

# Biochemical Analysis of Polyherbal Drug Sagajarathi Kasayam

P. Babypriya<sup>1\*</sup>, M. R. Sama Anjum<sup>2</sup>, S. Sujatha<sup>3</sup>

<sup>1,2</sup>PG Scholar, Department of Varma Maruthuvam, Government Siddha Medical College and Hospital, Palayamkottai, India

<sup>3</sup>Associate Professor, Department of Varma Maruthuvam, Government Siddha Medical College and Hospital, Palayamkottai, India

**Abstract:** Siddha system “Kumba vatham” correlated with the adhesive capsulitis in modern medicine. Adhesive capsulitis also known as frozen shoulder, an insidious painful condition of the shoulder persisting more than 3 months. This inflammatory condition that causes fibrosis of the glenohumeral joint capsule is accompanied by gradually progressive stiffness and significant restriction of range of motion. Females are 4 times more often affected than men, while the non-dominant shoulder is more prone to be affected. In Kumbamuni Vatha Nithanam-800 text, Sagajarathi kasayam are indicated for Vatha disease. Aim of the study is to record the biochemical analysis of the trial drug Sagajarathi kasayam. This study reveals presence of biochemical substances present in Sagajarathi kasayam which will be effective in treating the adhesive capsulitis.

**Keywords:** biochemical analysis, kumba vatham, adhesive capsulitis, sagajarathi kasayam.

## 1. Introduction

Siddha system “kumba vatham” correlated with the Adhesive capsulitis in modern medicine. Adhesive capsulitis also known as frozen shoulder an insidious painful condition of the shoulder persisting more than 3 months. The development is commonly described as progressing through 3 overlapping phases. Freezing – An initial, painful phase with predominant pain that is worse at night with gradually increased glenohumeral joint ROM restriction. Frozen –the second phase with stiffness and persisted glenohumeral joint motion limitation, but less pain than that at the Freezing stage. Thawing – the third (recovery) phase with the gradual recovery range of motion.

In Kumbamuni Vatha Nithanam-800 text, Sagajarathi kasayam is indicated for Vatha disease. So, Sagajarathi kasayam is taken into study for the research in Adhesive capsulitis.

## A. Source of Drug Ingredients

The required raw drug for preparations of Sagajarathi kasayam are purchased from a well reputed country shop. The purchased drug is authenticated by Expert members of Gunapadam department at GSMCH-Palayamkottai.

## 2. Methods of Purification and Preparations

All the ingredients have been completely purified as per the Siddha literature in the presence and knowledge of guide/faculty members. Then the trail drug is prepared from the ingredient.

### A. Biochemical analysis

Screening the drug Sagajarathi kasayam to identify the Biochemical properties present in the ingredient.

### B. Chemicals and Drugs

The chemicals used in this study were of analytical grade obtain from Department of Biochemistry, Government Siddha Medical College& Hospital, Palayamkottai.

### C. Methodology

5 grams of the drug was weighed accurately and placed in a 250ml clean beaker. Then 50ml of distilled water added to it and dissolved well. Then it was boiled well for about 10 minutes. It was cooled and filtered in a 100ml volumetric flask and then it is made upto 100ml with distilled water. This fluid was taken for analysis.

## 3. Results and Discussion

The bio-chemical analysis of the trial drug Sagajarathi kasayam was tabulated above in table.

Table 1  
Drugs included in Sagajarathi kasayam

S.No.	Drug	Botanical Name	Family	Part Used	Quantity
1.	Karunkurinji	<i>Ecbolium linneanum</i>	Acanthaceae	Root	600gm
2.	Devadaru	<i>Cedrus deodara</i>	Pinaceae	Bark	5gm
3.	Kottam	<i>Costus speciosus</i>	costaceae	Root	5gm
4.	Maramanjil	<i>Coscinium fenestratum</i>	menispermaceae	Tuber	5gm
5.	Athimathuram	<i>Glycyrrhiza glabra</i>	Fabaceae	Root	5gm
6.	Thippilimolam	<i>Piper longum</i>	piperaceae	Root	5gm
7.	Chitrarattai	<i>Alpinia officinarum</i>	zingiberaceae	Tuber	5gm

