Compound	Tracheal chain ED_{50} in mcg.	Rat uterus ED_{50} in mcg
A - 1	2.19	2.45
A - 2	4.36	4.37
Isoproterenol	2.09	2.75
A - 3	8.91	9.33
A - 4	4.00	7.24
Isoproterenol	2.13	1.51

In conclusion, all compounds exhibited beta adrenegic receptor stimulant activity and compound A-1 was as potent as Isoproterenol. All the compounds showed a high degree of selectivity for the $beta_2$ receptor sub-type, however, they also exhibited a small degree of cardiac beta receptor blocking activity at the doses studied.

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Synthesis and Antimicrobial activity of some new Imidazolones having Thymolmoiety

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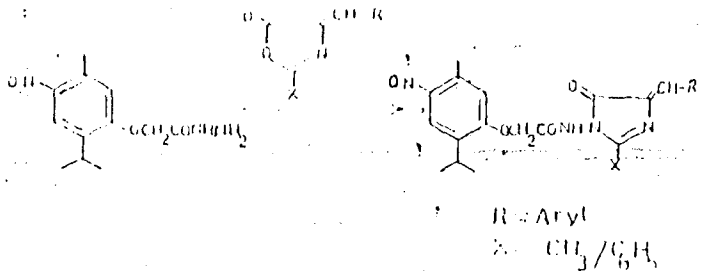
Some new-1-(2'-Isopropyl-4'-nitroso-5' methyl phenoxy-acetamido)- 2-methyl/phenyl-4-arylidene-5-imidazoli-nones were prepared by reaching 4-nitroso hydrazinocarbonyl methyl thymol with preformed azalactone. The structure of the compounds have been confirmed by IR, PMR and elemental analysis. The products were screened for their antimicrobial activity. Some of the products exhibited comparable antimicrobial activity with standard drugs at same concentration.

IMIDAZOLONE[1-4] derivatives have wide range of biological activities as thymol[5-7] derivatives have been found to possess a broad pharmacological spectrum.

Reaction to acetic anhydride, aromatic aledhydes with hippuric acid or acetyl glycine in the presence of sodium acetate has been known to produce azalactone[8] (I). I on refluxing with 4- nitroso hydrazinocarbonyl methyl thymol[9] in 1:1 ratio in the presence of pyridine yielded the title compound (II) (**Table- I**). The latter was synthesised by condensation of 4-nitrosothymol and ethyl-chloro acetate followed by the reaction with hydrazine-hydrate.

The melting points were uncorrected. The IR(KBr) spectra were recorded on a Shimadzu-435

Scheme



infrared spectro-photometer. The PMR spectra were recorded in $CDCl_3$ on Hitachi R-1200 (60 MHz) TMS as internel reference. Chemical Shifts are expressed in o(ppm). Elemental analyses are quite comparable with their structures.

1-(2'-Isopropyl-4'-nitroso-5' -methyl phenoxy acetamido) - 2- phenyl-4-(p-methoxybenzylidene)-5-imidazolinone (II) was prepared from a mixture of (I) 0.01 M) and 2-phenyl-4-p)-methoxy- benzylidene-5-oxolone (0.01 M), pyridine (10 ml) which was refluxed for 6 hrs. The product was isolated and crystallised from ethanol-water, m.p. 124°C, yield 68% IR (KBr) Vcm^{-1}: 1250 (C-O-C str.), 1640 (C=O str. amide), 1620 (N-H def + C-N str.), 1320 (C-N str.), 3170 (N-H str.), 1510 (C-NO str.), 1760, 1630 (C=O + C=N imidazolinone). PMR ($CDCl_3$) δ : 1.2-1.3 (d, 6H, $(CH_3)_2$ CH), 2.27 (6, 3H + 2H, CH_3 + OCH_2) 3-3.5 (m, 1H, CH- $CH_3)_2$, 4-005 (5, 3H, OCH_3), 6-907-7.197 (m, 6H, Ar-H) 8.2 (5, 1H, -C=CH-R), 9.0 (S (br), 1H, NH).

Table I: Physical data of 1-(2'-Isopropyl-4'-nitroso-5'-methyl-phenoxyacetamido)-2 methyl/phenyl-4-arylidene-5-imidazolinones

Compound	R	$X=CH_3$ M.P.°C II a-n	$X=C_6H_5$ M.P.°C IIa'-n'
$II_{a-a'}$	C_6H_5	138	127
$II_{b-b'}$	$3\text{-}NH_2C_6H_4$	135	—
$II_{c-c'}$	$2\text{-}ClC_6H_5$	121	129
$II_{d-d'}$	$4\text{-}ClC_6H_4$	142	135
$II_{e-e'}$	C_4H_3O	148	151
$II_{f-f'}$	$2\text{-}OHC_6H_4$	118	141
$II_{g-g'}$	$4\text{-}OHC_6H_4$	210	138
$II_{h-h'}$	$4\text{-}OCH_3C_6H_4$	131	124
$II_{i-i'}$	$4\text{-}OH\text{-}3\text{-}OCH_3\text{-}C_6H_3$	129	144
$II_{j-j'}$	$4\text{-}N, N(CH_3)_2C_6H_4$	129	—
$II_{k-k'}$	$2\text{-}NO_2C_6H_4$	195	132
$II_{l-l'}$	$3\text{-}NO_2C_6H_4$	185	117
$II_{m-m'}$	$4\text{-}NO_2C_6H_4$	—	126
$II_{n-n'}$	$C_6H_5CH=CH$	140	181

