

160-Subjects over 90- Days  
2022

Manufacturer: LongStar Health Pro Incorporated  
Product: Brevincapini/Lifeflower®

Clinical Study run by and reported on by:

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## Overview

The study product, Lifeflower® Breviscapini, 200mg Erigeron Breviscapus extract, 95% Scutellarin.

Ingredients Standardized extract of Erigeron Breviscapus (100:1), 200mg/capsule. Other ingredients: gelatin and purified water.

Manufactured and provided by LongStar HealthPro. Inc. DBA Farlong Nutraceutical.

API: Kunming Longjin Pharmaceutical Company.

Placebo: provided by LongStar Health Pro. Inc. DBAA Farlong Nutraceutical capsule filled with rice powder.

LifeFlower Breviscapine (Erigeron Breviscapus extract) is a patented and branded ingredient that contains at least 90% to 98% of scutellarin as the primary bioactive compound.

All ingredients are vegan and are produced using no GMOs. This supplement is cGMP-certified and tested in an independent, third-party laboratory.

Breviscapine manufactured consistent with cGMP (Current Good Manufacturing Practice) is GRAS based on scientific procedures for use as an ingredient in yogurt, nutritional bars, smoothies at 84 mg per serving, and dietary supplements at 200 mg per person per day.

Lifeflower® Breviscapini is an herbal supplement for cognitive and brain health.

Erigeron breviscapus has been used for centuries by people who practice the ancient art of traditional Chinese medicine. It is well-understood that the primary active flavone called scutellarin affects the cerebrovascular system.

Lifeflower® Breviscapine is an active flavonoid component extracted from *Erigeron Breviscapus*, containing more than 90 percent of scutellarin.

Scutellarin has been shown to enhance memory, cognitive function, and brain health; increase brain circulation; and promote the development of new blood vessels in clinical studies. A series of safety and efficacy studies were conducted, and an expert panel committee concluded that Lifeflower®

enhances the pharmacological effects of *Erigeron breviscapus* and its active ingredients for treatment of Alzheimer's disease] Metabolism and Pharmacological Mechanisms of Active Ingredients

### Other Studies

Evaluating the possible effects of anti-inflammatory of methanol extract from *Erigeron Canadensis* L. It may be involved with upregulation of heme oxygenase-1 expression and suppression of NFκB and MAPKs activation in macrophages.

Several cytological studies in genus *erigeron* have been conducted with positive outcomes.

The protective mechanism of *Erigeron breviscapus* injection on blood-brain barrier injury induced by cerebral ischemia in rats was very successful and provided a in-depth look at this ingredient.

Lifeflower® *Breviscapus* has undergone many animal studies assessing it many uses and possible applications for humans.

*Erigeron breviscapus* (Vant.) Hand-Mazz. is a plant species in the Compositae family. More than ten types of compounds-such as flavonoids, caffeinate esters, and volatile oils-have been identified in *Erigeron breviscapus*; however, it remains unknown as to which compounds are associated with clinical efficacy. In recent years, flavonoids and phenolic acids have been considered as the main effective components of *Erigeron breviscapus*. The metabolism and mechanisms of these compounds in vivo have been extensively studied to improve our understanding of the drug.

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## **Study Overview**

A double blind, randomized, controlled, parallel study to determine the effect of the test product on improving long and short-term memory, concentration, and clarity of thinking in healthy individuals.

This Safety and Effectiveness Study was conducted to evaluate the effects on the human body, brain, organs, and systems with the ingestion of Lifeflower® Breviscapine supplement over 90-Days.

It was the objective to provide a comprehensive understanding of this product's effects on daily living as it relates to brain function.

### Inclusion

1. Males and females between the ages of 18-70 years of age as of day-1 of this study.
2. Ratio of males to female subjects should be 3:1
3. Willingness to complete questionnaires, records, and diaries associated with the study.
4. Ability to complete all office visits required for this study.
5. Agreement to maintain current level of physical activity through the study.
6. Subjects with scores in the general range cognitive tests of 20-21 points.

