

Lanthanum and Its Rapidly Emerging Role as an Anti-Carcinogenic Agent

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To the Editor: I read with great interest the recent article by Wang et al. [2008]. The authors have clearly demonstrated that lanthanum enhances *in vitro* osteoblast differentiation via pertussis toxin-sensitive G α protein and ERK signaling pathway. Interestingly, lanthanum is rapidly emerging as a major player in the management of multiple other different systemic diseases especially in the field of oncology.

For instance, H2L1, a bis-coumarin complex of lanthanum shows cytotoxic activity against BV-173 (chronic myeloid leukemia) cells [Kostova et al., 2005]. Similarly, when lanthanum complexes with coumarin-3-carboxylic acid it causes growth inhibition in Reh cells while exposure of BGC-823 (gastric cancer) tissue to lanthanum results in growth delay secondary to upregulation of MP12 and downregulation of RHOJ [Shi and Huang, 2005]. In fact, a new lanthanum derivative, KP772 is highly effective against cancer cells, especially multi drug resistant cancer cells [Heffeter et al., 2007]. Interestingly, lanthanum lasers such as the Nd: yttrium-lanthanum-fluoride laser are also highly effective in the management of tumors such as choroidal melanomas [Krause et al., 2003].

Oncologists need to note that drug resistance against lanthanum derivatives may develop easily [Heffeter et al., 2008]. Despite this, lanthanum appears to be a bright and highly promising new development in the field of oncology. Hopefully, the next few years will see an increase in the clinical application of lanthanum for the

management of systemic malignancies as well as an increase in the number of studies involving lanthanum, which will hopefully help us in having a better understanding of its anti-carcinogenic properties.

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