

Porphyritic Derivatives Influence on HS27 and HaCaT Cell Lines

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Abstract. *The porphyrin derivatives had a great development in terms of extending their applicability from initially known biological pigments to modern photodynamic or sonodynamic therapies in cancer. A first impact of these derivatives is on the skin, where minimal cytotoxic potential on normal cells should be considered. The paper presents studies on the influence of porphyrin derivatives of natural origin on HS27 and HaCaT cell lines at the level of metabolic and cytotoxic status, but also under the conditions of UV radiation. Cytotoxicity limits for Dermo-CC6 / 7b derivatives of fibroblasts and keratinocytes were determined and effects of reduction of inflammation and oxidative stress in UV-A and UV-B irradiation were revealed.*

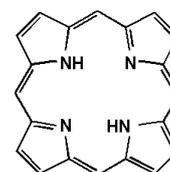
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Introduction

Porphyrin, a class of water-soluble, nitrogenous biological pigments (biochromes), derivatives of which include the (porphyrins combined with metals and protein). One of the hemoproteins is the green, photosynthetic chlorophylls of higher plants.

Due to the green colour of chlorophyll, it has many uses as dyes and pigments. It is used in colouring soaps, oils, waxes and confectionary. Chlorophyll's most important use in nature, is however, in photosynthesis. It is capable of channelling the energy of sunlight into chemical energy through photosynthesis. The chemical energy stored by photosynthesis in carbohydrates drives biochemical reactions in nearly all living organisms (1).

More recent studies show that chlorophyll protects against various chemical carcinogens. There is little known about the bioavailability of chlorophyll and how it is metabolized. What is known is that it is effective in aiding in cancer treatment and it has potent antioxidant properties. Scientific literature sustain also the use in photodynamic therapy of chlorophyll-derived photosensitizers (2).



Porphyrin core