### Exclusion

Subjects with high blood pressure above 180/90 in the last 2 years

Subjects with diagnosed blood sugar problems in the last 5 years

Subjects who have undergone surgery within the last 6 months

Subjects with a cancer diagnosis within the last 5 years

Subjects who have had an alcohol abuse issue within the last 5-years

Subjects with a diagnosed drug abuse within the last 5-years

Subjects with an inability to walk and or move about at will

Subjects with an inability to follow the protocol of this study

Subjects with an inability to follow directions given by staff

Subjects with a serious head injury within the last 5-years

Subjects who are pregnant or nursing or want to become pregnant during this study

Subjects with a history of head trauma over the last 5 years

Subjects who are positive for Covid-19 in the last 3 months

Subjects with a history of uncontrolled thyroid dysfunction over the last 5 years

Subjects who have taken health supplements other than vitamins and minerals within two weeks prior to their screening visit.

Subjects with a diagnosed neurological disorder over the last 5 years

Subjects with a diagnosed psychiatric illness in the last 5 years

Subjects who do not meet the study protocol in the opinion of our staff or other healthcare professionals

Subject with a known allergy to the test material's active or inactive ingredients

Subjects diagnosed with any unstable medical conditions in the last 5 years

Subjects who have participated in a clinical research trial within 90 days prior to the start date of this study

Subjects who maybe cognitively impaired and/or who are unable to give informed consent as evaluated by our staff

Subjects with a history of hepatic and renal dysfunction and biliary tract diseases, or intestinal diseases affecting drug administration, absorption, or metabolism

Subjects who received surgery within 12 months before the trial that would affect drug absorption, distribution, metabolism, and excretion as judged by the investigator, or planned to undergo surgery during the study period

Subjects who have used soft drugs (such as marijuana) within 6 months before the trial or hard drugs (such as morphine, methylamphetamine, ketamine, dimethylenedioxyamphetamine, tetrahydrocannabinolic acid) within 1 year before the trial.

Subjects deemed for any reason to not be eligible for this study

Mean Age= 56 ± 5 years old

Male: Female: 107:53

P value overall- 0.04

### **Areas of Evaluation Pre-Study**

Before being admitted to this study each subject had arterial blood draws to establish their organs and systems health.

Vitals signs were taken.

Weight taken.

Consent to study participation was signed.

History and health intake questions were answered.

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### **Protocol**

This study was made up of 160-subjects. With 120 subjects taking Lifeflower (Breviscapini).

Dose

Placebo- Group 40 subjects placebo (rice power) taken twice daily

Group two 40 subjects 100mg twice daily

Group three 40 subjects 200mg twice daily

Group four 40 subjects 400mg twice daily

Day-0

Possible subjects were evaluated for this specific study. Arterial blood draws to collect blood samples were done. Oral in-take and histories were taken. All other possible information was collected and evaluated for possible precipitation of this study.

Arterial blood was drawn to determine possible subjects entering this study. Testing that was run included:

Alanine transaminase (ALT) is an enzyme that mainly exists in the liver. An ALT blood test is usually included in a liver panel and comprehensive metabolic panel, and healthcare providers use it to help assess the liver health.

Aspartate transferase (AST) is an enzyme that's found in the liver, heart, pancreas, muscles, and other tissues in y body. An AST blood test is often included in a liver panel and comprehensive metabolic panel, and healthcare providers most often use it to help assess the liver health.

Complete blood count (CBC) is a blood test used to help evaluate overall health and detect a wide range of disorders, including anemia, infection, and leukemia.

A complete blood count test measures several components and features of blood, including:

Red blood cells, which carry oxygen

White blood cells, which fight infection

Hemoglobin, the oxygen-carrying protein in red blood cells

Platelets, which help with blood clotting

#### Day-1

All chosen subjects were randomly placed into their groups. Groups consisted of.

Group 1: 40 subjects

Group 2: 40 subjects

Group 3: 40 subjects

Group 4: 40 subjects

All subjects and staff members were kept blind to the knowledge of what subjects were on a the live product or the placebo product. This study followed Double Blind procedures. This study was also a placebo-controlled study.

All subjects signed an Informed Consent to enter this study.

All subjects were given a group information talk as well as a one-on-one meeting to go over the protocol and all others details of this study.

Subjects were informed NOT to change any of their daily habits including eating, drinking, exercise, or sleep for this study. If changes came naturally that would be acceptable.

All subjects were told to take the product in the morning hours with food and again in the evening with food.

All subjects were informed that if they missed taking the product to just take it that day as soon as they remembered.

All subjects were provided a 24-hour number where they could reach a Health-care professional if they needed to.

All subjects were informed to tell all EMT's, doctors, or health-care providers they worked with that they were participating in a human clinical study and taking a test product.

All subjects were contacted bi-weekly on the phone to ensure compliance.

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## Testing

Day-1 blood work was drawn from arterial veins of each subject following standard laboratory procedures.

For each sample that was collected three separate tubes were collected. The stated number for each data point is the average of the three separate vials test data.

Subjective intakes were given out and collected from each subject. This was completed on a tablet used for only this purpose.

## Day-30

Subjects were brought back to the health-care professionals' offices to evaluate their compliance, re-take questionnaires and repeat all laboratory blood tests.

## Day-60

Subjects were brought back to the health-care professionals' offices to evaluate their compliance, re-take questionnaires and repeat all laboratory blood tests.



## Day-90

Subjects were brought back to the health-care professionals' offices to evaluate their compliance, re-take questionnaires and repeat all laboratory blood tests.

\*Questionnaires were completed on tablets.

## Areas Evaluated

### RBC

Red blood cells (RBC) can be present in urine even when they are not visible to a person. The medical term for RBC in the urine is hematuria.

There are two types of hematuria. One is called "gross hematuria," which occurs when a person can see the blood in their urine. The other type is "microscopic hematuria," wherein a person cannot see the blood in their urine, even though RBC are present.

However, RBC in the urine is usually a symptom of an underlying health condition. A doctor will typically test for RBC content during a urine test. They will then use the results to help determine what the next course of action should be.

### LaserCyte Dx Hematology Analyzer

4.7-6.1cells/mcL normal

#### Placebo Group

Day-1	Day-30	Day-60	Day-90
5.4	5.4	5.3	5.2

#### Live Product Group

5.3	5.4	5.3	5.3
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\*Totals reported are the average of the entire group

## WBC

White blood cells, also called leukocytes or leucocytes, are the cells of the immune system that are involved in protecting the body against both infectious disease and foreign invaders. All white blood cells are produced and derived from multipotent cells in the bone marrow known as hematopoietic stem cells. Leukocytes are found throughout the body, including the blood and lymphatic system.

White blood cells consist of granulocytes (neutrophils, eosinophils, and basophils), monocytes, and lymphocytes.

Leukocytes originate from the bone marrow and consist of granulocytic and mononuclear cells. These cells are important in both the innate and adaptive immune response. Characterization of increases and decreases of specific cells (neutrophils, eosinophils, basophils, lymphocytes, and monocytes) can help characterize how a subject is responding to a particular antigenic stimulus.

Causes of abnormally high levels or leukocytosis depend on which cell type is increased. An increase in neutrophils or neutrophilia may indicate a stress or inflammatory response. If there is an eosinophilia, parasitemia or a hypersensitivity response should be considered. Lymphocytosis can occur with immune stimulation or associated with epinephrine release which can accompany excitement or exercise.

A decrease in white blood cell numbers or leukopenia can occur with increased tissue demand as can be seen in severe inflammatory responses, endotoxemia, or bone marrow suppression.