\*Corresponding author: babypriyabsms95@gmail.com

Table 2  
Qualitative analysis

S.No.	Experiment	Observation	Inference
01	TEST FOR CALCIUM 2 ml of the above prepared extract is taken in a clean test tube. To this add 2 ml of 4% Ammonium oxalate solution.	A white precipitate is formed	Indicates the presence of calcium
02	TEST FOR SULPHATE 2 ml of the extract is added to 5% Barium chloride solution.	A white precipitate is formed	Indicates the presence of sulphate
03	TEST FOR CHLORIDE The extract is treated with silver nitrate solution.	A white precipitate is formed	Indicates the presence of chloride
04	TEST FOR CARBONATE The substance is treated with concentrated HCl.	No brisk effervescence is formed	Indicates the absence of carbonate.
05	TEST FOR STARCH The extract is added with weak iodine solution.	Blue colour develops	Indicates the presence of Starch
06	TEST FOR FERRIC IRON The extract is acidified with Glacial acetic acid and potassium ferro cyanide.	No blue is formed	Indicates the absence of ferric iron
07	TEST FOR FERROUS IRON The extract is treated with concentrated Nitric acid and Ammonium thiocyanate solution.	Blood red colour is formed	Indicates the presence of ferrous iron
08	TEST FOR PHOSPHATE The extract is treated with Ammonium Molybdate and concentrated nitric acid.	No yellow precipitate is formed	Indicates the absence of Phosphate
09	TEST FOR ALBUMIN The extract is treated with Esbach's reagent.	No yellow precipitate is formed	Indicates the absence of albumin
10	TEST FOR TANNIC ACID The extract is treated with ferric chloride.	Blue black precipitate is formed	Indicates the presence of tannic acid
11	TEST FOR UNSATURATION Potassium permanganate solution is added to the extract.	It gets decolourised	Indicates the presence of unsaturated compound
12	TEST FOR THE REDUCING SUGAR 5 ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and add 8-10 drops of the extract and again boil it for 2 minutes.	Brick red colour is formed	Indicates the presence of reducing sugar
13	TEST FOR AMINO ACID One or two drops of the extract is placed on a filter paper and dried well. After drying, 1% Ninhydrin is sprayed over the same and dried it well.	Violet is formed	Indicates the presence of Amino acid
14	TEST FOR ZINC The extract is treated with Potassium Ferro cyanide.	No white precipitate is formed	Indicates the absence of zinc

The trial drug, Sagajarathi kasayam contains,

- 1) Calcium
- 2) Sulphate
- 3) Chloride
- 4) Starch
- 5) Ferrous iron
- 6) Tannic acid
- 7) Unsaturated compound
- 8) Reducing sugar
- 9) Amino acid

Mode of action of the trial drug Sagajarathi kasayam relieves the shoulder pain, stiffness, movement restriction due to the presence of calcium, sulphate, chloride, starch, ferrous iron, tannic acid, unsaturated compound, reducing sugar, amino acid in it.

#### 4. Conclusion

Sagajarathi kasayam is a Siddha Drug taken from a Kumbamuni Vatha nithanam-800 used in the treatment of Vatha disease. The drug is screened for its biochemical properties. Further, pharmacological analysis are needed to evaluate its potency which leads to pay way for further research.

#### References

- [1] T.Mohanraj, *Kumbamuni Vatha Nithanam-800*, 2021, A.T.S.V.S Siddha Medical college & hospital, Munjurai, Puthukadai.
- [2] T. Kannan Raja Ram & T. Monhanraj, *Varma Maruttvam*, 2017, A.T.S.V.S Siddha medical college and hospital, Munjurai, Puthukadai
- [3] Davidson, Principles and Practice of medicine, Elsevier publications, 2014, 22<sup>nd</sup> edition.
- [4] Harsh Mohan, Text book of Pathology, The Health Sciences Publishers, 2011, 7<sup>th</sup> edition.
- [5] K. S. Murugesu Mudaliar Siddha Materia Medica (medicinal plants division), 1<sup>st</sup> edition, 1936.