

ANF and β -MHC are significantly suppressed by pretreatment of the cardiomyocytes with Cucurbitacin I. Notably, Cucurbitacin I also impairs connective tissue growth factor (CTGF) and MAPK signaling, pro-hypertrophic factors, as well as TGF- β /Smad signaling, the important contributing factors to fibrosis^[2]. Incubation of the Seax cell line with the Jak/Stat3 inhibitor Cucurbitacin I result in a time- and concentration-dependent decrease of P-Stat3 and Stat3. In freshly isolated Sz cells (n=3), Cucurbitacin I induces a concentration-dependent decrease in Stat3 expression whereas P-Stat3 is undetectable. Finally, incubation of freshly isolated Sz cells (n=4) with 30 μ M Cucurbitacin I for 6 hours induces apoptosis in the large majority (73-91%) of tumor cells^[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

No major side effects are noted throughout the study. It is shown that average tumor volumes at the end of the study are as follows: control, 616 mm³ (\pm 130); CQ, 580 mm³ (\pm 107); Cucurbitacin I, 346mm³ (\pm 79); and combination, 220mm³ (\pm 62). The differences in tumor volume between the Cucurbitacin I and control, combination and control, and combination and Cucurbitacin I arms are significant. Furthermore, combination-treated tumors exhibit a significantly lower average tumor weight at study termination than the control. Moreover, there was no effect on the body weights of mice^[4].

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PROTOCOL

Animal Administration ^[4]

Mice^[4]

BALB/c nude (nu/nu) female mice are used. U251 cells (5×10^6 cells in 50 μ L of serum-free DMEM) are inoculated subcutaneously into the right flank of 5-week-old female mice after acclimatization for a week. Tumor growth is measured daily with calipers. When the tumors reach a mean volume of 90-120 mm³, animals are randomized into groups. In the first experiment, 16 mice are randomly assigned to Cucurbitacin I (1 mg/kg/day in 20% DMSO in PBS) or drug vehicle control (20% DMSO in PBS) and dosed intraperitoneally with 100 μ L of vehicle or drug once daily for 18 days, whereas, in the second, 20 mice are assigned to four groups. Control animals receive 20% DMSO in PBS vehicle, whereas treated animals are injected with Cucurbitacin I (1 mg/kg/day) in 20% DMSO in PBS, CQ (25 mg/kg/day) in 20% DMSO in PBS, and Cucurbitacin I (1 mg/kg/day) plus CQ (25 mg/kg/day) in 20% DMSO in PBS and dosed intraperitoneally with 100 μ L of vehicle or drug once daily for 15 days^[4].

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CUSTOMER VALIDATION

- Cell Cycle. 2019 Nov;18(21):3010-3029.
- Research Square Preprint. 2021 May.

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- [3]. van Kester MS, et al. Cucurbitacin I inhibits Stat3 and induces apoptosis in Sézary cells. *J Invest Dermatol.* 2008 Jul;128(7):1691-5.
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Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA