



Short communication

Protoporphyrin IX induces apoptosis in HeLa cells prior to photodynamic treatment

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Abstract:

Photodynamic therapy (PDT) combining treatment with a light-excited compound and laser light induction, *via* cellular ROS generation, kills cancer cells by damaging organelles and impairing metabolic pathways. As the exact mechanisms underlying cancer cell death due to PDT treatment remain controversial, the influence of photosensitizer itself, protoporphyrin IX (PpIX) on cancer cells was investigated. The concentration-dependent viability of HeLa cells was estimated after PpIX-treatment. Microscopic analyses revealed that treated cells exhibited apoptosis-like morphology: blebbing, chromatin condensation, nuclear fragmentation, asymmetry of cellular membrane. These results shed a new light on cancer cell death due to PDT because they showed that PpIX can induce apoptosis without light excitation.

Key words:

photodynamic therapy, HeLa cells, protoporphyrin IX, apoptosis
