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Chemistry of endophytic microorganisms from seaweeds

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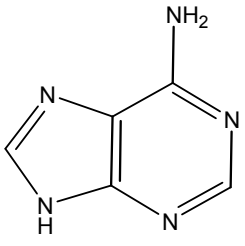
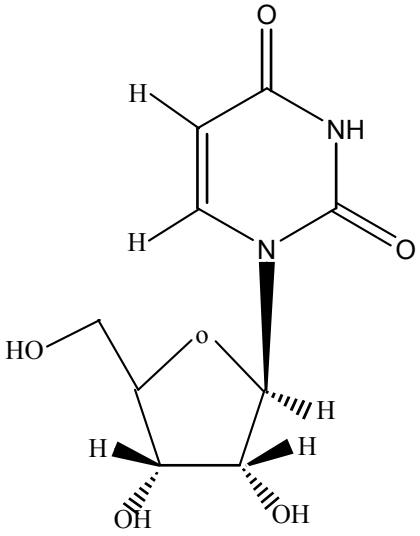
Endophytes are fungi or bacteria, which for all or part of their life cycle, invade the tissues of living plants and cause unapparent and asymptomatic infections entirely within plant tissues, but causes no symptoms of the disease. The same organism may also be described as a saprobe or pathogen at other times. They are increasingly being identified as a group of organisms capable of providing a source of secondary metabolites for use in biotechnology and agriculture. Some of these compounds may be medicinally interesting, especially if they possess anticancer, antifungal, antibacterial, antimalarial and a variety of other biological activities.

In order to acquire endophytes, we selected marine algae (seaweeds) of interest and 8 endophytic fungal strains were isolated. Fungal species obtained from *Sargassum wightii* Greville (Brown algae) were cultured in large scale to obtain fungal extracts. The extract (3.6g) from the fungal species obtained from *Sargassum wightii* Greville was injected to a high performance liquid chromatography unit coupled to mass spectrometer (HPLC-Ms), and a number of peaks with molecular masses of m/z 135, 136, 220, 226, 228, 244, and 260 due to different compounds was observed. The above EtOAc

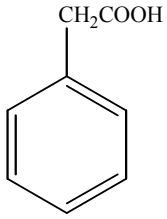
extract (1.7g) was subjected to normal column chromatography using increasing amount of MeOH in dichloromethane as the solvent gave a number of fractions. Further purification of above fractions by repeated Reverse Phase column chromatography on RP 18 gave three compounds in small quantities. The compound with molecular mass 135 was confirmed as adenine by comparison of its' NMR and MS data with reference spectra. The second compound with the molecular weight 244 was identified as uridine and the third compound with molecular weight 136 was characterizes as phenylaceticacid in the same way.



Adenine



uridine



phenyl acetic acid

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