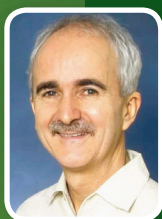


MEDI  HERB®

Echinacea  Premium®

Research Proven Echinacea





"My goal when I founded MediHerb was to serve practitioners by providing the best possible products and education. You will no doubt agree that investing in research is a very important way to advance these goals and increase the credibility of our profession. Echinacea is my favorite herb and many of you may have heard me say '**You can build your practice on Echinacea alone**'. In 2003, MediHerb embarked on an extensive research project on our flagship product Echinacea Premium in conjunction with scientists from the University of Queensland and overseas. We are very proud of Echinacea Premium and the amazing research that supports this product, which at the end of the day, simply validates what the traditional users of this incredible herb have always known."

**Professor Kerry Bone**  
MediHerb Director of Research & Development

## Echinacea A New Understanding

Echinacea is both misunderstood and underestimated. There are many Echinacea products available which differ according to species, plant part, quality markers and dosage. The wide variety of products available is why there is controversy surrounding Echinacea and its effectiveness. To many people, all Echinacea is the same. However, treating different species, plant parts and actives of Echinacea as the same thing, is like comparing apples with oranges.

Echinacea is commonly thought of as an herb for winter seasonal stresses and only for short-term use. Kerry Bone's applications for Echinacea are much broader than this and you may wonder why

this is. Kerry has spent many years both researching and prescribing Echinacea for thousands of patients. His passion for Echinacea led to the MediHerb research project and a greater understanding of Echinacea and how it works. **The research results validate the traditional wisdom of Echinacea, ie to achieve good clinical results you must use only a root preparation with high levels of alkylamides.**

So if the traditional users of Echinacea understood how to use it for the best results, why is there so much confusion now? To answer this question we must first look at the history of Echinacea.\*

## The History of Echinacea – Traditional vs 20<sup>th</sup> Century

Information about the therapeutic value of Echinacea first came from Native American tribes. Their use of Echinacea was then adopted by the Eclectics, a group of doctors who were prominent around the late 19th and early 20th centuries in the United States. By 1921 Echinacea (specifically the root of *Echinacea angustifolia*) was by far the most popular treatment prescribed by Eclectic physicians.<sup>1</sup>

### From this traditional use we know:

- The **Native Americans** preferred *Echinacea angustifolia* and **ONLY** used the root
- The **Eclectics** only used a **fluid extract of the dried root** of *Echinacea angustifolia* extracted in a high percentage of alcohol
- This extract is **lipophilic** (fat loving) and can be called a **"traditional Echinacea extract"**
- The **Eclectics** defined good quality Echinacea root **"as imparting a persistent tingling sensation"** which is a clear reference to **alkylamide** levels as a **quality indicator**.<sup>2</sup>

In Europe during the 1930s, the German herbalist Madaus used *E. purpurea* as he was more successful at growing this species. His interest in homeopathy led him to use the stabilized juice of fresh *E. purpurea* tops (aerial parts).

### From the 20<sup>th</sup> century German use of Echinacea we know:

- This style of product is a **"hydrophilic"** (water loving) extract of Echinacea
- These tinctures contain **very low levels of alkylamides**
- German scientists researched these new extracts for an active component and identified the polysaccharides<sup>3</sup>
- In contrast, traditional Echinacea extracts contain few polysaccharides because the root has low starting levels and the high percentage of alcohol used does not effectively extract these water-loving molecules
- Importantly, **polysaccharides** are large polar compounds that **have low oral bioavailability**<sup>4\*</sup>

#### Traditional:

Ethanol extract  
Root  
High alkylamides

#### European:

Juice  
Aerial parts  
Low alkylamides



Native Americans mainly used the root of *E. angustifolia* despite it being difficult to dig out of the ground





## The Science of Echinacea – MediHerb's Research

Kerry Bone has always believed that a key aspect of modern phytotherapy is a respect for traditionally-generated knowledge. *E. angustifolia* root however is very expensive and was cost prohibitive for many of his patients. To overcome this, Kerry developed **Echinacea Premium**, a particular blend of *E. angustifolia* and *E. purpurea* roots. In 2003 MediHerb began an extensive research project which was designed to identify the bioavailable components of Echinacea Premium and how they exert an effect on the immune system.\*



### Which of the key phytochemicals in Echinacea Premium are absorbed and therefore bioavailable?

From MediHerb's *in vitro* and pharmacokinetic research we know:

