

Attention is attracted by the high content of free essential amino acids (3.00%) and of bound amino acids (21.11%) in Caucasian willowweed, which is used by the inhabitants of the Northern Caucasus as an additive to tea. There is a fairly high level of free essential amino acids (2.99%) and of bound nonessential amino acids (12.36%) in fireweed, which is also used in folk medicine [2]. The lowest level of essential amino acids (free - 2.65%; bound - 8.13%) is present in Oenothera mollissima, a decorative plant cultivated at the Reference Base of the V. L. Komarov Botanical Institute.

LITERATURE CITED

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NUCLEOSIDES FROM Theonella SPONGE

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Three nucleosides have been isolated, after column chromatography, from alcoholic chloroform extracts of a sponge Theonella sp. collected during a 1987 expedition on the Scientific Research Ship Akademik Oparin off the western coast of Australia from a depth of 80 m. The least polar of them (0.01% on the dry weight of the animals) was shown by a comparison of physical constants and mass, PMR and ^{13}C NMR spectra to be identical with an authentic sample of thymidine. The second compound obtained (0.01%) was identified as 2'-deoxyuridine by comparison with literature characteristics [1].

The third nucleoside (0.006%, mp 216-218°C (from ethanol-water), $[\alpha]_{578}^{20} -16^\circ$ (c 0.15; pyridine)) had in its mass spectrum the peak of the molecular ion at m/z 252 and an intense signal at m/z 117, corresponding to the detachment of this fragment from the $\text{M}^+ + \text{H}$ ion. The diacetate of the nucleoside gave the following signals in the ^{13}C NMR spectrum (62.9 MHz, CDCl_3 , δ , TMS, ppm): 20.7; 20.8; 169.9; 170.1 ($2\text{CH}_3\text{COO}$); 82.8 (C-1'); 38.0 (C-2'); 74.4 (C-3'); 84.8 (C-4'); 63.6 (C-5'). These facts permitted the assumption that the compound isolated was a 2'-deoxyribonucleoside. At the same time, the chemical shifts of the carbon atoms of the nitrogen base at 120.3 (C-5), 138.1 (C-8), 145.2 (C-2), 148.6 (C-4), 158.6 ppm (C-6) coincided with the corresponding signals of inosine. On this basis, taking into account the results of UV spectroscopy ($\lambda_{\text{max}} = 249 \text{ nm}$, 12,200) and a comparison of the PMR spectra of the diacetate of the nucleoside obtained and of standard 2'-deoxyinosine diacetate, it was established that the compound isolated was 2'-deoxyinosine.

Thymidine and 2'-deoxyuridine have been detected previously in marine organisms - in particular, the starfish Acathaster Placi [1] and embryos of the sea hare Aplysi kurodai [2]. So far as we are aware, deoxyinosine has not been found previously in marine materials.

LITERATURE CITED

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