$  ${\rm C_{17}H_{22}N_2O_6}^b$ 501023 6.338.0058.25 - 6.277.91109.5-111 (MeOH) 58.27103 174(0.7) $\mathbf{C}$  $\mathrm{C_{18}H_{24}N_2O_6}^b$ 90 4 97-99.5 (MeOH-Et<sub>2</sub>O) 59.33 6.64 7.6959.65 6.65 7.50104 5 176-180 (0.5) в  $C_{15}H_{22}NO_2$ 68.67 8.45 10.6868.76 8.41 10.68120С 60.93 - 7.137.04105 6 185–188 (0.35) 78.5–80 ( $MeOH-Et_2O$ )  $C_{20}H_{28}N_2O_6^{\ b}$  $61.21 \quad 7.19$ 7.1450

<sup>a</sup> See footnote a, Table I. <sup>b</sup> Analysis of acid maleate.

# TABLE XI

	Ν	-ω-Carbethoxyalkyl-2-(2-methox	YPHENOXY	)ethylamines	$\mathbf{i}$	OCH <sub>2</sub> C OCH <sub>3</sub>	H <sub>2</sub> NH(C	$H_2$ ) <sub>n</sub> COO	$C_2H_5$		
No	<i>m</i>	Acid maleste mn. °C (solvent)	Viethod	Formula	(C	Caled, %	N	сI С	Found, 9 H	% N	Ac-
106	<i>n</i> 1	91 5-93 (VeOH-EtcO)	A	CurHanNOs <sup>b</sup>	55 28	6.28	3 79	55 49	6.25	3.67	0
107	$\frac{1}{2}$	94-95.5 (MeOH-Et <sub>2</sub> O, EtOAc)	A	$C_{18}H_{25}NO_8^b$	56.39	6.57	3.65	56.63	6.40	4.13	Ő

<sup>a</sup> See footnote a, Table I. <sup>b</sup> Analysis of acid maleate.

				Т	ABLE XII							
	N-ω-(Ac	CYLOXY	YALKYL)-2-(2-METHOX	YPHENOXY	)ETHYLAMINES	$\bigcirc$	OCH OCH	2 <b>CH2NH</b> (	$(CH_2)_n OC$	COR		
						,C	aled, %		F	ound, %	;	
No.	R	n	Bp, °C (mm)	$\mathbf{Method}$	Formula	С	н	N	С	н	N	Activity <sup>a</sup>
108	CH3	4	140-144(0.002)	Α	$\mathrm{C_{15}H_{23}NO_{4}}$	64.03	8.24	4.98	63.89	8.24	5.49	25
109	$CH_3$	<b>5</b>	150 - 154(0.0003)	Α	$C_{16}H_{25}NO_4$	65.06	8.53	4.74	64.69	8.61	4.48	25
110	$CH_3$	6	158 - 162(0.0006)	Α	$C_{17}H_{27}NO_4$	65.99	8.80	4.53	66.09	8.87	4.83	100
111	$C_2H_5$	5	148 - 152 (0.002)	А	$C_{17}H_{27}NO_4$	65.99	8.80	4.53	66.01	8.76	4.56	25
			N-acetyl, 181–185 $(5.4 \times 10^{-3})$		$C_{19}H_{29}NO_5$	64.93	8.32	3.99	64.76	8.35	3.95	0
112	CH=CHCH <sub>3</sub>	<b>4</b>	140-144(0.6)	Α	$\mathrm{C_{17}H_{25}NO_4}$	66.42	8.20	4.56	66.67	8.22	4.49	0

" See footnote a, Table I.

 $OCH_2CH_2NHCH_2C \equiv CCH_2OR$ 

OCH<sub>2</sub>CH<sub>2</sub>NHR

OCH<sub>3</sub>

IIIN	
TABLE	

 $\mathrm{N-}\omega\text{-}(\mathrm{Substituted}\ Phenyl, maxyl)-2-(2-метнохурнехоху) втиуlamines$ 

