

# Comparing different brands of the “same substance”

## Company

Swinburne University of Technology-research study (Prof Con Stough)

## Problem/opportunity

If you visit the pharmacy or health store there are sometimes dozens of products apparently containing the same substance. For instance, there may be products from different companies listing ginkgo biloba, or bacopa or St John’s wort as an ingredient. Do they all have the same efficacy? Which ones should we choose to conduct clinical trials?

## Solution

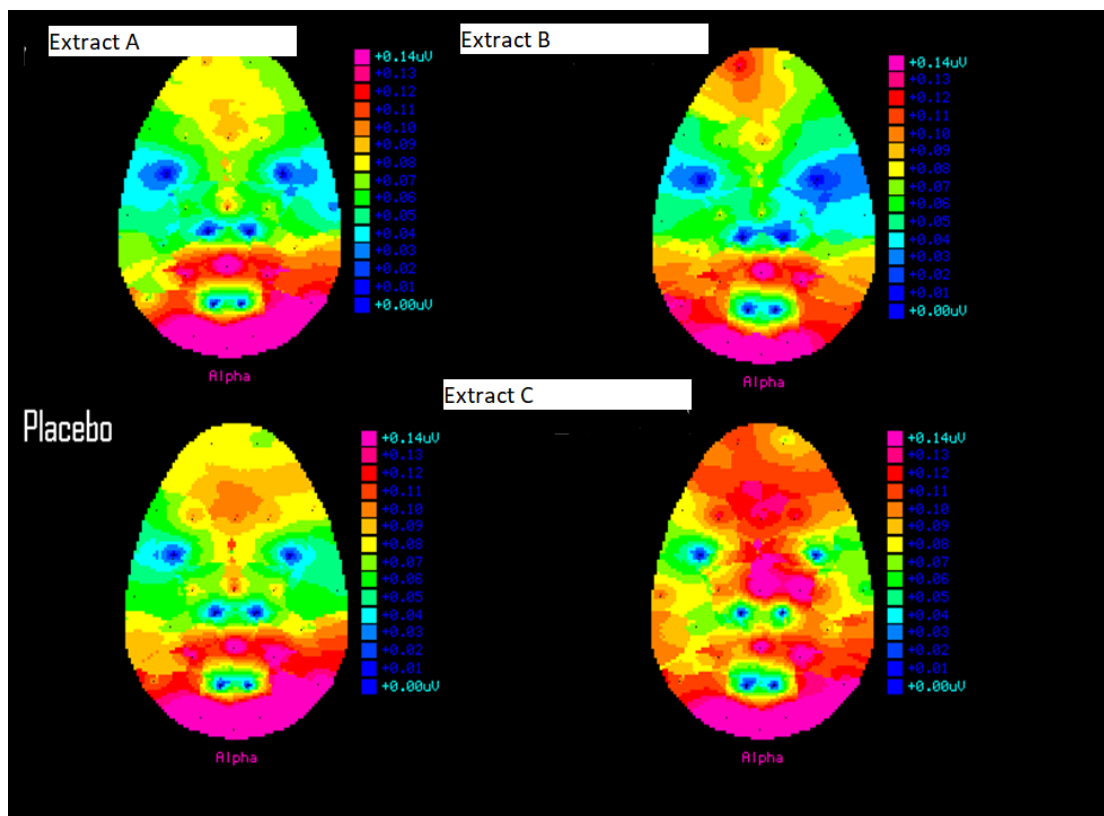
There may be many ways to evaluate seemingly identical products from different manufacturers. You might start by reading the ingredient list and identifying the quantities of the reported active ingredients. An evaluation of the extract technique or even where the plant was grown and harvested may follow. In separate blogs and case studies we deal with some of these seed to patient issues.

However, many products appear to be similar from first reading and evaluation. We decided to use other methods to evaluate efficacy. Here we describe a scientific mechanism (EEG) by which we evaluated similar product offerings of St John’s Wort (Hypericum extracts) from 3 different companies.

### Evaluating the acute brain activity of 3 different products of St John’s wort.

In this comparison (using a double-blind methodology) we administered 3 different St John wort’s and placebo acutely with each administration separated by 1 week for each participant. 20 participants were tested on 4 occasions. We measured EEG power before acute administration and then again 2 hours after administration. The following EEG maps represent the difference in EEG power from 2 hours post-to baseline brain activity for each of the 3 St John’s wort products representing 3 different brands. Increased brain activation is shown with increased red colour in these maps of the brain. For hypericum to be efficacious in reducing feelings of depression and anxiety we would expect brain activation in the frontal areas. You can see from these maps that Extract C has the most frontal activation followed by Extract B. Extract A and placebo appear to be similar in terms of activation.

Figure 1: Acute EEG (Brain activation) of 3 different brands of hypericum extract versus placebo in healthy adult volunteers.



## Our role

We conceived, funded and carried out the evaluations.

## Outcomes

We used this technique to differentiate quality and efficacy of hypericum extracts and to demonstrate that there are biological differences for different brands. Not all hypericum extracts and therefore products are equivalent. There are many scientific techniques that we can use to differentiate your product from another brand's products for efficacy and mechanisms of action and this is important for product development, brand awareness and ultimately for customers to have confidence that natural medicines actually work.

## References

If you would like to know more about this technique or study please contact Prof Con Stough @ Metavate.

## Tags

St John's wort, hypericum perforatum, EEG