

The Mixture Extract of Sendeng-4 by Aqueous and Alcohol Inhibit Growth of Bactery

Wurina^{1,2}, Rina D², Enkhtur Y^{1*} and Sharav B³

¹International School of Mongolian Medicine, Mongolian National University of Medical Sciences, Mongolia

²Inner Mongolia Medical Univerisity, Mongolia

³Department of Dermatology, School of Medicine, Mongolian National University of Medical Sciences, Mongolia

***Corresponding author:** Enkhtur Y, International School of Mongolian Medicine, Mongolian National University of Medical Sciences, Zorig Street 1, Sukhbaatar District, Ulaanbaatar Mangolia, Tel: 976-99110327; Email: enkhtur@mnums.edu.mn

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Abstract

Current wound infection diagnosis involves clinical judgment in combination with microbiological analyses of wound swabs. And the skin infection was occurred by microbial. Sendeng-4, as an antimicrobial medication was explored. The aqueous and alcohol extract of Sendeng-4 was obtained by zeolite dialysis membranes with different apertures. The Antimicrobial assay was determined. The results showed that aqueous extract Sendeng-4 were tested against escherichia coli, staphylococcus aureus, pseudomonas aeruginosa, salmonella. All the microbial did not grow in 350mg/ml aqueous extract Sendeng-4. It will give a new way to find antimicrobial medication.

Keywords: Sendeng-4; Aqueous and Alcohol Extract; Antimicrobial; salmonella

Abbreviations: CNI: Chinese National Institute; USA: United States of America; CC: Chemical Company

Introduction

Current wound infection diagnosis involves clinical judgment in combination with microbiological analyses of wound swabs [1]. However, there is uncertainty as to how accurate the presence of these characteristics, correlates with wound infection. Laboratory-based techniques [2]; both non- and culture based techniques, are time-consuming and culture over-estimates rapidly dividing non-fastidious bacteria and under-estimates more

fastidious anaerobes. Therefore, untargeted empirical antimicrobial treatment is common, causing delays in optimal wound management as well as risks for development of antimicrobial resistance [1,3].

Plant medicine was the main composition in Mongolia and Chinese Medicine [4,5].

The traditional plant use around the globe represents an invaluable reservoir of knowledge and a large potential of yet “undiscovered” use of natural resources. There are numerous examples for traditional knowledge of plant use as a starting point for the development of products used in modern societies, such as medications, industrial

resources or cosmetic products [4,6,7]. Mongolian medicine Sendeng-4 is comprised of *Xanthoceras sorbifolia*, *Toosendan fructus*, *Gardeniae fructus*, and *Chebulae fructus* at a ratio of 5:3:1:1. However, the antibacterial activity of Sendeng-4 was not shown. In this study, the aqueous extract of Sendeng-4 was obtained.

Materials and Methods

Unless otherwise specified, all chemicals and reagents in this study were purchased from the Sigma Chemical Company (St. Louis, MO, USA). Sendeng-4 was purchased from the Chinese National Institute (Beijing, China).

Aqueous and alcohol extract of sendeng-4

Sendeng-4 (according to the compatibility of traditional prescriptions, *Xanthoceras chinensis*: *Quercus chinensis*: *Gardenia jasminoides*: 5:3:1:1) was enlarged drug extraction, *Xanthoceras* crown 1000g, *toosendan* 600g, *Quercus jasminoides* 200g, *Gardenia jasminoides* 200g, was crushed to powder, and the powder was soaked in water for 2-4 h at room temperature. Sendeng-4 was extracted twice by low temperature physics sublimation. The supernatant was collected by centrifugation at 4,000×gr for 10 min and separated using zeolite dialysis membranes with different apertures. And finally, the supernatant was. The precipitate was dry, and soaked in

70% alcohol, stir continuously for 4 hours, and then reflux ethanol. Finally, the content of gallic acid was taken as the standard, and the water and alcohol extracts were mixed. After gradient centrifugation, the supernatant is collected and filtered through different molecular columns and freezing dry. Finally, the desired main components are obtained.

Antibacterial test

Aqueous and alcohol extract of Sendeng-4 was dissolved in aseptic water and serially diluted at final concentrations of 330mg/ml, 165mg/ml, 82.5mg/ml, 41.25 mg/ml for 14days. The antifungal properties of aqueous extract of Sendeng-4 were tested against *escherichia coli*, *staphylococcus aureus*, *pseudomonas aeruginosa*, and *salmonella*.

Results and Discussion

The antimicrobial properties of aqueous extract Sendeng-4 were tested against *escherichia coli*, *staphylococcus aureus*, *pseudomonas aeruginosa*, and *salmonella* in (Figure 1). The antimicrobial zones in 165mg/ml, 82.5mg/ml and 41.25mg/ml were lower than 330mg/ml. And the antimicrobial zones in 82.5mg/ml and 41.25mg/ml were lower than 165mg/ml. However, there was no significantly difference between the 82.5mg/ml and 41.25mg/ml.

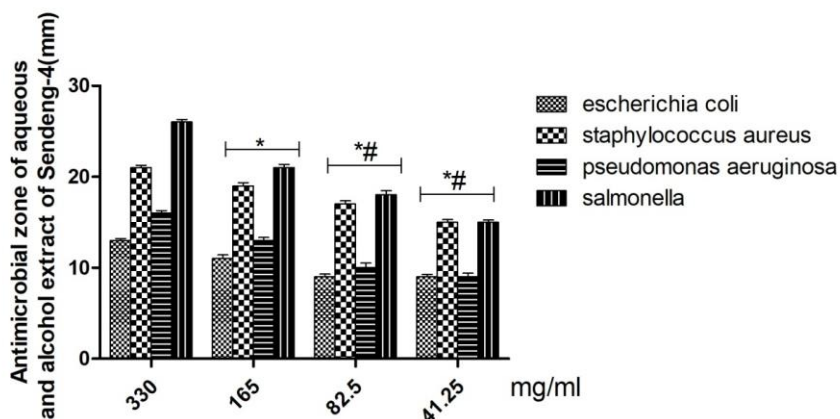


Figure1: Antimicrobial zone of aqueous and alcohol extract of Sendeng-4.

*: Significantly different from 330mg/ml ($P < 0.05$). #: significantly different from the 165mg/ml ($P < 0.05$).

Senden-4, as a plant of Mongolia Medicine, has its own unique theory and method in clinic. It mainly was used in the treatment of gout, rheumatism, joint grasserie, and edema [8]. In Mongolian medicine, it is mainly used to treat rheumatism and arthritis according to its function of

clearing away heat and drying yellow water. Compatibility of drugs can enhance curative effect and reduce toxic and side effects. Monarch medicine (prescriptions) is the main, minister medicine (*toosendan*) supplemented by adjuvant medicine (*Quercus chebula*) to reduce the toxic

side effects of the monarch and minister, so that the medicine (*Gardenia jasminoides*) is mediated by meridian [9].

In this study, the Antimicrobial properties of aqueous extract of Sendeng-4 were showed. And it can inhibit microbial growth. It will give a new way to find antimicrobial drug. Senden-4 can effectively inhibit the activity of HIV protease. At the same time, the water extract of Sendeng-4 can inhibit *Candida albicans*, *Pityrosporum furfur*, *Microsporum canis*, and *Trichosporum rubrum*. At the same time, it also has a good inhibitory effect on gonococcus. Its MIC₅₀ is 0.624 mg/ml. In particular, it has been found that it has a good inhibitory effect on *Helicobacter pylori* [8].

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