LaserCyte Dx Hematology Analyzer

4,500-11,000 microliters normal

Placebo Group

Day-1	Day-30	Day-60	Day-90
7755	7980	7992	7407

Live Product Groups

7673	7599	7295	7405
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\*Totals reported are the average of the entire group

PLT

Platelets, also called thrombocytes, are a component of blood whose function (along with the coagulation factors) is to react to bleeding from blood vessel injury by clumping, thereby initiating a blood clot. Platelets have no cell nucleus; they are fragments of cytoplasm that are derived from the megakaryocytes of the bone marrow, which then enter the circulation. Circulating inactivated platelets are biconvex discoid structures. Activated platelets have cell membrane projections covering their surface. Platelets are found only in mammals, whereas in other vertebrates, thrombocytes circulate as intact mononuclear cells.

Platelets, the smallest of our blood cells, can only be seen under a microscope. They are shaped like small plates in their non-active form. A blood vessel will send out a signal when it becomes damaged. When platelets receive that signal, they will respond by traveling to the area and transforming into their "active" formation. To make contact with the broken blood vessel, platelets grow long tentacles and then resemble a spider or an octopus.

Too many platelets, too few platelets, abnormally functioning platelets, and related conditions such as blood clots, strokes, and heart attacks can be inherited.

Cellometer X2 was used for PLT

150,000-450,000 microliters is normal

Placebo Group

Day-1	Day-30	Day-60	Day-90
266,800	266,350	282,400	277,500

Live Product Groups

262,501	255,461	274,800	254,146
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\*Totals reported are the average of the entire group

## AST

Aminotransferase (AST) is an enzyme that is present in a variety of tissues. An enzyme is a protein that helps trigger chemical reactions.

AST is found in the highest concentrations in the liver, muscles, heart, kidney, brain, and red blood cells. A small amount of AST is typically in your bloodstream. Higher-than-normal amounts of this enzyme in your blood may be an indication of a health problem. Above normal levels may be associated with liver injury.

AST levels increase when there's damage to the tissues and cells where the enzyme is found.

The AST test measures the amount of AST in your blood that has been released from injured tissue. An older name for the test is serum glutamic-oxaloacetic transaminase (SGOT).

AST test is used to check for liver conditions, such as hepatitis. It is usually measured together with alanine aminotransferase (ALT) According to liver specialists, abnormal ALT results are more likely related to liver injury than abnormal AST results.

Checkmarx was used for testing

5-40 IU/L normal

Placebo Group

Day-1	Day-30	Day-60	Day-90
23	23	21	22

Live Product Groups

22	25	23	24
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\*Totals reported are the average of the entire group

## ALT

Alanine transaminase is a transaminase enzyme. It is also called alanine aminotransferase and was formerly called serum glutamate-pyruvate transaminase or serum glutamic-pyruvic transaminase and was first characterized in the mid-1950s by Arthur Karmen and colleagues. ALT is found in plasma and in various body tissues but is most common in the liver. It catalyzes the two parts of the alanine cycle. Serum ALT level, serum AST

level, and their ratio are commonly measured clinically as biomarkers for liver health.

ALT is normally found inside liver cells. However, when the liver is damaged or inflamed, ALT can be released into the bloodstream. This causes serum ALT levels to rise. Many times, an increase in ALT is the first sign of a problem and is elevated before other symptoms start to appear.

Alanine Aminotransferase (SGPT Test) was used

7-55 IU/L normal

Placebo Group

Day-1	Day-30	Day-60	Day-90
30	30	30	30

Live Product Groups

31	31	31	30
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\*Totals reported are the average of the entire group

### ALP

The alkaline phosphatase test (ALP) is used to help detect liver disease or bone disorders. In conditions affecting the liver, damaged liver cells release increased amounts of ALP into the blood. This test is often used to detect blocked bile ducts because ALP is especially high in the edges of cells that join to form bile ducts.

