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ANTIUROLITHIATIC ACTIVITY OF SYNTHESIZED SILVER NANOPARTICLES OF *SARACA ASOCA* ON STRUVITECRYSTAL

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ABSTRACT

The biosynthesis of silver nanoparticles is mostly used in the research purpose because of its capability for environmentally friendly development. In general, the production of nanoparticles by various of chemical process which are not ecofriendly. The synthesis of silver nanoparticles using stem bark of *saraca asoca* extract was carried out. The ethanolic solution of 1mM silver nitrate (AgNo3) are treated with stem bark *Saraca asoca* extract, were incorporated within one hour. These nanoparticles are identified with fourier transform infrared spectroscopy (FITR), X-ray Diffraction (XRD), Scanning electron microscopy (SEM), UV- Visible spectroscopy, Energy dispersive X-ray spectrometer (EDX). The nanostructure shows the face centered cubic crystal by conformation of XRD result. The antiurolithiatic activity for showed better percentage of inhibition for the synthesize sliver nanoparticles by using stem bark of *saraca asoca.*

KEYWORDS: antiurolithiatic activity, *saraca asoca.*, nanoparticles.

INTRODUCTION

Nanotechnology is a science of very small structure that normally measure the structure less than 100 nanometers[nm]. 1 nanometer equal to one billionth of a meter, 0.000000001 or 10-9 meter. The father of nanotechnology is physicist richard feymann. He is introduced concept of nanotechnology in 1959. The nanotechnology found in the size below 100nm or 100 µm. In generally, the nanoscale size various between as the range of 1 to 100nm. If it is below 5nm matters properties differ vary largely when compared with large scale[K. D. Sattler 2010 and B. Hushan 2004]. Nanotechnology (or nanotech) is the use of matter on an molecular, atomic and macromolecular scale. Nanotechnology also used in medical technology and meterology, the meterology is the study of atomphere that the focuses on weather processes and forecasting. Nanotechnology, is the prospective field where on 50,000 articles in on nanotechnology became published worldwide yearly [C. Huang et al,. 2011].

The nanoparticles are also synthesis in biological method from on plant extract. The plant extract is a slow enzyme kinetics for crystal growth, catalytically activity and better manipulation. These are all controlled and also maintain stability. The research field, nanoparticles in upcoming field using small particles which has extensive properties. The most uses in nano product is nano silver. The nano silver biological properties is vary essential for medicinal application especially in drug delivery, kidney stone, diagnosis and other is consumer food product. The nanoparticles are small size with different properties compared large size particles.

The nanoparticles is synthesis in mainly two types chemical synthesis and green synthesis. The synthesis of nanoparticles such as co-precipitation, solid reaction, chemical reaction, microwave radiation, sol gel method. Nanoparticles size dependent on properties there are very important in some natural associated activities and human welfare. The nanoparticles size is less than 100 nm diameter are not present on the earth. So their presence is due to food cooking, phytochemical activity, vehicle exhausts. The noble metals are especially gold, silver, aluminum, copper, zinc, iron and platinum; palladium. These are all used in the synthesis of nanoparticles because these are all nano size.

The nanoparticles is synthesis in two types one is top down approach and another one is bottom up approach. The top down approach mean its breaking down bulk materials and the bottom down approach mean the building the nanomaterials. The top down approach is divided into three types. There are only used solid state

materials. The bottom approach is divided into four types and these are all used liquid and gaseous state materials.

The synthesis of nanoparticles in biological method, there are dependable, rapid, simple, green and produce high morphology well defined size.

crystals can able to form as small, hard mass, sometime they form into kidney stone. When there is a occurrence of oxalate, uric acid, calcium and cystine in great extent, the crystals forms into kidney stone. Lack of magnesium and citrate in human body which are responsible to prevent crystal formation, results to form kidney stones. The urine contains more acidic, alkaline, or more concentration is leads to the formation of crystals.

MATERIALS AND METHODS

Plant material collection

The bark of saraca asoca was collected from places Trichy district.

Fig 1: Saraca Asoca Plant

Fig 2: Saraca Asoca Bark.

Preparation of plant extract of bark of *saraca asoca*

The *saraca asoca* barks are collected and cut into a small size of pieces. The collected plant are totally washed with tab water and dried into shadow places that it is free from sunlight. The dark are dried nicely. The plant bark is crushed using the mortar and pestle. Then the powder was separated and the powder stored in air-tight containers and kept in cool, dark and dry place for further study. The extract is prepared using ethanol solution. The powder sample taken in 20g and the 40ml of ethanol is added and it is soaked for 24 hours. Then the extracted used in hot percolation method.

Phytochemical analysis

The phytochemical analysis of the bark extract of *saraca asoca* have based on the precipitation and coloration method.

Qualitative analysis

Test for saponin: To 1 ml of bark extract taken in test tube and added few drops of distilled water and shake well stable foam get persisted indicated the presence of saponins.

Test for tannin: About 1 ml of bark extract taken in a test tube and added few drop of distilled water and add 1 or 2 drops of ferric chloride is added. The appearance of blue black and brownish green shows the presence of tannin.

Test for terpenoid: To 1 ml of bark extract and add few drops of chloroform followed by after few minutes 1ml of concentration sulfuric acid. The presence of reddish brown shows the presence of terpenoid.

Test for phlovobatannins: About 1 ml of bark extract taken in a test tube and added the few drops of concentration of hydrochloric acid and appearance of red precipitate shows the presence of phlovobatannins.

Test for flavanoids: To the 1 ml extract and added 1 or 2 drops of concentration sulfuric acid. The presence of yellow that indicates presence of flavanoids.

Test for protein: About 1 ml of bark extract taken in a test tube and added few drops of concentration of sulfuric acid and the appearance of white the presence of protein.

Test for anthraquinone: To the 1 ml of extract added few drops of benzene and 1or 2 drops of ammonia solution. It appearance of violet or pink or red it presence of anthraqninone.

Test for cardiac glycosides: About 1 ml of bark extract taken in a test tube and add few drops of glacial acetic acid and shaken well and add the 1 or 2 drops of ferric chloride and followed by added the concentration of sulfuric acid is added. It obtained by violet or brown ring it shows the presence of cardiac glycosides.

Test for carbohydrates: To the 1 ml of bark extract taken in the test tube and added the few drops of ethanolic α-napthol and 1 or 2 drops of concentration of sulfuric acid is added. It shows the reddish pink or rings shows the presence of carbohydrates.

Test for xanthoproteins: About 1ml of bark extract and add the few drops of ferric chloride. It obtained the blue or black color shows the presence of xanthoproteins.

Test for leucoanthocyanin: To the 1ml of plant extract taken in the test tube and the few drops of isoamyl alcohol. It shows the red color the presence of leucoanthocyanin.

Test for phenol: About the 1ml of bark extract and add the 1 or 2 drops of ammonia solution. It obtained reddish colour or orange colour it shows the presence of phenol.

Test for emodin: To the 1ml extract and the add few drops of ammonia solution and followed by a add 1 or 2 drops if benzene. It appearance of red colour. It shows the presence of emodin.

Test for steroids: To the 1ml of bark extract add few drops of chloroform and added the 1 or 2 drops of concentration of sulfuric acid. It obtained the reddish brown colour shows the presence of steroids.

Test for anthocyanin: About the 1ml of bark extract taken in the test tube and add few drops of concentration of hydrochloric acid followed by an ammonia solution is added. It appearance pinkish red or bluish violet it indicates presence of anthocyanin.

Test for alkaloids: To the 1ml of extract and add few drops of glacial acetic acid solution and add 1 or 2 drops of ammonia solution is added. It indicates the yellow colour the presence of alkaloids.

Test for glycosides: To the 1ml of bark extract add few drop of chloroform and add 1 or 2 drops of glacial acetic acid is add. It appearance of violet or blue or green depend on plant, it shows the presence of glycosides.

Test for coumarin: To the 1 ml of extract add few drop of NaOH. it appearance of yellow colour it shows the presence of coumarin.

Quantitative analysis of phytochemical constituents present in plants: Quantification of phytochemical analysis of *saraca asoca* revealed the presence of flavnoids, phenol, terpenoids, alkaloids, saponins and phenol in mg/g.

Alkaloids: The spectrophotometer method is used to determined the alkaloids. The 2g of the dried powder is taken in a beaker by a mixing of 9ml of 10% of acetic acid in ethanol solution is added. The mixture is maintain at a room temperature. Then the above mixture is filtered. The filtrate is collected from the beaker and placed in a water bath. Because the filtrate is reduced to the original volume. After few minutes the beaker is allowed to cool and added concentration ammonium hydroxide solution is added. Till the precipitate is occur. After the precipitate occur the solution is discarded and precipitate is collected and the precipitate is washed with ammonium hydroxide solution and the filtered. The residue part is placed in watch glass and dried into a room temperature. After dried condition its weighed.

Phenols: The 3g of sample is taken in a dried powder condition. The sample is boiled in 10ml of diethyl ether for 10 minutes. After the boiling the mixture is taken in 2ml in a beaker and 1ml of distilled water is added. After the few minutes the small amount of concentration of ammonium hydroxide solution is added and 1ml of concentrated amyl alcohol is added to the mixture. The mixture is left to few hours because it react to colour development. The colour is developed and dried in a room temperature and after dried conditions the sample is measured in a spectrophotometer at 505nanometer wavelength.

