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Title: CLZ-8, a potent small-molecular compound, protects radiation-induced damages both *in vitro and in vivo* 

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## ACCEPTED MANUSCRIPT

#### CLZ-8, a potent small-molecular compound, protects radiation-induced damages

#### both in vitro and in vivo

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#### ABSTRACT

PUMA (*p53* up-regulated mediator of apoptosis) is particularly important in initiating radiationinduced damage and apoptosis. It has been shown that inhibition of PUMA can provide a profound benefit for the long-term survival of the mice, without an increased risk of malignancies after irradiation. It becomes to be a potential target for developing an effective treatment aimed to protect cells from lethal radiation. CLZ-8, a novel small-molecular inhibition targeting PUMA, could have considerable protection against cell apoptosis and DNA damage. The aim of the present study is to evaluate CLZ-8's radioprotective ability to enhance survival rate of mice exposed to gamma radiation, prevent radiation-induced apoptosis, and repair DNA damage in cultured cells. We have determined the best effective dose *in vivo* is 200mg/kg. This dose of CLZ-8 administered at 30 min before radiation can notably enhance mice survival rate. CLZ-8 ameliorates radiation-induced HUVEC cells damage and reduces apoptosis counts compared to vehicle-treated cells. Western blotting analysis indicates that CLZ-8 selectively inhibits overexpressed PUMA induced by Download English Version:

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