

exts from seed meals may be expected to exhibit nonspecific absorption in the uv, it was considered likely that a correction would be necessary. Minima on either side of the λ_{\max} 283 peak occurred near 255 and 305 nm. To provide the desired correction, absorbances at 255 and 305 nm were averaged and subtracted from the absorbance at the maximum to give a net value. From our measurements a net absorbance of 1.000 was equiv to 65 $\mu\text{g}/\text{ml}$. Confidence in the uv absorption as a rapid means of quantitation was gained by comparison of the value (6.7%) obtained for *M. holtonii* with that calcd for *M. holtonii* when detd on the ion-exchange analyzer (6.2%).

Dopa was isolated from *M. deeringiana* by the patented process.⁴ The dopa used for reference and calibration measurements

was from Mann Research Laboratories. Uv measurements were made with a Beckman Model DK-2a recording spectrophotometer.

The names of the 135 families, 447 genera, and 724 species examined in the present work are available from the authors on request.

Acknowledgments.—We thank Mrs. Gertrude Rose for technical assistance and Mr. J. F. Cavins for estimation measurements of dopa with the amino acid analyzer.

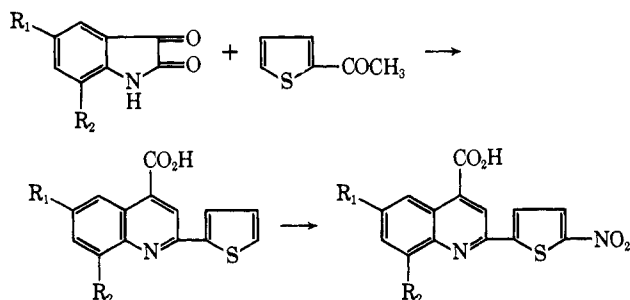
New Compounds

2-(5-Nitro-2-thienyl)cinchoninic Acids

I. LALEZARI,* F. GHABGHARAN, AND R. MAGHSOUDI

Department of Chemistry, Faculty of Pharmacy, University of Tehran, Tehran, Iran

The antibacterial activities of 2-(5-nitro-2-furyl)cinchoninic acid and derivatives have been reported.¹ In a search for more potent antibacterial compounds, we have been preparing a series of their S analogs, 2-(5-nitro-2-thienyl)cinchoninic acids.



Preliminary *in vitro* tests of the compounds prepared, against *Pseudomonas aeruginosa*, *Proteus vulgaris*, *Salmonella typhosa*, and *Staphylococcus album* did not show significant activity.

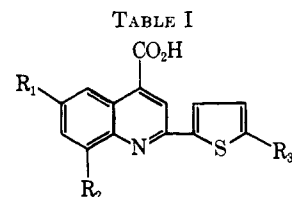
Experimental Section²

2-(2-Thienyl)cinchoninic Acids.—A mixture of 0.02-mole quantities of an appropriate isatin and 2-acetylthiophene in 15 ml of aq 20% KOH and 15 ml of EtOH was heated under reflux for 12 hr. The reaction mixt was cooled and acidified with dil HCl and the resulting yellow ppt was removed by filtration and crystd from AcOH (See Table I).

2-(5-Nitro-2-thienyl)cinchoninic Acids.—To a cold soln of 0.01 mole of 2-(2-thienyl)cinchoninic acid in 15 ml of concd H_2SO_4 , 3 ml of a mixt of concd H_2SO_4 and concd HNO_3 (1:1) was added with vigorous stirring. After 1 hr, 200 g of crushed ice was added to the reaction mixt and the resulting ppt was filtered and crystd from AcOH. The positions of the NO_2 groups were confirmed by nmr spectroscopy (DMSO). (See Table I.)

(1) Homer A. Burch, *J. Med. Chem.*, **12**, 535 (1969).

(2) Melting points were taken on a Kofler hot stage microscope and were uncorrected. The ir spectra were determined with a Leitz Model III spectrograph. Nmr spectra were obtained on a Varian A60A instrument.



No.	R ₁	R ₂	R ₃	Yield, %	Mp, °C dec	Formula ^a
1	H	H	H	80	210 ^b	C ₁₄ H ₉ NO ₂ S
2	H	H	NO ₂	63	280	C ₁₄ H ₉ N ₂ O ₄ S
3	F	H	H	79	250	C ₁₄ H ₈ FN ₂ O ₂ S
4	F	H	NO ₂	84	299	C ₁₄ H ₇ FN ₂ O ₄ S
5	Cl	H	H	73	261	C ₁₄ H ₈ ClN ₂ O ₂ S
6	Cl	H	NO ₂	85	293	C ₁₄ H ₇ ClN ₂ O ₄ S
7	Br	H	H	95	250	C ₁₄ H ₈ BrN ₂ O ₂ S
8	Br	H	NO ₂	74	262	C ₁₄ H ₇ BrN ₂ O ₄ S
9	CH ₃	H	H	90	222	C ₁₅ H ₁₁ N ₂ O ₂ S
10	CH ₃	H	NO ₂	78	308	C ₁₅ H ₁₀ N ₂ O ₄ S
11	H	CH ₃	H	82	242	C ₁₅ H ₁₁ N ₂ O ₂ S
12	H	CH ₃	NO ₂	91	282	C ₁₅ H ₁₀ N ₂ O ₄ S

^a All compds were analyzed for C, H, and the anal. results were satisfactory. All compds were subjected to nmr and ir spectroscopy. The spectroscopic data were as expected. ^b Lit. [P. Schaefer, K. S. Kulkarni, R. Costin, J. Higgins, and L. M. Honig, *J. Heterocycl. Chem.*, **7**, 607 (1970)] gives mp 209–211°.

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Analogues of Albizziin

DALE R. SARGENT AND CHARLES G. SKINNER*

Department of Chemistry, North Texas State University,
Denton, Texas 76203

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The experimental and clinical use of asparaginase as antitumor agent¹ has led to a renewed interest in the synthesis of analogs of asparagine. Albizziin, L-2-amino-3-ureidopropionic acid,² contains an NH group

(1) J. D. Broome, *Trans. N. Y. Acad. Sci.*, **30**, 690 (1968).

(2) A. Kjaer, P. O. Larsen, and R. Gmelin, *Experientia*, **15**, 253 (1959); *Chem. Abstr.*, **54**, 17263f (1960).