Terpenoids: The sample is weighed 3g taken in a beaker and dissolved in a 10ml of alcohol for one day. The sample is filtrate using whatmann no.41 filtrate paper is used. Then the filtrate is dissolved in petroleum ether. The filtrate is dried to maintain room temperature after the dried condition is measured using of spectrophotometer.

Tannin: Spectrophotometer is used to determine to tannin solution. The 0.5g powder sample is weighed and taken in beaker. The mixture is dissolved in 10ml of distilled water was added and shaken in few minutes. Then the above is solution is filtered. The filtrate is taken in a test tube and added 1ml of 0.1M concentration ferric chloride in 0.1M concentration hydrochloric acid added and 0.008M potassium ferrocyanide. The mixture is dried at a maintain room temperature. The dried powder weighed using to spectrophotometer method.

Flavanoid: 3g of the powder sample is weighed and placed in a beaker. The solution is dissolved at a methanol at a room temperature. Then the above solution filtered and the filtrate is collected form beaker. The beaker is placed at a water bath after few minutes the solution is kept to dried condition. Then the sample is weighed using spectrophotometer.

Saponins: Spectrophotometer is used to determine the saponins. The 3g sample powder is taken in conical flask and dissolved in 2ml of ethanol solution and placed in water bath with continuous stirring. After the water bath the solution is maintain at room temperature. The solution is filtered and the residue is dissolved in ethyl alcohol again the placed in water bath because it reduce its volume. Then the solution is transferred to separation funnel and the 5ml of diethyl ether is added and shaken vigorously. After the shaken the kept into few minutes is not disturbed. Then the two layers are discarded. The separate the aqueous layer and added few drops of n-butanol and add a few drops of 5% NaCl and again

placed in hot water bath. After the solution is evaporation the sample is dried using a oven and measured the weight.

Synthesis of silver nanoparticles: The weighed 5mm silver nitrate to the 50ml of 5mm silver nitrate with constant and continuous stirring. The mixture is a react an a environmental condition and silver get reduced in Ag+ ion. After few minutes the colour changes are observed. The colour changes is transparent white to dark brown. That is shows the formation of silver nitrate. The formation of silver nitrate that is Ag+ ion was confirmed by the UV- spectral analysis.

Characterization of silver nanoparticles: The particle wavelength and functional group characteristic are found be used on characterization of synthesized nanoparticles. There are bound to silver nanoparticles by FTIR and UV-Visible spectra and crystalline nature, morphology and its size and elemental composition using XRD, TEM, EDAX and DLS.

UV-Visible spectroscopy: The ultra violet visible spectroscopy spectrophotometer using the optical properties of silver nanoparticles. The plant extract are taken and added to a silver nitrate. After 24hours only the addition of plant extract to take the UV visible spectroscopy. The ultraviolet-visible spectroscopy absorbed by the range of 350-500nm.

X-Ray diffraction: The x ray diffraction is used to characteristic the crystalline structure,grain size and nature of the crystal at silver nanoparticles.

FT-IR: The fourier transform infrared spectroscopy is used to study the synthesized silver nanoparticles functional group. The FT-IR range absorbed between the 4000-400cm-.

Scanny electron microscope (SEM) and EDX analysis: The morphology and size of silver nanoparticles were evaluated using SEM analysis. The scanny electron microscope image are confirmed the development of silver nanoparticles. The elements of sample and composition of green synthesis silver nanoparticles are evaluated the using of EDX.

Dynamic light scattering: The DLS is used to determine the structure of the particle size and size distribution of synthesis silver nanoparticles.

Struvite crystals growth and their characterization: The single diffusion reaction technique was employed (chandrabhan seniya et al., 2011). The crystal growth of sample is used reactants are 0.5M ammonium dihydrogen phosphate ADP) and added to sodium meta silicate solution with the side of test tube and the density of 1.04g/cm3 and it contains the PH level is 9.4 then the mixture pH level are maintained at range of 6. The gel is formed and closed with airtight stoppers and the gel is undisturbed 4 to 5 days. After few days the gelation process, the 1 molarity of magnesium acetate was added in gel test tubes without disturbing gel. After the added solution, its kept at room temperature at (37c) carried out the full experiment. the structures and compounds of the crystals were characterized using FTIR. The FTIR is using to verify the growth of crystal. The best spectrophotometer was used in FTIR is HITACHO 570 FTIR spectrophotometer. This method to obtain the purity and proper formation of crystals.

Struvite crystals growth and the classification of different additive solution: To study the *saraca asoca* bark extract is using ethanol extract to growth on struvite crystal by using gel method. The table 1 absorbed at magnesium acetate solution were added to the gel and results are maintained.

