In Vivo effects of subcutaneous Inositol Hexaphosphate (IP6) on tumor growth in a murine bladder cancer model

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Introduction: Inositol Hexaphosphate (IP6) is a naturally occurring carbohydrate found in food sources high in fiber content. We have previously demonstrated the in vitro anti-cancer effects of IP6 against bladder cancer. Based on those results we evaluated the potential of IP6 in an in vivo murine bladder cancer model.

Methods: Sixty female athymic nude mice were randomized to four groups (15/group). Mice received 1 x 10^7 UM-UC-6 bladder cancer cells in a 0.1 cc volume in the right thigh (Day 0). Mice then received the following subcutaneous treatments: Saline, IP6 0.5 mM, IP6 1.0 mM and IP6 2.0 mM on days 1, 3, 5, 7, 9, and 11. All animals were examined three times weekly for the incidence and growth of tumor. Tumor volume is expressed as Mean + Standard Deviation. Statistical significance was determined by ANOVA.

Results: All IP6 treatment groups significantly reduced tumor growth compared to the saline control (ANOVA, P < 0.001) on experimental days 9 through 14. All IP6 groups reduced tumor volume equally compared to control and there was no dose response effect noted.

Conclusions: This represents the first report of the effects of IP6 in a mouse bladder cancer model. We are currently investigating orally administered IP6 in mice in preparation for proposing a Phase II clinical trial to evaluate the safety and clinical utility of this agent.

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Structural and magnetic properties of manganese-zinc ferrite-bioglass and glass ceramic composites for the hyperthermia treatment of bone cancers

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Hyperthermia treatment is a method of the cancer therapy using the high temperature up to 43 oC which healthy cells survive but tumor cells can’t resist. The materials used to raise the temperature are called as “thermoseed” and they are ferrimagnetic, ferromagnetic and superparamagnetic particles potentially. The literature survey made showed that there was no evidence of a study focused on the use of manganese-zinc ferrite-bioglass and glass ceramic composites. By this point of view, the potential scientific work is worth searching due to its originality and possible influence for the future studies.

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