تے OCH<sub>2</sub>CH<sub>2</sub>NH(CH<sub>2</sub>)<sub>n</sub> >  $\sim$ 

$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	2	u	Rı	R	Bp. °C (mm)	Derivative mp, °(* (solvent)	Method	Formula	c - Caled C	N H	C.	und, S H	z	Activity <sup>a</sup>
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		न	0-0CH <sub>3</sub>	II	164 - 166 (0.02)	$AM^{d}$ 117–118 (EtOAc)	F	$\mathrm{C}_{\mathrm{B}}\mathrm{H}_{\mathrm{B}}\mathrm{NO}_6{}^b$	66,49 7.	04 3.37	66.69	1.04	11.	45
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		¢ι	0-0CH3	o-00H <sub>3</sub>	$166 \cdot 168 (0.002)$	AM 117 118.5 (EtOH 45.0)	Y.	C <sub>18</sub> 11 <sub>23</sub> NO <sub>3</sub>	71.73 7.1	69 4.65	16.17	サーズ・ト	.49	
$ \begin{array}{ccccc} 0.0011 & $								$C_{22}H_{27}NO_7^h$	63.30 6.	52 3.36	63.22	6-81 2	-96 -	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		:c: -	0-0CH3	0-0CH3		AM 104 · 105.5 (EtOH-Et <sub>2</sub> O)	Υ.	$\mathrm{C}_{23}\mathrm{H}_{29}\mathrm{NO}_7^h$	64.02 6.	77 3.25	64.28	6.86 3	.15	60
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		4	0-0CH3	0-0CH3		AM 86-87 (EtOAc, EtOH-Et <sub>2</sub> O)	E	$C_{24}\Pi_{31}NO_7^h$	64.70 7.	01 3.14	64.72	6.95 3	00	30
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		≎1	0-0CH3	$p$ -OCH $_3$	194(0.01)	AM 128.5-129.5 (E(OAc)	ł.	$\Omega_{22} \Pi_{27} N \Omega_7^h$	63.30 6.	52 3.36	62.88	6.40 3	.47	60
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		÷7	0-0CH3	$p$ -OCH $_{\rm s}$	195(0.008)	AM 109–111 (E $(OAc)$	V	$C_{23}H_{29}NO_7^h$	64.02 6.	77 3.25	64.10	6.56 3	.02	30
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		+	0-0CII3	$p$ -OCII $_{s}$	180-182 (0.006)	AMI 99.5-100.5 (E(OAc, E(OH-E) <sub>2</sub> O)	V.	$C_{20}H_{27}NO_3$	72.92 N.	26 3.86	72.73	8.23 4	25	130
$ \begin{array}{ccccc} 0.001h & p - 0.01h \\ 0.0001h & p - 0.01h \\ 0.001h & 0.000 \\ 0.01h & 0.000 \\ 0.0$								$C_{24}H_{31}NO_7^h$	64.70 7.1	01 3.14	64,58	7.03 2	.65 1	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		÷۰	0-0CH3	p-OCH <sub>3</sub>		AM 91-92 (EtOAc, EtOH [Et <sub>2</sub> O)	¥	$\mathrm{C}_{25}\mathrm{H}_{33}\mathrm{NO}_7^h$	65.34 7.1	24 3.05	65.46	7.24 3	.03	30
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		:•	0-0CH3	$p-0C_2\Pi_z$	196 - 200(0, 002)	AM 114-115 (EtOII-Et <sub>2</sub> O)	~	$\mathrm{C}_{24}\mathrm{H}_{31}\mathrm{NO}_7^h$	64.70 7.0	01 3.14	64.63	7.19 2	261	0
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		÷	0-0CH3	p-OC <sub>2</sub> II <sub>3</sub>		B-HCI 104 (EtOAc)	¥	C <sub>24</sub> H <sub>36</sub> CINO <sub>3'</sub>	66.40 7.	00 3.69	66.01	7.94 3	. <u>5</u> 7	60
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$						AM 101.5 102 (EtOAc)		$C_{25}H_{33}NO_7^h$	65.34 7.3	24 3.05	65.32	7.33 3	.06	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		÷	0-OCII <sub>a</sub>	p-OC <sub>3</sub> II <sub>7-<math>n</math></sub>		B·HCl 104.5-106 (EtOAc)	¥.	C <sub>22</sub> H <sub>32</sub> CINO <sub>3</sub>	67.07 8.	11 3.56	67.20	8.06 3	. š1	60
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		÷	0-0CII <sub>3</sub>	$p ext{-}\mathrm{OC}_4\mathrm{H}_{g ext{-}h}$		AM 124-122 (EtOAc)	Y	$C_{37}H_{37}NO7^{h}$	66.51 7.0	65 2,87	66.68	7 72 2	80	C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		<del></del>	0-0CH3	h-0H	210.00,0006)		V	$\mathrm{C}_{19}\mathrm{H}_{25}\mathrm{NO}_3$	72.35 7.9	00 4.44	72.09	S.09 4	61	()()
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		<b>†</b> -	0-OCH3	p-OCOCH <sub>3</sub>		B-HCl 90.5-91.5 (EtOAc)	¥,	C <sub>21</sub> II <sub>28</sub> CINO <sub>47</sub>	64.03 7.	17 3,56	64.03	7.20 3	02.	120
