## Studies on “Jinchuang Ointment”

“Jinchuang ointment” is a traditional Chinese herbal medicine complex for treatment of incised wounds. Its recipe was first described in one ancient Chinese book of medicine, Medicine Comprehended, published in 1732. It is composed of lard, wax, starch, synthetic borneol, camphor, frankincense, dragon’s blood, myrrh, and catechu.

Clinical applications of this herbal medicine for diabetic foot infections and decubitus ulcers have been a successful course of treatment in the Division of Chinese Medicine, China Medical University Hospital, Taichunag City, Taiwan for more than decades (Fig. 1). [1] *In vitro* cell based assay platforms, such as cell proliferation, wound healing and tube formation, were used to examine the biological activity of this medicine. Our results show that this herbal medicine possesses strong activities including stimulation of angiogenesis, cell proliferation, and cell migration, which provide the scientific basis for its clinically observed curative effects on non-healing diabetic wounds.


**Figure 1. The wound area of the patient Mrs. Wu during “Jinchuang ointment “ treatment.** Mrs. Wu, is a 75 year old female patient with type II insulin dependent diabetes accompanied by peripheral arterial occlusion disease (PAOD) which led to left lateral leg and ankle necrotizing fasciitis. She was treated with percutaneous transluminal angiography (PTA) to improve lower limb circulation on Feb 6, 2013. After examination, a below-knee amputation was immediately scheduled two weeks later at the Surgery Division, the China Medical University Beigang Hospital. As suggested by a doctor from the Division of Chinese Medicine, she decided to use traditional Chinese medicine to treat her wound. Wound dimensions measured on the date specified are as followings: May 25, 2013, 26x9 cm; Jun 5, 2013, 26x9 cm; Sep 4, 2013, 8x4 cm; Aug 27, 2014, 2.5x3 cm

The skin structure and function of pigs is closest to that of humans among animals, so a porcine excisional model was used by our group. As shown in Fig. 2, both lard-containing and sesame oil-reconstituted Jinchuang ointment accelerated wound

closure significantly better than the neomycin-treated control group on day 14. An interesting clinical case is also shown in Fig. 3. The patient's four fingers were accidentally and simultaneously cut by a scalpel. "Jinchuang ointment" was applied over the stitches on her middle, ring, and little finger. However, neomycin ointment was applied over the suture on her index finger. After eleven days, the wounds on her middle, ring, and little finger were healed entirely, while the wound on the index finger was not. [2]

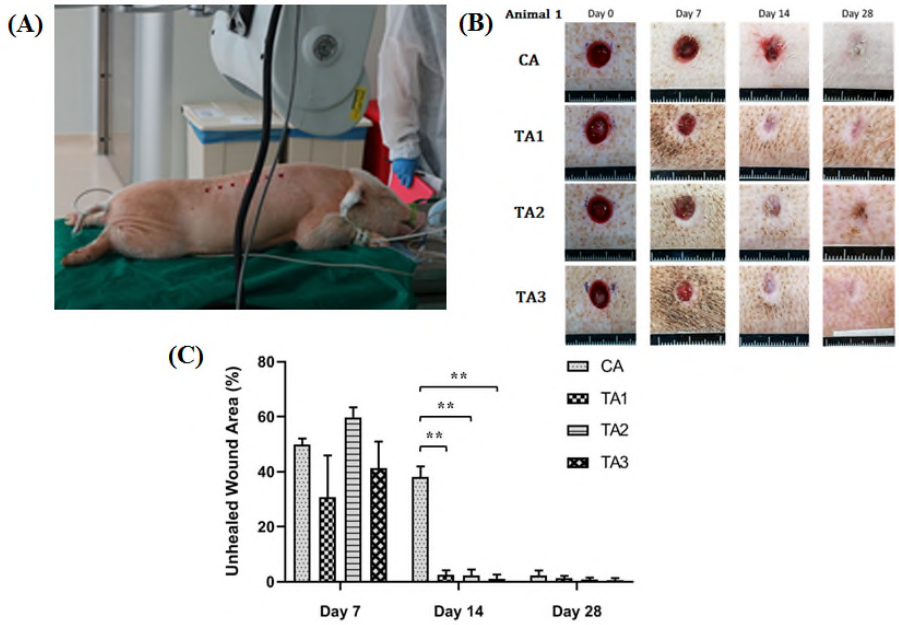


**Figure 2. (A) Surgical wound incision on the dorsal area of swine; (B) Healing process of excisional wounds at day 0, 7, 14, 28 after surgery; (C) Quantitative data concerning the proportion of the wound remaining open relative to the initial wound area at different time points after surgery.**