Alkaline phosphatase is one kind enzyme found in the body. Enzymes are proteins that help chemical reactions happen.

We have alkaline phosphatase throughout our body, including your liver, digestive system, kidneys, and bones.

APL requires cytogenetic analysis, or the evaluation of chromosomes. Cytogenetic analysis can be done with several testing methods, including karyotyping, fluorescent in situ hybridization (FISH), immunostaining, and reverse transcription–polymerase chain reaction (RT-PCR).

44-147 IU/L is normal

Placebo Group

Day-1	Day-30	Day-60	Day-90
98	96	96	96

Live Product Group

90	95	94	96
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\*Totals reported are the average of the entire group

GGT

Gamma-glutamyl transferase (GGT), also known as gamma-glutamyl transpeptidase, is an enzyme that's found throughout the body, though it mainly occurs in the liver. An enzyme is a type of protein in a cell that acts as a catalyst and allows certain bodily processes to occur. There are thousands of enzymes throughout your body that have essential functions.

A gamma-glutamyl transferase (GGT) blood test measures the activity of GGT in the blood. GGT may leak into the bloodstream if the liver or bile duct is damaged, so having high levels of GGT in the blood may indicate liver disease or damage to liver's bile ducts.

GGT levels can also rise from administration of foreign materials such as medications (like phenobarbital, phenytoin or warfarin) or alcohol.

5-40U/L normal

Placebo Group

Day-1	Day-30	Day-60	Day-90
22	20	22	21

Live Product Groups

23	22	23	23
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\*Totals reported are the average of the entire group

## Creatinine

A creatinine blood test measures the level of creatinine in the blood. Creatinine is a waste product that forms when creatine, which is found in your muscle, breaks down. Creatinine levels in the blood can provide information about how well your kidneys are working.

Each kidney has millions of small blood-filtering units called nephrons. The nephrons constantly filter blood through a very tiny cluster of blood vessels known as glomeruli. These structures filter waste products, excess water, and other impurities out of the blood. The toxins are stored in the bladder and then removed during urination.

Creatinine is one of the substances that the kidneys normally eliminate from the body. High levels of creatinine may indicate that your kidney is damaged and not working properly.

0.59-1.35mg/dL normal

### Placebo Group

Day-1	Day-30	Day-60	Day-90
0.9	0.9	0.9	0.9

### Live Product Groups

0.9	0.9	0.9	0.9
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\*Totals reported are the average of the entire group

## HbA1c

Glycated hemoglobin, glycosylated hemoglobin, HbA1c, or A1c. test is used to evaluate a person's level of glucose control. The test shows an average blood sugar level over the past 90 days and represents a percentage. HbA1c is comprehensively used in the management of patients with diabetes. The two major schemes to standardize HbA1c produce values that differ substantially. A prospective, multinational study revealed a linear correlation between HbA1c and average blood glucose.

Hemoglobin is a protein only found in red blood cells. In fact, hemoglobin is what gives blood its bright red coloring. Since red blood cells live for about an average of three months, the A1c test will reflect those red blood cells that are present in the bloodstream at the time of the test; this is why the A1c serves as an average of blood sugar control.

The main job of hemoglobin is to carry oxygen from the lungs to all the cells of the body. Hemoglobin becomes glycated or coated with glucose from the bloodstream. The amount of glucose that is present in the blood will attach to the hemoglobin protein, and increased glucose levels will reflect on the surface of the hemoglobin protein, thereby rendering a higher A1c level.

### NGSP-approved method

Architect c4000 was used to test the samples

Up to 6 normal

5.6 is low

Above 9 is high

Placebo Group

Day-1	Day-90
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6.79	6.73
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Group 2

6.8	6.6
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Group 3

6.5	6.2
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Group 4

6.4

6.2

\*Totals reported are the average of the entire group

### Sodium (NA)

A sodium blood test measures the amount of sodium in your blood. Sodium is a type of electrolyte. Electrolytes are electrically charged minerals. They help control the amount of fluid and the balance of acids and bases (pH balance) in your body. Sodium also helps your nerves and muscles work properly.