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		<del>-1</del> .	0-0CH3	<i>p</i> -0C0C(CH <sub>3</sub> ) <sub>k</sub>		AM 144–145 (EtOAc)		$C_{28}H_{37}NO_8^{\prime\prime}$	65.22 7.3	23 2.72	65, 57	7.27 2	X X	06
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		÷	0-0CH <sub>3</sub>	<i>p</i> -CH <sub>2</sub>	IS9~191 (0 3)		V	$\mathrm{C}_{2n}\mathrm{H}_{27}\mathrm{NO}_2$	76.64 8.0	38 4.47	76.82	+ 12 x	53	06
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		<del>~;</del>	0-0CH3	<i>p</i> -CI	198-204(0.3)	AM 108-109 (EtOAc)	¥	$\mathrm{C}_{23}\mathrm{H}_{28}\mathrm{CINO}_6^L$	61.40 6.3	27 3.11	61.38	6.30 3	35	40
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		<del>-+</del>	0-0CII3	p-COCH <sub>3</sub>		B-HCI 110-110.5 (EtOH-Et <sub>2</sub> O)	V	C <sub>21</sub> H <sub>28</sub> CINO <sub>27</sub>	66.74 7.4	17 3.71	(00, 73)	7.64 3	ŝ	50
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		<del>.,</del>	0-0CH <sub>3</sub>	$2,5-(0CH_3)_2$	204,208(0,01)		¥	$C_{21}H_{29}NO_4$	70.17 8.	13 3,90	70.41	7.94 3	. ĩ.	4()
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		÷	0-0CH3	$2,4-(0CH_3)_2$		AM 85–86 (E(OAc Et <sub>2</sub> O)	Ł	C <sub>25</sub> H <sub>38</sub> NO <sub>8</sub>	63, 14 7.	00 2.95	62.91	7.02 3	1.1	0
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		î I	0-0CH <sub>3</sub>	3,4-(0CII <sub>a</sub> ) <sub>2</sub>	Ca. 185 (0, 004)	AM 106–106.5 (BtOH-F(gO)	£	$\mathrm{C}_{33}\mathrm{H}_{29}\mathrm{NO}_{8}{}^{h}$	61.73 6.3	53 3.13	61.91	6.41 3		70
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		÷	0-OCH3	$3,4-(0CH_{3})_{2}$	196 - 198 (0, 002)	B-HCl 201 (BtOH-Ef <sub>2</sub> O)	1:	$C_{21}H_{29}NO_4$	70.17 8.1	13 3,90	70.02	S.09 4	.05	45
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$								C <sub>21</sub> H <sub>30</sub> CINO <sub>1</sub>	63.71 7.0	31 3.54	63.77	7.53	t9	(j)
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		ΩI.	p-OCH <sub>3</sub>	$3,4-(0CH_3)_2$		AM 123-125.5 (MeOH-E( $_{2}$ O)	£	C23H29NO5	61.73 6.2	33 3.13	61.91	6.62 2	$\overline{\mathbf{x}}$	25
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		÷1	0-011	$3,4-(0CH_3)_2$		AM 138-139 (EtOH-Et <sub>2</sub> 0)		$C_{22}\Pi_{27}NO_8^h$	60.96 6.3	28 3.23	61.25	6.57 3	<u>e</u> .	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		÷1	₀-OCH₂C₀H.	3,4-(0)CH <sub>3</sub> ) <sub>2</sub>		AM 114-116 (MeOII-Et <sub>2</sub> O)	ñ	$C_{29}H_{38}NO_8^h$	68.52 6.3	35 2.68	66.11	6.4S 2	.63	0
$\frac{2}{2} \frac{e-\text{Cl}}{e-\text{Cl}} = 3,4(\text{OCH}_3) = 186\cdot190(0,001) = \text{AM} 120.5 \cdot 122 \text{(MeOH-El}_4O) = B = C_{22}H_{36}\text{CINO}, = 58.47 \cdot 5.80 \cdot 3.40 \cdot 5.90 \cdot 2.84 \cdot 20 = 2 \cdot 10 - 38.45 \cdot 5.71 \cdot 2.99 = 0 = 2 \cdot 10 - 38.45 \cdot 5.71 \cdot 2.99 = 0 = 2 \cdot 10 - 38.45 \cdot 5.71 \cdot 2.99 = 0 = 2 \cdot 10 - 38.45 \cdot 5.71 \cdot 2.99 = 0 = 0 = 2 \cdot 10 - 38.45 \cdot 5.71 \cdot 2.99 = 0 = 0 = 2 \cdot 10 - 38.45 \cdot 5.71 \cdot 2.99 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 =$		†1	o-CH3	3,4-(OCH <sub>3</sub> ) <sub>2</sub>	IS4_185/0.0000	AM $108.5$ 110 (MeOII-Et <sub>2</sub> O)	ñ	$O_{23}H_{29}NO_7$	64.02 6.7	7 3.25	63.96	6.53 3	.10	()
$2 - p-\text{Cl} = 3.4-(\text{OCH}_{3})_2 = \text{AM} = 32-134 \text{ (MeOH-EQ)} = B = C_{22}\text{H}_{26}\text{CNO}^2 = 58.47 - 5.80 - 3.10 - 58.45 - 5.71 - 2.99 = 0$		51 21	o-Cl	$3,4-(0CH_3)$ .	186 - 190(0, 001)	AM 120.5 122 (MeOII-Et <sub>2</sub> 0)	Ŀ	$C_{22}H_{26}CINO_7^4$	58.47 5.	S0 3, 10	58, 40	5.90 2	- Z	07 07
		÷1	p-CI	3,4-(OCII <sub>3</sub> ) <sub>2</sub>		$\Lambda M 132-134 (MeOH-Et_{2}O)$	ŝ	$C_{22}H_{26}CINO_{1}^{16}$	58.47 5.	S0 3.10	58.45	5. TT - 5	66	()