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Short Communication
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The Chemoprevention and Chemotherapy of Ginger in Prostate Cancer

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Short Communication

Cancer is one of the major causes of death in the world. Prostate cancer is common cancer in western countries. Two types of prostate cancers are defined including hormone-dependent and castration-resistant prostate cancer [1]. Hormone-dependent prostate cancer is sensitive to hormonal therapy and anti-cancer drugs. However, drug resistance and metastasis are often occurred in castration-resistant prostate cancer. Many researchers are searching bioactive compounds from plants for chemoprevention and chemotherapy in prostate cancer [2,3]. Ginger belongs to the Zingiberaceae family. Ginger is popular used as a spice and flavoring agent. During the past decades, a lot of bioactive compounds were extracted, and several *in vitro* and *in vivo* studies were investigated in many diseases including cancer prevention, anti-inflammatory and anti-diabetic etc [3]. The mechanism involved in the chemo preventive effects of ginger is contributed by free radical scavenging, anti-oxidant and induction of apoptosis. Several phytochemicals such as gingerols, shogaols, paradols, and gingerdiols have been characterized. 6 - Gingerol is abundant compound in ginger and widely investigated in anticancer studies [4]. 6 - Gingerol can inhibit proliferation or induce apoptosis by disturbing Rb, MAPK, PI3K/Akt, ERK, cell cycle. The other well-known compound is curcumin which is a member of the ginger family, Zingiberaceae. Many studies have indicated curcumin might be a candidate compound for cancer prevention [5]. Studies also shown 6-gingerol, 8-gingerol, 10-gingerol, and 6-shogaol have anti-cancer activity different types of cancer [4]. Drug resistance in tumor cells is an important issue. Multidrug Resistance (MDR) has been intensively studied and over expression of members of the family of ATP-Binding Cassette (ABC) transporters is indicated [6]. Researchers developed new compounds for inhibiting the activity of ABC transporters and sensitizing classical chemotherapy activity. Recently we indicated that phytochemicals from ginger might display sensitizing the chemotherapy drug activity in chemoresistance prostate cancer cells [7]. Thus gingerols, shogaols, paradols, and gingerdiols can be further investigated the mechanisms with anti-cancer drugs in chemoresistance prostate cancer cells.

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