135-145mE/L normal

Placebo Group 1

Day-1	Day-30	Day-60	Day-90
139.8	139.2	139.4	139.6

Live Product Groups

Day-1	Day-30	Day-60	Day-90
139.4	136.5	136.2	139.6

\*Totals reported are the average of the entire group

### Potassium (K)

A potassium blood test measures the amount of potassium in the blood. Potassium is a type of electrolyte. Electrolytes are electrically charged minerals that help control fluid levels and the balance of acids and bases (pH balance) in the body. They also help control muscle and nerve activity and perform other important functions. The body's cells, nerves, heart, and muscles need potassium to work properly. Potassium levels that are too high or too low may be a sign of a medical problem.

3.6-5.2mm/L normal

Placebo Group

Day-1	Day-30	Day-60	Day-90
4.4	4.4	4.4	4.4

Live Product Groups

Day-1	Day-30	Day-60	Day-90
4.4	4.4	4.4	4.4

\*Totals reported are the average of the entire group

Calcium (CA)

A calcium blood test measures the amount of calcium in the blood. If there is too much or too little calcium in the blood, it may be a sign of a wide range of medical conditions, such as bone disease, thyroid disease, parathyroid disorders, kidney disease, and other conditions.

Calcium is one of the most important minerals in the body. About 1% of the calcium in the body is in your blood. The balance is stored in the bones and teeth. Having the right amount of calcium in the blood is necessary for nerves, muscles, and heart to work properly. It also helps blood vessels move blood throughout the body and helps release hormones that affect many body functions.

0-35mm/L normal

Placebo Group

Day-1	Day-30	Day-60	Day-90
17.7	18.3	17.8	17.9

Live Product Groups

Day-1	Day-30	Day-60	Day-90
19.7	19.5	20.1	19.8

\*Totals reported are the average of the entire group

## Cognitive Testing

### MEM Trax

A cognitive test is a psychological test designed to measure a person's cognitive abilities and intellectual potential. These tests are used in many educational, employment, and clinical settings. The Mem Trax was developed to test the type of memory most associated with Alzheimer's disease and dementia.

The concept of cognition is the mental process by which knowledge is acquired and understood through the use of thought, experience, and the senses. It includes:

- Ability to think: The ability to think abstractly, reflect upon oneself, and solve problems
- Ability to remember: The ability to store and retrieve information from memory loss
- Ability to pay attention: The ability to focus on a task and block out distractions
- Ability to use language: The ability to understand and use spoken and written language
- Problem-solving: The ability to think abstractly, reflect upon oneself, and solve problems
- executive function: The ability to plan, organize, and execute tasks
- visual-spatial ability: The ability to perceive and interpret visual information

The MemTrax memory test measures the type of short-term memory most commonly related to Alzheimer's and dementia.

Mem Trax testing is calculated in percentages where for our study purpose scoring is:

- 90-100% above normal
- 80-90% normal
- 70-80% needs improvement

### Placebo Group

Day-1	Day-30	Day-60	Day-90
79%	79%	79%	79%

## Live Product Group

### Group 2

78%	80%	80%	80%
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### Group 3

79%	81%	82%	83%
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### Group 4

79%	82%	83%	84%
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\*Totals reported are the average of the entire group

## MMSE

The Mini-Mental Status Exam (MMSE) is a cognitive screening tool that provides a brief, objective measure of cognitive function. It can be used to screen for cognitive impairment, to estimate the severity of the impairment, and to document cognitive change over time.

The MMSE is the most widely used brief test of cognition in clinical and research settings. The MMSE tests multiple cognitive domains: orientation, repetition, verbal recall, attention and calculation, language, and visual construction.

