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Analysis of the *In Vitro* and *In Vivo* Effects of the Photodynamic Therapy on Prostate Cancer by Using News Photosensitizers, Protoporphyrin IX- Polyamines Derivatives

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Image Case

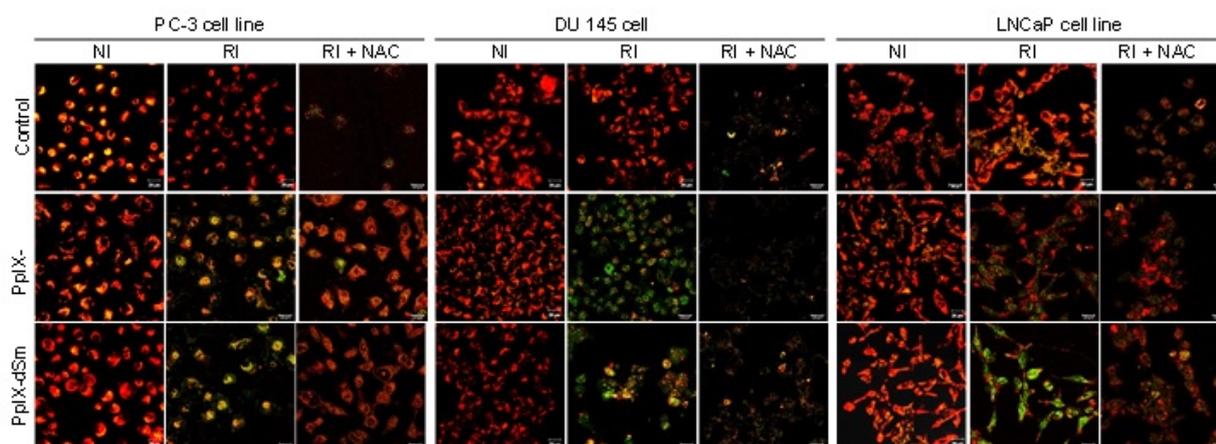


Figure 1 Crucial role at early stages of apoptosis.

To determine potential mechanisms by which PpIX-PA (protoporphyrin IX-polyamines; PpIX is coupled with two molecules of spermidine (PpIX-dSd) or spermine (PpIX-dSm)) inhibited prostate cancer cell viability, we studied its effects on mitochondrial membrane potential because alterations in mitochondrial structure and function have been shown to play a crucial role at early stages of apoptosis (**Figure 1**).

PpIX-PA induced apoptosis via the intrinsic pathway in prostate cancer cell lines PC-3, DU 145 and LNCaP. Cells were

cultured in 10% FCS medium during 24 hrs, treated or not with PpIX-PA (IC50) for 24 hrs, treated or not with NAC (10 mM) and irradiated (RI) or not (NI) by red light (75 J/cm²). After 24 hrs, cells were incubated with medium containing JC-1 (1 µg/ml) for 30 min at 37°C. Red fluorescence represents mitochondria with intact membrane potential whereas green fluorescence represents de-energized mitochondria. Pictures were taken with a confocal microscope (laser Zeiss LSM 510 Meta - X200). The pictures are representative of two separate experiments.