More recently, this herbal medicine was used to treat chronic non-healing ulcers of leprosy patients, whom have non-healing ulcers more than ten year. They were already given up by other physicians to treat their wounds. Four patients with an average age of 86 were treated in this study. Our results show that Jinchuang ointment provides a feasible, safe, simple and low-cost method to treat leprosy ulcers. Due to its low cost, this traditional Chinese medicine might play an important role in treating leprosy ulcers in low income countries or groups in the future. [3] If hospital or charity organization would like to have a trial to treat patients with Jinchuang ointment, please contact us. We can give help, including clinical experience and

Jinchuang ointment, through the cooperation of “Tzu Chi Foundation” and “Tzu Chi hospital”.

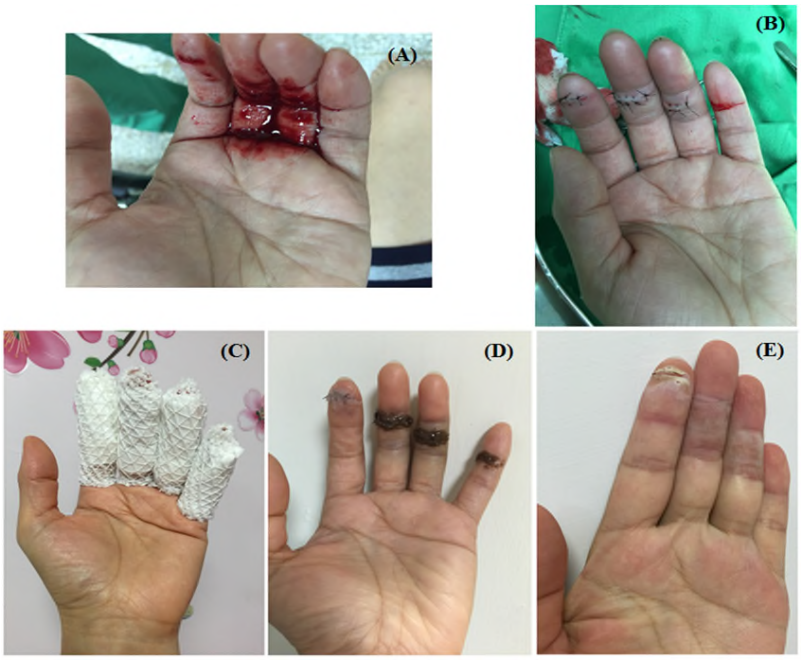


**Figure 3. Photographs of scalpel wounds on the subject’s hands sutured and treated with neomycin and Jinchuang ointment.** Date of photographs: (A) Sep 5, 2015, 13:47; (B) Sep 5, 2015, 14:19; (C) Sep 5, 2015, 14:30; (D) Sep 7, 2015; (E) Oct 18, 2015.

## Our Publication:

1. Ho TJ, Jiung SJ,* Lin GH, Li TS, Yiin LM, Yang JS, Hsieh MC, Wu CC, Lin JG, Chen HP. "The in vitro and in vivo wound healing properties of the Chinese herbal medicine “Jinchuang ointment.” (2016) *Evidence-Based Complementary and Alternative Medicine* Volume **2016**, Article ID 1654056.
2. Ho TJ, Chen JK, Li TS, Lin JH, Hsu YH, Wu JR, Tsai WT, Chen HP.* "The curative effects of the traditional Chinese herbal medicine “Jinchuang ointment” on excisional wounds." (2020) *Chinese Medicine* **15**, 41.
3. Hsu WH, Tsai WT, Hung SJ, Cheng HC, Hsu CH, Ho TJ, Chen HP. "Treatment of Leprosy Wounds with “Jinchuang Ointment”, a Traditional Chinese Herbal Medicine Complex." (2019) *Leprosy Review* **90**, 460-468.