ONLINE ISSN : 1880-313X
PRINT ISSN : 0388-6107

Biomedical Research
Vol. 26 (2005) , No. 3 June pp.131-134

Bax/Bcl-2 expression levels of 2-methoxyestradiol-exposed esophageal cancer cells

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(Received February 10, 2005)
(Accepted March 25, 2005)

ABSTRACT

2-Methoxyestradiol (2ME), an endogenous metabolite of 17β-estradiol, has been reported to play an active role in the induction of apoptosis in both proliferating endothelial and cancer cells. Since it has been indicated that an increased ratio of pro-apoptotic Bax protein to anti-apoptotic Bcl-2 protein expression can be associated with apoptosis, and since the exact action mechanism of 2ME is still not clearly defined and appears to vary according to cell type, the influence of 1 μM 2ME was investigated on Bax and Bcl-2 expression levels in squamous esophageal carcinoma cells. 2ME exposure led to statistically significant decreases (0.69 over DMSO controls) in Bcl-2 expression levels. In contrast, no statistically significant effects were observed on Bax expression levels after exposure to 2ME. The Bax/Bcl-2 ratio for 2ME-exposed cells was 1.45, normalised against Bcl-2 levels. Although the exact mechanisms of apoptosis induction in squamous esophageal cancer cells require further invest gation, the present study suggests that this altered ratio in favor of Bax could lead to the induction of apoptosis in these cells.

To cite this article:

Annie JOUBERT, Christine MARITZ and Fourie JOUBERT; "Bax/Bcl-2 expression levels of 2-methoxyestradiol-exposed esophageal cancer cells", *Biomedical Research*, Vol. **26**, pp.131-134 (2005) .

doi:10.2220/biomedres.26.131

JOI JST.JSTAGE/biomedres/26.131