

Broad-spectrum sun-protective action of Porphyra-334 derived from *Porphyra vietnamensis*

Saurabh Bhatia, K. Sharma, Ajay G. Namdeo, B. B. Chaugule, M. Kavale, S. Nanda

aDepartment of Pharmacognosy, Poona College of Pharmacy, Bharati Vidyapeeth University

ABSTRACT

There are enormous UV-protective compounds present in the current world market, out of which 98% give protection against UV-B range and the remaining 2% are potent against far UV-A range only. Furthermore, these synthetic compounds have various problems related to photo-stability and cross-stability. There is a vital need of sunscreen agents that will remain stable for prolonged periods and provide broad-spectrum protection against harmful UV range. The Indian Ocean contains large amounts of macro-algae which synthesize varied amount of mycosporine amino acids, "sun-protective compounds" by shikmic acid pathway. In the present study, we have evaluated the sunscreen protection provided by Porphyra-334, a mycosporine amino acid isolated from Indian sp. of *Porphyra*. Furthermore, the isolated compound was detected by high performance thin layer chromatography (HPTLC) fingerprinting, high performance liquid chromatography (HPLC) and ultraviolet (UV), whereas nuclear magnetic resonance (NMR) spectroscopy and infrared spectrometry were used for its structural characterization. Stability studies were performed under different storage and pH conditions. Ultimately a sunscreen formulation was developed and its potential against marketed Aloe vera gel was evaluated by in vitro sunscreen protection method. It was observed that sunscreen potential of Porphyra-334 was 5.11-fold greater than that of the marketed Aloe vera gel preparation.

KEYWORDS

Porphyra . Porphyra-334 . sun protection factor . ultraviolet

REFERENCES