

The presence and toxicity of phenol derivatives - their effect on human erythrocytes.

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The occurrence of phenol and its derivatives in the environment is mainly caused by human activity. However, some phenol derivatives are also produced in natural processes. These compounds accumulate in living organisms disturbing their proper function. Phenols are considered to be very harmful ecotoxins. They possess carcinogenic, cytotoxic and teratogenic properties. Phenol and its derivatives change enzyme activity and the cell metabolism. In particular, they inhibit oxidative phosphorylation process (pentachlorophenol), stimulate glycolysis (dinitrophenols; Nikonorow, 1979), influence activity of antioxidant enzymes . glutathione peroxidase, superoxide dismutase, catalase (hydrochinon; Nimmagudda & Snyder, 1995; chlorophenols; Bukowska, Chajdys, Duda & Duchnowicz, 2000), change the cell morphology (trichlorophenol; Bukowska, 2004b), oxidize haemoglobin (Bukowska, Reszka & Duda, 1998) and provoke haemolysis of the cell (Duchnowicz, Koter & Duda, 2002). The article is a brief review on the toxicity of phenols to living organisms, particularly to human erythrocytes.