The original MMSE (created in 1975!) can be vulnerable to poor inter-rater reliability. The Standardized MMSE (SMMSE) was developed in 1997 to provide exact scoring instructions with clear and unambiguous guidelines to administer the test, in order to increase reliability and reduce variability.<sup>[1]</sup> Of note, scoring of WORLD is different in the MMSE compared to the SMMSE

30 Points are Possible

25-30 is normal

21-24 mild dementia

Placebo Group

Day-1	Day-30	Day-60	Day-90
25	25	25	25

Live Product Groups

Group 2

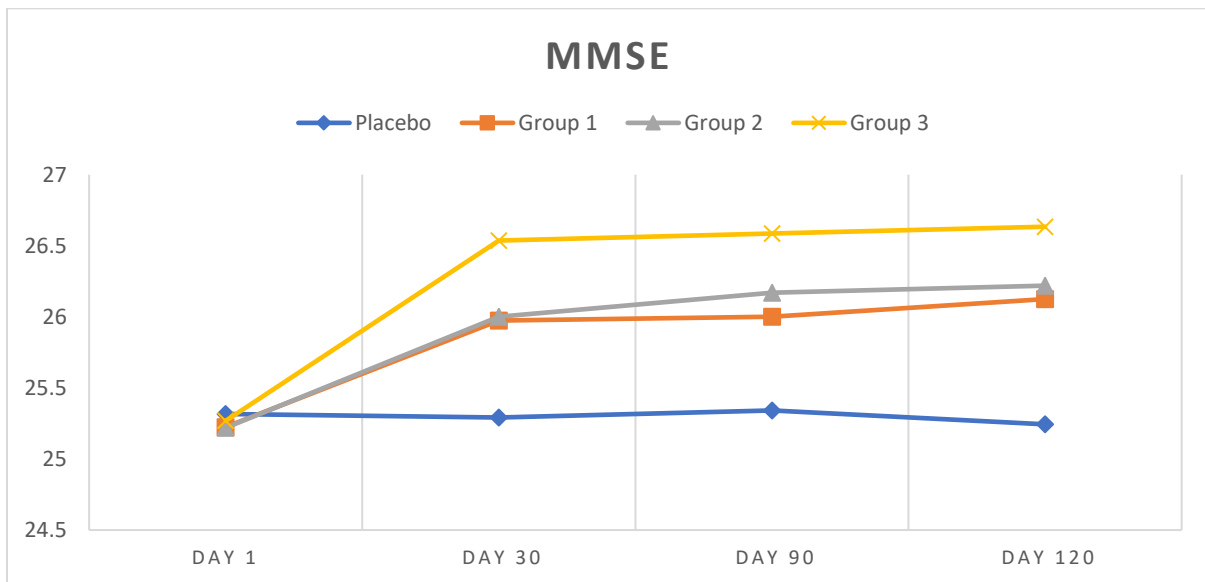
Day-1	Day-30	Day-60	Day-90
25	25	26	26

Group 3

25	26	26	26
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Group 4

25	26	26	27
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\*Totals reported are the average of the entire group

MoCA

MoCA also known as Montreal Cognitive Assessment or the MoCA Test is a brief, 30-question test that helps healthcare professionals detect cognitive impairments very early on, allowing for faster diagnosis and patient care. MoCA is the most sensitive test available for detecting Alzheimer’s disease, measuring executive functions and multiple

cognitive domains which are important components not measured by the MMSE.

From 1992 to 2000, MoCA went through many versions and adaptations before it was first validated in 2000 on a consecutive group of subjects that were referred to a memory clinic. All subjects were classified as cognitively intact or impaired based on a gold standard neuropsychological assessment. MoCA performance to distinguish the two groups was excellent.

In 2003, after analysis of the 2000 study results, a few elements of the test were optimized, and a new validation study was completed in 2003-2004, which confirmed the test's discriminatory ability to distinguish Normal controls, from subjects with Mild Cognitive Impairment or Mild Alzheimer's disease.

