Earthworm-An alternative approach to biomedicine
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Abstract

Earthworms are found virtually worldwide and live in almost any type of soil that contains the right amounts of moisture and organic particles. Earthworms are of various sizes and colors. The earthworm is widely used as Chinese herbal medicine. It has dense nutritional content because of their soil based origin. Extracting medicinal compounds from the earthworm has traditionally been practiced by indigenous people throughout the world, more particularly in Asia. Earthworm studies have shown its antimicrobial, hepatoprotective, anticancer and scar wound healing characteristics. The anti-inflammatory activity together with antioxidant properties seems to be due to the high polyphenolic content in earthworm tissue. Moreover, crude earthworm extract has a thrombolytic effect that could significantly promote blood circulation to remove stasis. Earthworm powder (EWP), a natural boon for medicine, has showed a wide variety of biological activities, which make it a good candidate for the treatment of many oxidative stress-mediated diseases.

Keywords: earthworm, biomedicine, antimicrobial, anticancer

Introduction

Conventional medicine is excellent at treating acute injuries and infections, however, account for the link between mind and body. Therefore, its usefulness in chronic illness and pain is decreased as it treats the symptoms and not the cause. A more holistic approach to management of chronic disease and pain has proven, in some cases, to be effective. The alternative and complementary medicines are all mainstream proven alternatives. Herbal medicine is classified into four herbalistic systems. Traditional Chinese, Ayurvedic, Western—which originally came from Greece and Rome to Europe and then spread to North and South America and Traditional Arabic and Islamic Medicine (TAIM). Arabic traditional herbal medicine is still practiced in the Middle East and is acquiring worldwide respect and interest among traditional herbalists and the scientific community. TAIM therapies are successful in healing acute chronic diseases. TAIM attempts to heal infertility, epilepsy, psychosomatic troubles, and depression. In addition, efficacy and safety of TAIM are increasingly important where supervision of techniques and procedures is required for commercial and traditional applications (Cooper, 2005).

Earthworms have provided ancient cultures with food and sources of medicinal cures. Ayurveda, Traditional Chinese Medicine (TCM), and practices in Japan, Vietnam, and Korea have focused first on earthworms as sources of food. Gradually fostering an approach to potential beneficial healing properties, there are renewed efforts through bioprospecting and evidence-based research to understand by means of rigorous investigations the mechanisms of action whether
Earthworms are used as food and/or as sources of potential medicinal products (Cooper et al., 2004). Di Long or Dilong extract, literally earth-dragon/worm powder, is a medicinal preparation based on abdominal extracts from the earthworm species *Lumbricus rubellus* used in traditional Chinese medicine (TCM) for a wide variety of disorders, from convulsions and fevers to rheumatoid arthritis (Wei, 2000).

*Lumbricus* Tonic

*Lumbricus* Tonic is a multi-agent supplement of which the principal ingredient is *lumbricus*, earthworm powder in combination with *Atractylodes alba*, *Poria cocos* and *Acorus gramineus*. This formula is used for supporting digestion, assimilation, liver function, relieving liver congestion, enhancing hepatic antioxidant and detoxification function.

1. *Lumbricus* (earthworm powder) - Supportive for muscle relaxation and tonification of the sympathetic nervous system, thereby being potentially beneficial for digestion.

2. *Atractylodes alba* - Supportive for the functions of the stomach and spleen, (organs responsible for food digestion in Eastern Philosophy) thereby being potentially beneficial for low appetite, poor digestion, nausea, vomiting, diarrhea, bloating and indigestion. *Atractylodes* has been shown to be of benefit for abdominal distention, pain and gurgling sensations in the abdomen (Chen et al., 1997).

3. *Poria cocos* - The most widely used herb in Chinese herbalism. Supportive for the spleen, lung, kidney, triple warmer, bladder, heart and gallbladder, *Poria cocos* is a Yin tonic benefiting fluid metabolism by regulating body fluids. It benefits the circulation in the triple warmer and is important for the health of the internal organs. It is calming to the nervous system and is considered a heart tonic, lung tonic and plays a role in blood sugar regulation (Lee, 2005).

4. *Acorus Gramineus* - Used traditionally as a digestive tonic supporting the circulation of digestive juices, for ringing in the ears, excess phlegm, abdominal bloating, achiness and poor memory.

Boluoke (lumbrokinase) is the only fully researched oral enzyme on the market supporting a healthier blood state, and it shows great promise in supporting a healthy balance of coagulation and fibrinolysis in the body. In China, earthworm protein extracts and lumbrokinase have been studied thoroughly and have been used to support a healthier blood state. First, there were the dried earthworms used in traditional Oriental medicine decoctions, and then there was ground-up earthworm powder. Later came the granular crude extract of earthworms, and now there is Boluoke®, a nutraceutical product containing purified enzymes extracted from earthworms (Pronounced Boh-LUKE).

Just like Omega-3 molecules in fish oil, the polyphenols in green tea, and curcumin and turmeric, the group of enzymes called lumbrokinase shall in time be known as a valuable characteristic of earthworms (Yu et al., 1998).

**Benefits of Earthworm as a natural medicine**

Working as a bio medicine, there are no side effects, safe for all ages (very good for adults and children), safe to consume in the long term and continuously and safely used in conjunction with doctor medication, also enhance the drugs work.

**Diseases can be cured by earthworms:** Type of earthworm which usually used as a natural medicine is
Lumbricus rubellus, Eisenia fetida and Pheretima sp. These earthworms are useful for: normalizing the metabolism of human body cells, nervous system (calming, lower the heat, stop the pain), cardiovascular system (lowering blood pressure, normalize the irregular heartbeat), immunological system (enhancing immune / immunity against disease), respiratory system (widen nasal passages), blood circulation (prevent formation of thrombus, prevent blood clotting, destroying a thrombus), healing typhus, lowers cholesterol, improve endurance of the body, lowers high blood pressure, increased appetite of eating, treat digestive tract infections such as typhus, dysentery, diarrhea and other stomach disorders such as an ulcer, treat respiratory infections such as cough, asthma, influenza, bronchitis and tuberculosis (Fang et al., 1999), reduces aches because of fatigue or rheumatic, lower blood sugar for diabetic, healing hemorrhoids, eczema, allergies, wounds and toothache, healing encephalitis, pneumonia, stroke, inflammation of the ear, liver, acne and maintain stamina of the body.

References