RESULT AND DISCUSSION

The phytochemical constituent presents of *saraca asoca*bark extract make of use various tests quality shown in Table 2.shows the *saraca asoca* bark extract reveal the presence of terpenoid, flavanoid, tannin, alkaloids, steroids, coumarin, emodin, anthroquinone, xanthoproteins, phenol, saponin, glycosides, phlobatannins, anthocyanin, carbohydrate, lawanthocyanin, cardicglycosides these are all have medicinal and physiological activities while protein were absent. The qualitative analysis of bark extract of*saraca asoac* shows the presence of phytochemical constituents is revealed the primary responsible for their biological activity.

The preview report suggest that the qualitative analysis of *saraca asoca* plant extract present in the flavonids, alkaloids, protein, steroid, glycosides, and terpenoids. In these glycosides(45mg/g) have high amount in the plant extract followed by tannin(42mg/g) is high amount in the plant extract. The *saraca asoca* plant extract shows the prevention of cytotoxicity and radical scavenging and also antioxidant activity. (Rex dab and B. Ragavan 2014).

4.1 QUALITATIVE ANALYSIS

Table 2: Qualitative analysis of bark of *saraca asoca.*

Test no	Test for	Observation	Result
1	Terpenoid	Reddish brown	+++
2	Flavanoid	Yellow colour	+++
3	Saponin	Blue colour	+++
4	Tannin	Brownish green	+++
5	Alkaloids	Yellow collour	+++
6	Steroids	Reddish brown	+++
7	Glycosides	Violet, blue	+++
8	Phlobatanins	Red precipitate	++
9	Protein	White	+++
10	Coumarin	Yellow	+++
11	Emodin	Red	++
12	Anthroquinone	Pink, Violet	+++
13	Anthocyanin	Pinkish red, Blusih violet	+++
14	Carbohydrate	Reddish pink	++
15	Lawanthocyanin	Red	+++
16	Cardiacglycosides	Brown ring / Violet	+++
17	Xanthoproteins	Blue /black	+++
18	Phenol	Reddish / orange	+++

+ - Trace ++ - Moderate +++ - Strong A – Absence+

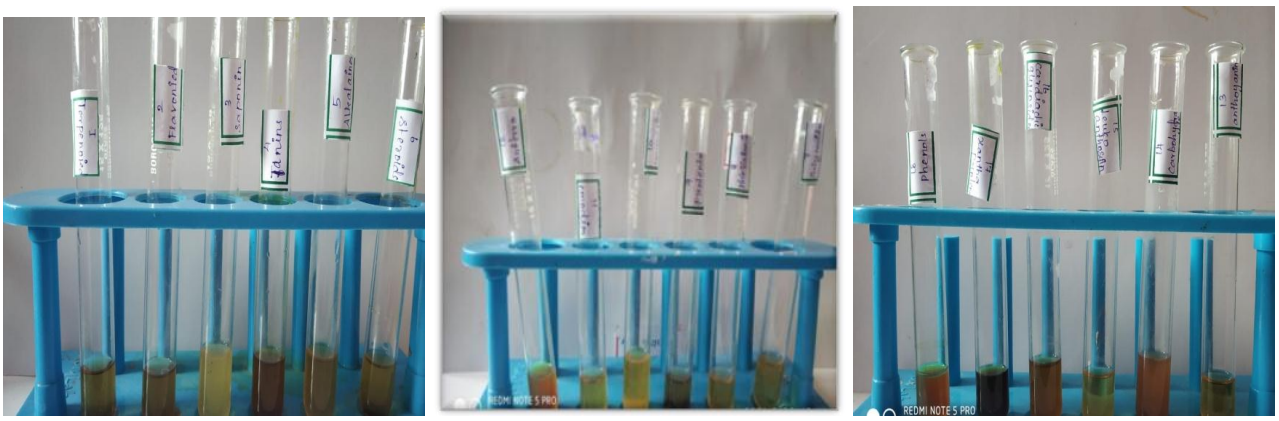


Fig 4: Qualitative analysis of bark of *saraca asoca.*

4.2 Quantitative analysis of bark of *saraca asoca*.

The phytochemical consists screening the quantitative analysis of *saraca asoca* bark extract was various amount have been reported. The higher quantity present in bark extract is saponin followed by tannin, phenol, flavonoids, terpenoids, and alkaloids show the table 3. The compositions of phytochemical constituents are saponin (0.018mg/g), tannin (0.017mg/g), phenol(0.005mg/g), flavonoids (0.004mg/g), terpenoids (0.003mg/g), and alkaloids (0.002mg/g).

Table 3: Quantitative analysis of *saraca asoca* bark.

