



IRL-1620, a tumor selective vasodilator, augments the uptake and efficacy of chemotherapeutic agents in prostate tumor rats.

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IRL-1620, a potent endothelin B receptor agonist, enhanced the efficacy of paclitaxel in a breast tumor model, but its effect in prostate cancer is not known. The present study was conducted to evaluate the effect of IRL-1620 on tumor perfusion, uptake of [(14)C]-doxorubicin in the tumor and efficacy of doxorubicin (DOX), and 5-fluorouracil (5-FU) in a rat prostate tumor model. METHODS: JHU-4 (Mat-Lu) cells inoculated prostate tumor model in Copenhagen rats was used for the study. RESULTS: Administration of IRL-1620 (3 nmol/kg, i.v) significantly increased (102.8%) prostate tumor perfusion and tumor uptake of [(14)C]-doxorubicin (115%) compared to vehicle treated rats. Results of the efficacy study demonstrate that IRL-1620 administration 15 min prior to DOX (5 mg/kg) or 5-FU (50 mg/kg) on every third day for a total of four doses significantly reduced tumor volume compared to vehicle treated rats. CONCLUSIONS: IRL-1620 significantly enhanced the uptake and efficacy of anticancer agents in prostate cancer.