

4th Global Summit on

HERBALS AND TRADITIONAL MEDICINE

October 03-04, 2018 Osaka, Japan

The anti-inflammatory NHE-06 restores antitumor immunity by targeting NF- κ B/IL-6/STAT3 signaling in hepatocellular carcinoma

Jiwu Wei, Xian Lu, Guanqun Wo, Binghua Li, Chun Xu, Junhua Wu and Chunping Jiang
Nanjing University School of Medicine, China

The NF- κ B/IL-6/STAT3 inflammatory axis is highly activated in a variety of inflammation-related cancers and contributes to suppression of antitumor immunity. In this study, we generated a novel herbal formula NHE-06, a water-decocting extract from six natural herbals, *Ficus carica*, *Taraxacum mongolicum*, *Angelica sinensis*, *Lonicera japonica*, *Pseudo-ginseng* and *Folium ginkgo*. We investigated the anti-inflammatory properties of NHE-06 and its antitumor efficacy in hepatocellular carcinoma, a typical inflammation-related cancer. We found that NHE-06 effectively suppressed NF- κ B/IL-6/STAT3 signaling and enhanced antitumor immunity both *in vitro* and in HCC-bearing mice. In a subcutaneous HCC mouse model, we found that NHE-06 possessed both preventive and therapeutic functions. Moreover, rather than the cytotoxic effects, the antitumor efficacy of NHE-06 was indispensable of intact immunity, since the therapeutic effect was only achieved in immune-competent mice whereas failed in immune-compromised mice. Taken together, the novel formula of the anti-inflammatory NHE-06 effectively restores antitumor immune-surveillance and can be applied for prevention and/or treatment of inflammation-related cancers.

Biography

Jiwu Wei has completed his MD and Postdoctoral studies from Ulm University and Munich University School of Medicine, respectively. He is the Professor of Nanjing University School of Medicine, China and a Principle Investigator in Cancer Biological Therapy. He has published more than 25 papers in reputed journals.

wjw@nju.edu.cn

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