26-30 is normal

#### Placebo Group

Day-1	Day-30	Day-60	Day-90
26	26	26	26

#### Live Product Groups

##### Group 2

26	26	26	27
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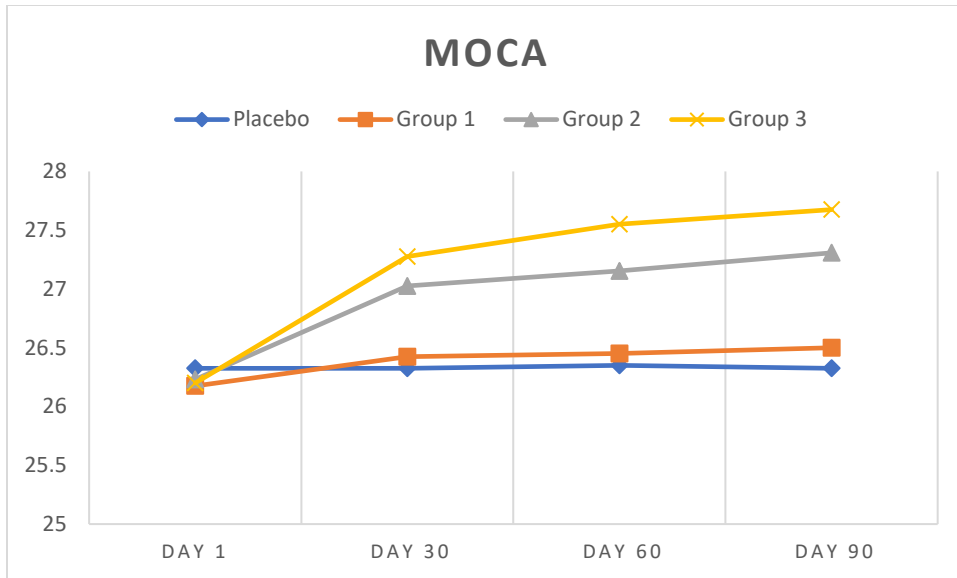
##### Group 3

26	27	27	27
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##### Group 4

26	27	28	28
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\*Totals reported are the average of the entire group



## Conclusions

Lifeflower®/Breviscapini was shown to be Safe and Effective during this study. There was no negative impact on any organs or systems measured during the course of this study.

No interactions, sensitivities, no side effects were observed nor complained of during the course of this study. The product was tolerated well by all subjects.

The most significant positive impacts were seen in the cognitive thinking tests that were given. The Mem Trax in Group 2 went from 78% on Day-1 to 80% on Day-90 and is a significant change in a positive direction. Group 3 went from 79% on Day-1 to 83% on Day-90 and this is a significant change in a positive direction. Group 4 went from a 79% on Day-1 to a 84% on Day-90 and is a significant change in a positive direction. All of these numbers were in the need's improvement area on Day-1 and moved into normal before Day-90.

MMSE for Group 2 on Day-1 was 25 and on Day-90 26, a positive change. Group 3 on Day-1 was 25 and on Day-90 26 a positive change. Group 4 on Day-1 was 25 and on Day-90 a 28 a positive change.

MoCA for Group 2 was 26 on Day-1 and 27 on Day-90. Group 3 was 26 on Day-1 and 27 on Day-90. Group 4 was a 26 on Day-1 and a 28 on Day-90.

- These numbers may seem like small changes but normally we see these numbers go down as we age not move back up into a healthier number. These are significant moves in a more positive and mentally healthy manner.

There were also some positive changes seen in A1c that I would like to see investigated further. Running another study for 12 months' worth of A1c testing provides more insight into its effects on blood sugar and its metabolism.

It is my recommendation that a 6–12-month study be completed for a deeper understanding of Lifeflower® Breviscapini positive impact on cognitive thinking and A1c in the long term.