S. NO	Phytochemical constituents	*Saraca asoca* bark (mg/g)
1	Saponin	0.003
2	Alkaloids	0.005
3	Flavonoids	0.006
4	Phenol	0.004
5	Terpenoids	0.005
6	Tannin	0.004

Previous study explained the phytochemical quantitative analysis of *saraca asoca* plant extract was quantitative analysis of saponin, tannin and phenol are high amount phytochemicals compared to the other the water, acetone and chloroform. These are used to antioxidant activity. The phenolic compounds most involved in the anti oxidant and anti-tumor activity. The flavonoids shows the major role of cytotoxicity activity and free radical scavenging activity. (Rex dab, B. Ragavan 2014).

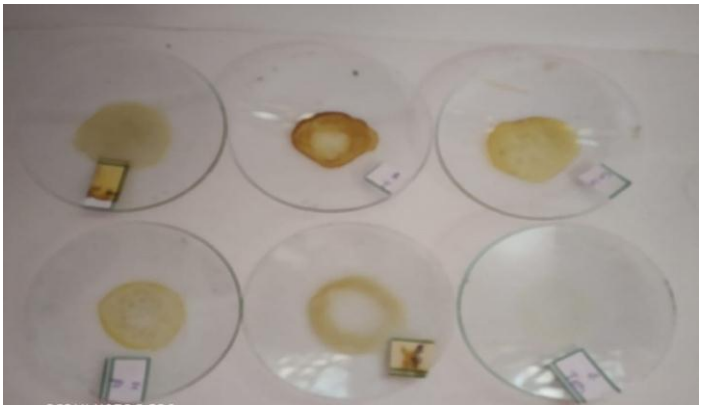


Fig 5: Quantitative analysis of *saraca asoca* bark extract.

In vitro antiurolithiatic activity of *saraca asoca* bark: The crystallization and nucleation characteristics of effect of bark of *saraca asoca* in struvite crystals is determined by evaluating the formed crystal weight. The crystal growth is developed by gel method. The gel method consist the control using the magnesium acetate results shows the high yield of crystal growth. The nucleation takes place within 24 hours. Followed by adding the synthesized silver nanoparticles (supermatant solution) in the presence of *saraca asoca* bark. After the nucleation, the addition of synthesized Ag+ nanoparticles the reduced masses and delayed nucleation of crystal observe within 96 hours. The inhibition shown in fig.

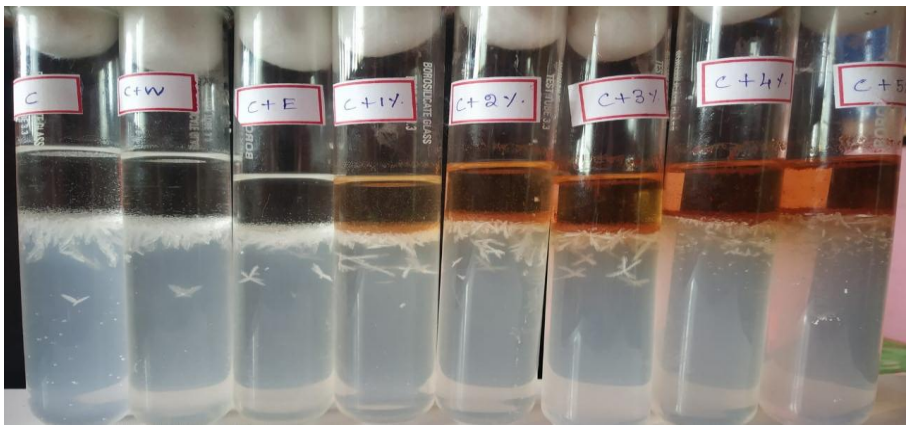


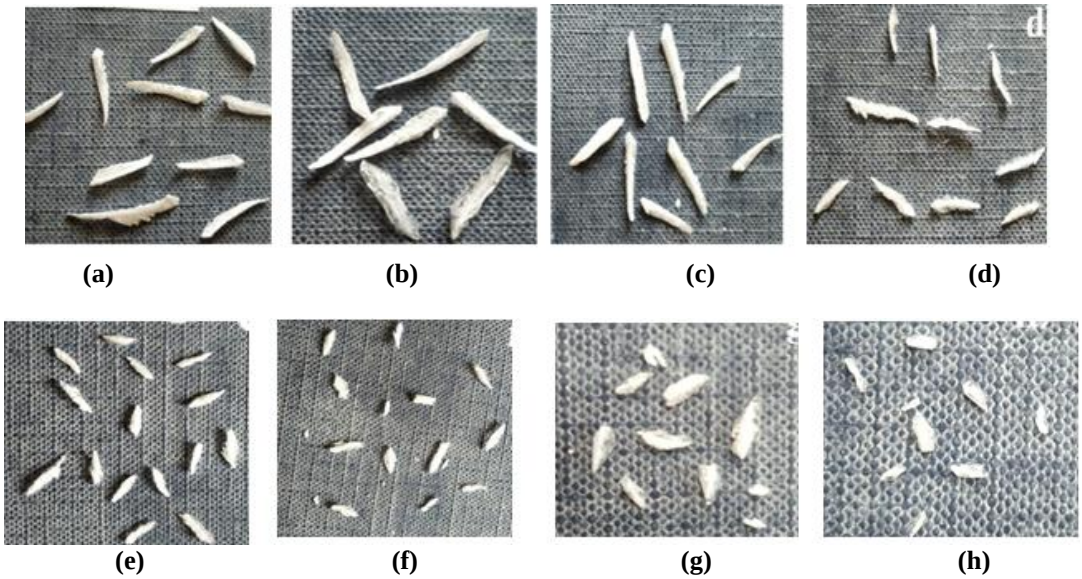
Fig 6: Growth of chpd crystal.

