Nothing is more closely related to humans than the plant, named “sook” in Korea. A very famous story, which has been passed down through generations, talks about a bear that endured 100 days in a cave eating only “sook” and garlic and became a bride of the mythical ancestor of Koreans, Tankoon. The word “sook” originates from the description of a plant’s ability to rapidly grow even in infertile soil. The shoot of “sook” appears from the ground in early spring, appearing soft and mild, tasting slightly bitter and spreading a characteristic fragrance. In terms of nutrition, it has been a source of vitamins to Koreans for centuries. Koreans have enjoyed the shoot of the “sook” in soups and in rice cakes. However, “sook” grows very rapidly as high as the knees in some cases, forming rigid stems and leaves along the way. It also has a strong bitter taste. Thus, “sook” is rarely used as a food material during summer. The stems and leaves die completely in winter except for the roots which extend around and grow the shoots that will emerge in the following spring. The scientific name of “sook” mentioned above is Artemisia princeps var. orientalis (Fig. 1).

In Korea a total of 28 species are present in

![Figure 1. Artemisia princeps var. orientalis](image-url)
genera Artemisia which belongs to the class Campanulales and the family Compositae. Ever since its first mention in the old Chinese bible of medicinal plants it has been used in the treatment for jaundice and liver diseases of various origin. There are at least three species of genera Artemisia claimed as In-Jin-Sook in Korea; Artemisia capillaris (Fig. 2), Artemisia iwayomogi (Fig. 3) and Artemisia annua (Fig. 4). In contrast, there have been several studies on the therapeutic effects of Artemisia capillaris on the various liver diseases and cholestasis in Japan. Recent scientific analysis reveal that inhibitory activity on TGF-beta 1 induced apoptosis of hepatocyte by capillin and capilliene contained in Artemisia capillaris and on Fas induced apoptosis by genipin which is a kind of metabolite of Artemisia capillaris produced by intestinal bacteria.

In-Jin-Sook is probably the most common plant among the various herbal remedies being used in the treatment of liver diseases in Korea. The dried whole stems and leaves (Fig. 5) are commonly used for making water extracts through the process of long time boiling, however, so far there have been no well known studies on In-Jin-Sook in Korea. Furthermore, the elevation of transaminases, aggravation of known hepatitis and acute hepatitis with jaundice are observed infrequently in the subjects who have ingested In-Jin-Sook. Although In-Jin-Sook induced hepatitis are more commonly found in long
Figure 5. The dried whole stems and leaves of In-Jin-Sook

term users using large amount or high concentrated regimen, the mechanisms behind liver injuries caused by In-Jin-Sook has not been clearly defined. Most of the patients do not show hypersensitivity such as fever, skin rash, and eosinophilia. The dose dependency might indicate mild intrinsic hepatotoxicity as a mechanism of liver injury. However, further investigations should be performed on whether the possible hepatotoxicity comes from the component of In-Jin-Sook or some possible additives which are added to dried In-Jin-Sook imported from China. Furthermore, first we evaluate the species of Artemisia as a causal plant for the In-Jin-Sook related liver injuries in Korea. In fact, there are flood of advertisements on the various products made from In-Jin-Sook which has not clearly identified the precise species, although the Korea Food and Drug Administration indicated Artemisia capillaris as the In-Jin-Sook which was allowed as a food supplement. From the view point of the subjects who eat In-Jin-Sook products, most of them ingested it for a certain pharmacological efficacy rather than as a beverage or a food.

Even though certain herbal remedies may be effective, do their benefits outweigh the risks? In the United States and European countries where various herbal medicines are sold as food supplements, there are significant problems exposing the control of their quality and safety. The minister for public health in the UK recently pointed out that “the regimen for un-licensed medicines does not give systematic protection to the public against low quality and unsafe unlicenced herbal remedies”. An important lesson should be learned from the current situation in the UK.

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References


