The anti-neoplastic effects of coumarin: an emerging concept

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Abstract The recent article by Liu et al. provided for highly interesting reading. Interestingly, recent data suggests that coumarin may exert significant anti-neoplastic effects in a number of systemic malignancies. Coumarin is also of clinical benefit in mammary malignancies. For instance, it attenuates the extent of extremity lymphedema following breast cancer surgery and radiation therapy. In one recent study, an almost 12.5 % decline in the volume of upper extremity lymphedema was noticed. As a result, quality of life is significantly improved. Similar attenuation of tumor growth has been seen in pulmonary malignancies. It mediates these anti-neoplastic effects by attenuating Bcl-2 expression within the tumor cells. On the other hand, Bax expression within the tumor cells is markedly accentuated. These changes have recently been confirmed in A549 cells.

Keywords Coumarin · Breast cancer · Prostate cancer

To the Editor,

The recent article by Liu et al. provided for highly interesting reading (2012). Coumarin may exert significant anti-neoplastic effects in a number of systemic malignancies.

Coumarin is also of clinical benefit in mammary malignancies. For instance, it attenuates the extent of extremity lymphedema following breast cancer surgery and radiation therapy. In one recent study, an almost 12.5 % decline in the volume of upper extremity lymphedema was noticed (Burgos et al. 1999). As a result, quality of life is significantly improved. Similar attenuation of tumor growth has been seen in pulmonary malignancies. It mediates these anti-neoplastic effects by attenuating Bcl-2 expression within the tumor cells. On the other hand, Bax expression within the tumor cells is markedly accentuated (Musa et al. 2012). These changes have recently been confirmed in A549 cells.

Coumarin is also of clinical benefit in the management of prostatic malignancies. Pulmonary metastases are reduced by almost half following initiation of coumarin therapy. This significant reduction is noticed when coumarin is administered in a daily dose of forty milligrams (von Angerer et al. 1994). Coumarin is also effective in the treatment of renal cell carcinomas especially when used in conjunction with other therapeutic modalities such as cimetidine (Marshall et al. 1989). Complete remission has been reported in some patients.

The above examples clearly illustrate the significant anti-neoplastic effects of coumarin and the need for further studies in this regard.

Conflict of interest None.

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