(Pure control, With distilled water, With ethanol, With 0.15% extracts, With 0.25% extracts, With 0.50% extracts, With 0.75% extracts, With 1.0% extracts)

Table 4: Harvested crystals percentage inhibition.

Crystal	Class	Analysis	Harvested crystals (gm)	Inhibition Percentage
Struvite	A	Control	2.46	0%
	B	Control +distilled water	2.12	13.8%
	C	Control + ethanol solution	1.48	39.8%
	D	Control + 1% synthesized silver nanoparticles	1.26	48.7%
	E	Control + 2% synthesized silver nanoparticles	0.85	65.4%
	F	Control + 3% synthesized silver nanoparticles	0.69	71.9%
	G	Control + 4% synthesized silver nanoparticles	0.47	80.8%
	H	Control + 5% synthesized silver nanoparticles	0.25	89.8%

The above studies shows the struvite crystal growth was decreased becaused of inhibitory effect of bark on *saraca asoca* in-vitro conditions. From this study, the realize the distilled water has no inhibitory activity with respect to crystal growth.

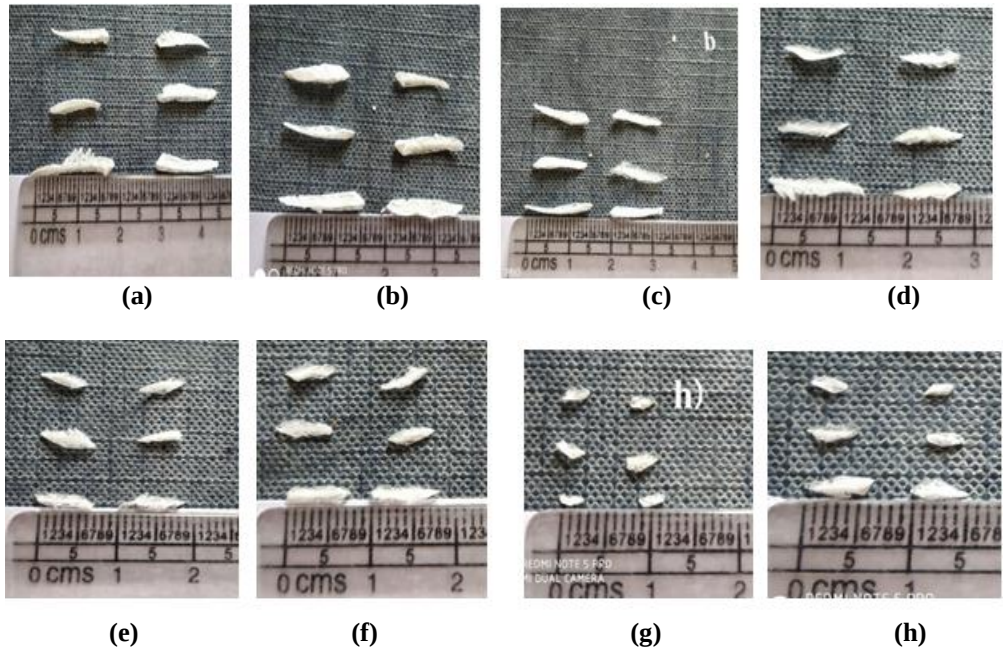


(a) (b) (c) (d)

(e) (f) (g) (h)

(a) Pure control (b) With distilled water (c) With ethanol (d) With 0.15% extracts
(e) With 0.25% extracts (f) With 0.50 % extracts (g) With 0.75% extracts (h) With 1.0% extracts.

Figure 7: Morphology of harvested CHPD Crystal.



(a) (b) (c) (d)

(e) (f) (g) (h)

(a) Pure control, (b) With distilled water, (c) With ethanol, (d) With 0.15% extracts, (e) With 0.25% extracts, (f) With 0.50 % extracts, (g) With 0.75% extracts, (h) With 1.0% extracts.

Figure 8: Scale measurement of harvested of CHPD crystals.

