

Nemorosone and its emerging anti-neoplastic effects

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Dear Editor,

The recent article by Westekemper et al. was highly interesting [1]. Nemorosone may exert a number of anti-neoplastic effects in a number of systemic malignancies.

Nemorosone acts on estrogen receptors α , and thereby attenuates tumor growth in breast malignancies. Nemorosone administration results in attenuated expression of pERK1/2 and pAkt [2]. The resulting effect is decreased intra-tumoral apoptosis in G0/G1 phase blockage.

Nemorosone is also effective in the management of gastro-intestinal malignancies. For instance, it activates the unfolded protein response (UPR) network in pancreatic malignancies and thereby accentuates tumor apoptosis in these cancers [3]. UPR-mediated apoptosis is regulated primarily by DNA damage inducible transcript 3. Simultaneously, the mitochondrial membrane potential is reduced. A simultaneous accentuation of cytochrome c release is seen. Nemorosone also exerts anti-proliferative effects in leukemias by altering hematopoiesis. It mediates these effects in part by modulating Akt/PKB function [4]. The key advantage of nemorosone is that it helps overcome chemo-resistance in leukemias. A simultaneous decline in cyclins A and c-Myb is noticed. Down-regulation of p38 MAPK also accompanies nemorosone administration in leukemia's.

Nemorosone is also effective in inhibiting growth in androgen-dependent prostate malignancies. For instance, 7-epi-nemorosone targets MEK1/2 and thereby induces cytotoxic effects in prostate carcinomas [5]. Nemorosone administration results in a decline in S phase cells and an increase in G0/G1 phase cells. CDK 4/6 is also down-

regulated. Attenuation of PSA levels occurs subsequently, resulting in better tumor growth control. Nemorosone is also effective in the management of intracranial tumors such as neuroblastomas. It mediates these anti-neoplastic effects by down-regulating N-myc levels [6]. An increase in the activity of caspase-3, and simultaneous inhibition of Akt/PKB also contributes to these anti-neoplastic effects.

The above examples clearly illustrate the effectiveness of nemorosone in attenuating tumor growth in a number of systemic malignancies.

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