

Cactaceae Alkaloids VIII. N-Methyl-4-Methoxyphenethylamine from *Lepidocoryphantha runyonii* (Br. and R.) Backbg.

Lepidocoryphantha runyonii (Br. and R.) Backbg. (synonym: *Coryphantha runyonii* Br. and R.) and the only other species of this genus, *L. macromeris* (Eng.) Backbg. (T.) are the only cacti known to contain the alkaloid macromerine^{1,2}.

In a recent investigation³, with the object to discover potential precursors of macromerine, we showed the presence in *L. runyonii* also of tyramine, hordenine and N-methyl-3,4-dimethoxyphenethylamine together with some minor unknown components. We have now identified one of these unknown compounds as N-methyl-4-methoxyphenethylamine, a compound previously not known to occur in nature. Its identity was established as follows.

The alkaloids were extracted from fresh *L. runyonii* and purified³, care being taken not to lose any volatile amines. The alkaloid fraction was analyzed by GLC using SE-30 and XE-60 columns³ and also by gas chromatography – mass spectrometry (LKB 9000 instrument)³. Gas chromatogram of alkaloid fraction analyzed from *L. runyonii*: 5% SE-30 on Gas Chrom P; 120 °C isothermal for 10 min followed by temperature programming, 4 °/min. The mass spectrum of the compound showed a mol. wt. (M⁺) of 165 (1%), a base peak at m/e 44 (100%), and major peaks at m/e 121 (3%) and 122 (31%). This suggested an N-methylated methoxyphenethylamine such as e.g. N-methyl-4-methoxyphenethylamine which was accordingly synthesized⁴ and found to be identical (mass spectrum, GLC) with the compound present in *L. runyonii*.

This is apparently the first encounter in nature of a simple monomethoxyphenethylamine. However, monomethoxysubstituted phenylpropane derivatives are

known, e.g. anethole and O-methyltyrosine, the latter a constituent of the antibiotic puromycin⁵. Recently, we have shown the occurrence³ in cacti of 3,4-dimethoxyphenethylamine (in *Lophophora williamsii* and *Trichocereus* sp.³) and its N-monomethyl (in *Echinocereus merkeri*⁶ and *L. runyonii*³) and N,N-dimethyl derivatives (in *E. merkeri*⁶).

Zusammenfassung. N-Methyl-4-methoxyphenethylamin wird zum ersten Mal in der Natur vorkommend, in der Kaktee *Lepidocoryphantha runyonii* nachgewiesen.

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Association of Viral Ribonucleoprotein with Polysomes

The interaction of cellular ribonucleoprotein with ribosomes has recently been described¹⁻³. The present paper reports the formation of polysomal complexes with parental viral ribonucleoprotein (RNP) in Sendai virus infected Ehrlich ascites tumor cells. The synthesis of virus-specific RNA and viral structural proteins with the formation of infectious RNP was described in this system⁴.

Materials and methods. Ehrlich tumor cells pretreated with actinomycin D (2 µg/ml) for 1 h were infected ³²P or (³H) leucine labelled Sendai virus at the multiplicity of about 100 EID₅₀ per cell. 1 h after infection the cells were exposed to (³H) leucine (2 µC/ml) for 10 min, then quickly chilled, washed with RSB, resuspended in 2 ml of the same and disrupted in Dounce homogenizer. 2 ml of the supernatant was layered on to 17–40% sucrose density gradient prepared in the same buffer and was centrifuged at 25,000 rpm for 3 h at +2 °C. Preformed CsCl density gradients^{6,7} (5 ml) were centrifuged at 36,000 rpm for 15 h. Radioactivity in fractions precipitated with trichloroacetic acid was measured in a Packard liquid scintillation spectrometer.

Results and discussion. Figure 1a shows the sedimentation pattern of ³²P and ³H input viral radioactivity 1 h after cell infection with ³²P and (³H) leucine labelled virus. It can be seen that both viral labels are coincident and recovered in the polysome region in nearly the same

position as RNP of Sendai virus obtained by the treatment of ³²P-labelled virus with 0.5% sodium deoxycholate (Figure 1b), but the profiles of input viral radioactivity in homogenates are somewhat more heterogeneous as compared with viral RNP. Thus, Sendai virus RNP appears to enter the cells and to be slightly changed for the first hour of incubation.

To determine whether the viral label is associated with polysomes, homogenates from the cells infected with ³²P-virus and exposed in 1 h to ³H-leucine (2 µC/ml) were centrifuged, the fractions containing polysomes (from 4 to 9) were pooled, divided into 2 equal parts, 1 of them being treated before resedimentation with EDTA (0.01 M) and the other used as a control. Figures 1c and

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