FT-IR study of harvested crystals

Visual color change and UV-Vis spectroscopy

In this experiment, addition of ethanol extract of sample in to the glass vial containing $AgNO_3$ led to the change in color from colorless to reddish brown indicates the presence of silver nanoparticles. Plasma resonance band was observed by UV spectra at the range of 460 nm (fig. 9).

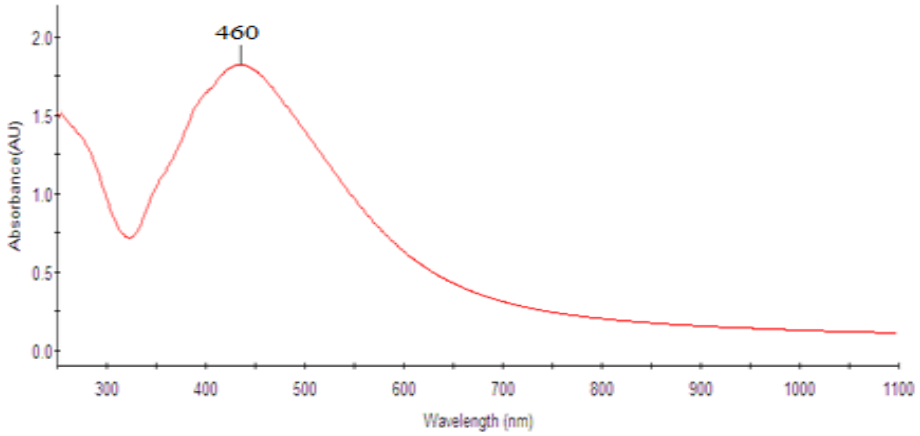


Fig. 9: Uv-Vis Spectrum Of Synthesized Silver Nanoparticles Using.

Functional group determination using FT-IR spectroscopy.

FT-IR spectroscopic studies were carried out to find out possible bio-reducting agents present in the synthesized AgNPs used (figure 2). It is confirmed the fact that to identify the bio molecules for reduction an efficient stabilization of the metal nanoparticles, the band at at 3434.81cm^{-1} O-H stretching of polyphenol group. The band at 2926.70cm^{-1} assigned to strong broad N-H stretching of amine salt group. The band at 2851.02cm^{-1} were assigned to =C-H stretching shifted of aldehyde and alkanes group. The band at 2354.cm^{-1}, 2050.10cm^{-1}, assigned to the C≡C stretching modes of alkyne groups. The band at 1634.39cm^{-1} weak bond C-H bending aromatic compounds. The band at 1411.18cm^{-1} to 1385.13cm^{1} NO_2 stretching strong. The band at 1270.72cm^{-1} to 1114.92cm^{-1} assigned to presence of C-H stretching alkyl halides. The intense band at 1027.19cm^{-1} can be assigned to the C-N stretching of aliphatic amines. The band at 618.33cm^{-1} assigned to C-Cl strong stretching of alkyl halide group.

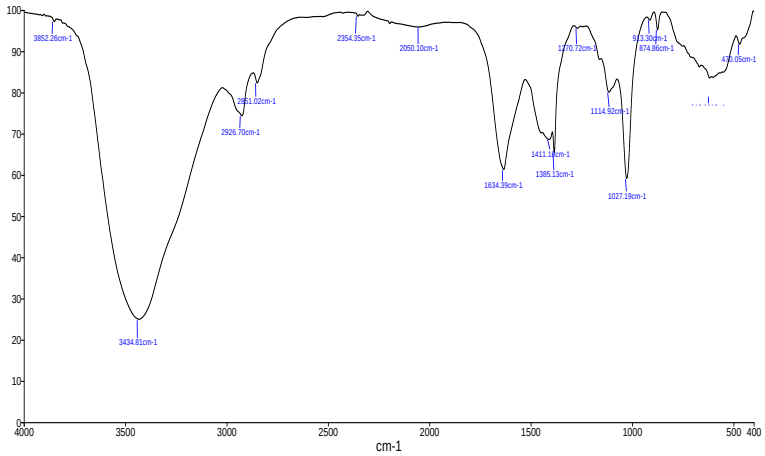


Fig.10: Ftir Spectrum Of Synthesized Silver Nanoparticles.

X-ray diffraction (XRD)

The XRD spectrum was recorded to confirm the crystalline structure of synthesized AgNPs using sample. The diffraction peaks were obtained by stem bark-AgNPs is observed at 38.45, 46.35, 64.75 and 78.05 in the 2Ɵ range (fig.3a). The peaks can be indexed to the (111),(200),(220) and (311) reflection of face centered cubic structure of metallic silver which suitably matched the standard diffraction data with those reported for silver by joint committee on powder diffraction standards (JCPDS) FILE NO :040783.