- Alkylamides are the ONLY constituents detected in the blood after taking Echinacea Premium. No caffeic acid conjugates, degradation products of these or the alkylamides were found<sup>5</sup>
- The immune active alkylamides mainly in *E. purpurea* are rapidly degraded by the liver
- In contrast, the alkylamides mainly in *E. angustifolia* were much more slowly degraded
- Interestingly, the alkylamides from *E. angustifolia* actually slowed down the rate of degradation of the alkylamides from *E. purpurea*
- The combination of *E. angustifolia* and *E. purpurea* alkylamides decreases the degradation of the immune system active alkylamides so that they last in the blood stream longer
- This is a strong justification for the combination of *E. angustifolia* root with *E. purpurea* root, as in the Echinacea Premium. A patent has been applied for to protect this very important finding<sup>6</sup>
- The total amount of alkylamides absorbed into the bloodstream was essentially the same for both Echinacea Premium tablets and Echinacea Premium 1:2 liquid<sup>7\*</sup>

### Do alkylamides have an effect on the immune system?

- Echinacea did not activate the immune system in the absence of any challenge (*in vitro* research)
- The Echinacea alkylamides tended to modulate the immune system response of macrophages and T cells *in vitro*, toning the response down in the face of a strong stimulus hence helping the immune system to operate more efficiently<sup>8,9</sup>
- These results, combined with the fact that alkylamides are the only phytochemicals which are bioavailable from traditional lipophilic extracts of Echinacea root (such as ethanolic liquid extracts)<sup>5</sup>, suggests that the alkylamides are largely responsible for the systemic immune system effects of Echinacea lipophilic extracts
- This immune system modulating activity may be (at least in part) due to the interaction of alkylamides with cannabinoid receptors specifically CB2 (*in vitro* research)<sup>10,11,12</sup>
- Echinacea Premium increased heat shock protein levels (hsp70) and increased white cell count in healthy volunteers<sup>13</sup>
- *E. purpurea* root boosted the number and function of natural killer (NK) cells (a class of white blood cell) in mice<sup>14\*</sup>

## The Story Continues

### Recent Research Finds Echinacea Promoted Immune System and Respiratory Health in Air Travelers

Dr. Evelin Tiralongo and a team of researchers from Griffith University of Australia conducted a double blinded clinical trial investigating the effect of Echinacea on immune and respiratory health of long-distance air travelers. MediHerb Echinacea Premium was used in this trial due to its high alkylamide content, essential for the purpose of the research.

Adults flying economy class from Australia to America, Europe, or Africa took Echinacea Premium tablets or a placebo for two weeks before flying, during the trip, and for two weeks after returning to Australia. The dose was one tablet twice daily, increasing to two tablets twice daily while flying. Participants were allowed to increase the dose up to three tablets twice daily if they experienced any respiratory or immune system challenges. The higher dose could only be continued up to eight consecutive days or twice for four days during the whole travel period.

Echinacea Premium was found to **significantly support and protect immune system and respiratory health in air travelers** who participated in the trial.\*

This research (by Tiralongo E et al.) has been published in the online journal *Evidence-Based Complementary and Alternative Medicine* ([www.hindawi.com/journals/ecam/](http://www.hindawi.com/journals/ecam/)).

## A New Understanding of Echinacea

The research on Echinacea Premium by the MediHerb scientists has made a substantial contribution to a new understanding of lipophilic extracts of Echinacea. It can be concluded from this research that:

- **Alkylamides** are the major **quality and activity** markers. They are bioavailable and active
- The **root of Echinacea** is the preferred plant part, since it is highest in alkylamides
- The **preferred species** of Echinacea are ***E. angustifolia*** and ***E. purpurea*** since they contain high levels of alkylamides (compared to *E. pallida*)
- Echinacea must be extracted using an **alcohol percentage sufficiently high** to efficiently extract the alkylamides
- The synergistic blend of *E. angustifolia* and *E. purpurea* alkylamides in Echinacea Premium **potentiate each other** for greater therapeutic effect
- One potential way in which the bioavailable alkylamides **modulate** the immune system response is by interacting with **CB2 receptors**
- Echinacea root (rich in alkylamides) also may **boost the white cell count (clinical trial results)**, especially NK cells (in animal models)
- The traditional way Echinacea was used has been validated by scientific research at the cutting edge of modern immunology
- MediHerb guarantees a minimum of 4.1 mg of alkylamides in every tablet of Echinacea Premium to ensure optimal clinical results\*

For full details of MediHerb's Echinacea Research refer to our catalog or visit [www.mediherb.com](http://www.mediherb.com) catalog to search for **The MediHerb Echinacea Research Story** on the **Echinacea - A New Understanding** page

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\*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.



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