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[\[PDF \(260K\)\]](#) [\[References\]](#)**Influence of prostaglandin A₂ on Bax, Bcl-2 and PCNA expression in MCF-7 cells**Annie JOUBERT¹⁾, Pepita BIANCHI²⁾, Christine MARITZ³⁾ and Fourie JOUBERT⁴⁾

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ABSTRACT

The effects of 20 µg/mL exogenous prostaglandin A₂ (PGA₂) were determined on Bax, Bcl-2 and proliferating cell nuclear antigen (PCNA) expression levels in MCF-7 cells. Flow cytometric analysis indicated a pronounced increase in the S phase and a decrease in the G₁ phase, whereas a significant increase in the DNA content preceding the G₀/G₁ peak was also observed after 48 h of exposure to PGA₂. Confirmation of apoptosis was determined after 12 h, 36 h and 48 h of PGA₂ exposure employing the mitosensor reagent that detects potential changes in the mitochondrial membrane. Twenty-eight percent of PGA₂-exposed cells were in apoptosis when compared to the 7.1% vehicle-treated cells after 48 h. PGA₂ exposure led to statistically significant increase (1.25-fold) over vehicle-treated controls in Bax expression levels. Decreases in Bcl-2 (0.79-fold), as well as PCNA (0.69-fold) expression levels over vehicle-treated controls were observed. The Bax/Bcl-2 ratio for PGA₂-exposed cells was 2.7. The present study suggests that an accumulation in the S phase, a decrease in expression levels of PCNA, as well as an altered ratio in favor of Bax, could lead to the induction of apoptosis in these cells.



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