Table II

Antimicrobial activity of 1-(2'-Isopropyl-4'-nitroso-5'-methylphenoxy-acetamido)-2 methyl/phenyl-4-arylidene-5-imidazolinones

No.	R	X	Antibacterial activity Zone of inhibition in mm.				Antifungal activity Zone of inhibition in mm.
			S. citrus	B. mega	E.coli	S.typhosa	A. niger
II_d	4-ClC_6H_4	CH_3	22	19	21	14	14
II_i	4-OH-3-OCH_3-	CH_3	22	12	27	13	13
II	C_6H_3						
$II_{a'}$	C_6H_5	C_6H_5	22	14	21	13	14
$II_{d'}$	4-ClC_6H_4	C_6H_5	22	13	23	11	13
$II_{i'}$	4-OH-3-$OCH_3C_6H_3$	C_6H_5	22	16	22	12	14
$II_{k'}$	2-$NO_2C_6H_4$	C_6H_5	20	16	19	14	13
	Ampicillin (50 μg)		22	17	24	17	—
	Chloramphenicol (50 μg)		24	26	24	25	—
	Norfloxacin (50 μg)		33	23	26	28	—
	Greciofluvin (50 μg)		—	—	—	—	23

Similarly, other imidazolinones were prepared. The physical constant are recorded in Table-1.

All the compounds (II_{a-y}) were screened for their antimicrobial activity against gram positive **Staphylococcus citrus, Bacillus megaterium**, gram negative **Escherichia coli, Salmonella tyohosa** and antifungal activity against **Asperguillus niger** at a concentration of 50 μg using DMF as solvent. The zone of inhibition was measured in mm. and are presented in Table-1. The activity was compare with standard drugs such as ampicillin, chloroamphenical, norfloxacin, griseofulvin at same concentration.

From the test results, it is observed that Imidazolinones of type (II_{a-x}) were found to be less active against various strains of bacteria. However, compounds II_d (22 mm), II_i (92 mm), II_n (22 mm), II_p (22 mm), II_v (22 mm), II_u (22 mm), exhibited comparable activity with the standard drug ampicillin (22 mm) at the same concentration against **Staphylococcus citrus**. In case of antifungal activity, compounds (II_{a-y}) showed less activity again **Aspergillus niger** in comparision to standard drug griseofulvin.

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In Vivo Antisnake Venom Activity of A Furanoid Diterpene from *Aristolochia albida* Duch (Aristolochiaceae)

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The antisnsake venom activity of a furanoid diterpene lactone isolated from the rhizome of *Aristolochia albida* (Family : Aristolochiaceae) was evaluated. The whole animal (*in vivo*) studies were conducted using the mortality of male Swiss albino mice after intra-peritoneal (i.p.) injection of lethal doses (LD_{100}), 8.75 mg/kg and 4.20 mg/kg of venoms of *Naja nigricollis* (spitting cobra) and *Bitis arietans* (puff-adder) respectively. The deterpene was found to significantly reduce the toxic symptoms and protect the mice against the lethal doses of these two snake species commonly found in Northern Nigeria. However, the compound is more effective aganist the venom of N.nigricollis (ED_{50}=45 mg/kg) than that of B.arietans (ED_{50}=74 mg/kg).

ARISTOLOCHIA ALBIDA is a climbing shrub commonly found in the tropical West Africa[1] and is used in several gastro- intestinal disorders[2]. There are reports that the rhizomes are used in skin diseases and against snake bites[3,4]. The isolation of fargesin (neolignan) was reported earlier[5]. Recently, the isolation of phytosterols and glucose has been reported[6]. No pharmacological work on this medicinal plant has been reported so far to validate the claims of the folk-loric uses except for the molluscidal activity of the plant.[7] Ethnopharmacological reports from northern Nigeria about the use of the rhizomes of this plant against snake bites[8] have prompted us to investigate the plant phytochemically and pharmacologically. This communication reports the antisnake venom activity of a diterpene isolated from **A.albida.**

The plant was collected in mid-July and authenticated by the Ahmadu Bello University herbarium, Zaria. The air dried, powder of the rhizomes was defatted with petroleum ether (b.p.60- 80°)and then extracted with methanol in a Soxhelt apparatus. The column chromatography (silica gel) of the methanolic extract furnished the diterpene which upon crystallisation from chloroform/methanol gave fine colorless needlesefine colourless needles, m.p. 182°.

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