

## Emerging Anti Carcinogenic Applications of Nimesulide: Therapeutic Benefits Beyond Its Primary Role in Pain Management

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### TO THE EDITOR

I read with great attention the article by Saghaei et al. in a recent issue of your esteemed journal [1]. The article is highly interesting and thought-provoking. Of note, the past few years have seen the emergence of nimesulide as an *in vitro* agent with significant anti-carcinogenic properties, in addition to its primary role as an analgesic.

For example, nimesulide attenuates mammalian target of rapamycin (mTOR) signaling and thereby inhibits tissue growth in colorectal carcinomas [2]. Similarly, reduced proliferation is seen in aromatase inhibitor-insensitive breast cancer cells following administration of the nimesulide analogue JCC76 [3]. Nimesulide also enhances the effects of radiotherapy in lung carcinomas through intensification of caspase-3 and caspase-8 activation [4]. Similarly, nimesulide attenuates tumor growth in pancreatic carcinomas by inhibiting vascular endothelial growth factor (VEGF) [5].

Similar growth inhibitory effects are seen in gastric carcinomas. These effects are mediated by increased secretion of TNF- $\alpha$  secondary to nimesulide administration [6].

Nimesulide also downregulates the aquaporin-3 gene and attenuates the expression of the KSHV gene, resulting

in apoptosis in primary effusion lymphomas [7]. In addition, nimesulide inhibits tumor growth in hepatocellular carcinomas. The apoptotic effect of nimesulide in hepatocellular carcinomas is augmented by the mDRA-6 monoclonal antibody [6].

Nimesulide must be used with care because of the attendant risk of hepatotoxicity [8].

Clearly, nimesulide demonstrates significant anti-neoplastic effects *in vitro*. Additional *in vivo* studies are needed to further elaborate and fully harness the anti-carcinogenic properties of nimesulide.

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