

# **L-5-Hydroxytryptophan: Antioxidant and Anti-Apoptotic Principle of the Intertidal Sponge *Hymeniacidon heliophila***

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The intertidal sponge *Hymeniacidon heliophila* which survives under intense sunlight contains the antioxidant amino acid L-5-hydroxytryptophan (L-5-HTP) as major constituent. The content of L-5-HTP was determined as  $(0.45 \pm 0.23)\%$  of the dry weight by quantitative NMR-spectroscopical analysis with an internal standard. Other known antioxidants such as flavonoids, carotenoids or tocopherol derivatives were absent. Both the oxidation potential and the concentration of L-5-HTP in *H. heliophila* correspond to the values observed for flavonoids being major antioxidants in plants. It was shown that L-5-HTP suppresses UV-induced apoptosis in human monocytes at the same concentrations as it occurs in the sponge tissue.

*Key words:* Antioxidant, Apoptosis, Marine sponge