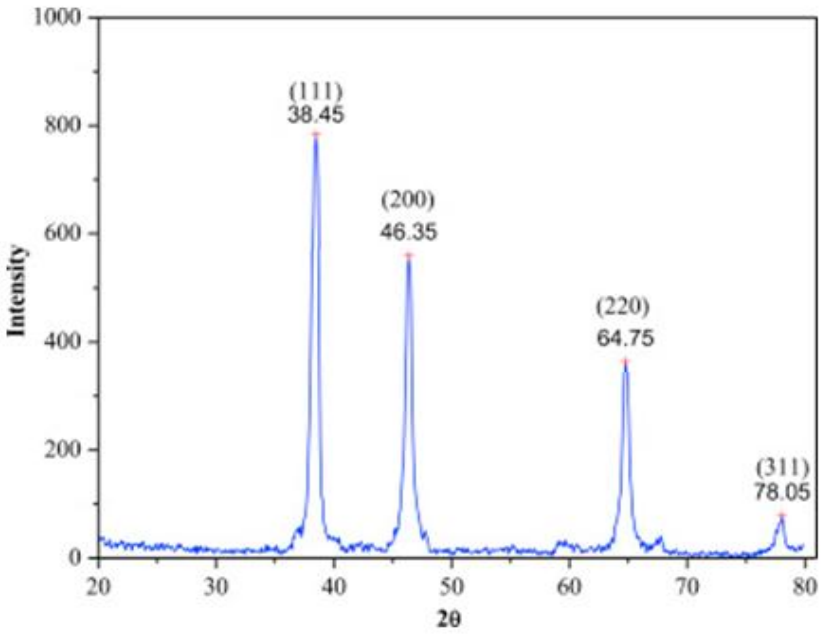


Fig.11: Xrd Analysis of Synthesized Silver Nanoparticles Using.

SEM image

The SEM image is employed to predict the size and morphology of resultant silver nanoparticles using sample. The size (diameter) of the nanoparticles lie between 82.34-90.99 nm region in case of stem bark-AgNPs (fig. 4) the average size of the nanoparticles is ~ 200 nm, whereas the shapes were spherical and cubic.

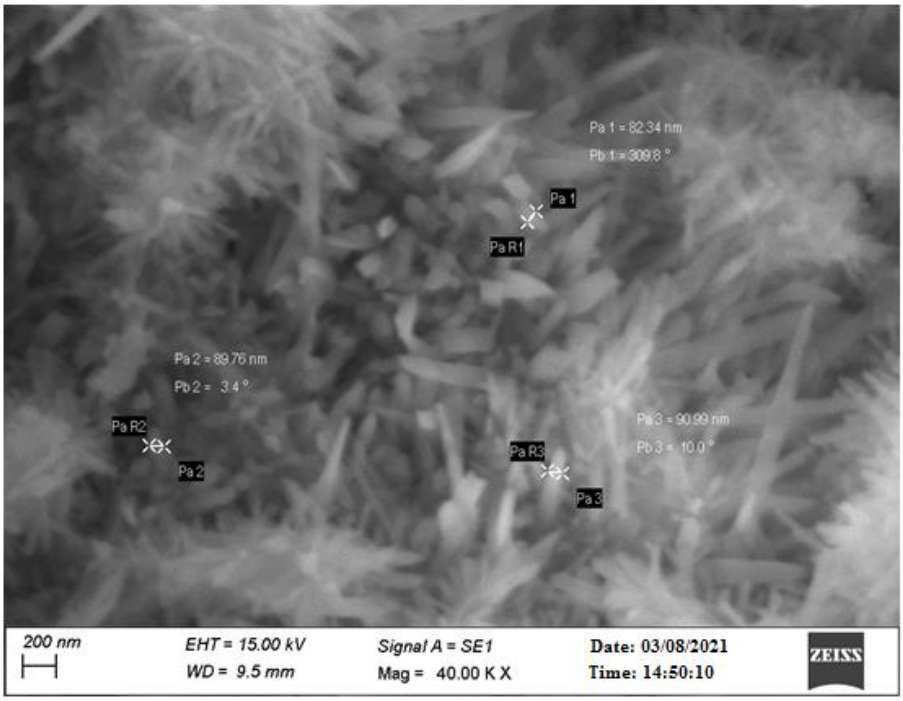


Fig 12: Sem Photograph Of Synthesized Silver Nanoparticles Using.

EDX analysis

Energy dispersive X-ray (EDX) spectrometer analysis confirmed the elemental signal of silver nanoparticles. The Y-axis (vertical) represents the number of X-ray counts while X-axis (horizontal) shows the energy in KeV. EDX spectrum recorded for the silver nanoparticles was shown in Fig. 5 with additional peak of oxygen because of biomolecules attached to the silver nanoparticles surface. From EDX spectra, it is found that silver nanoparticles are reduced by *SAMPLE* have the silver weight percentage as 45.81% (Table 5).

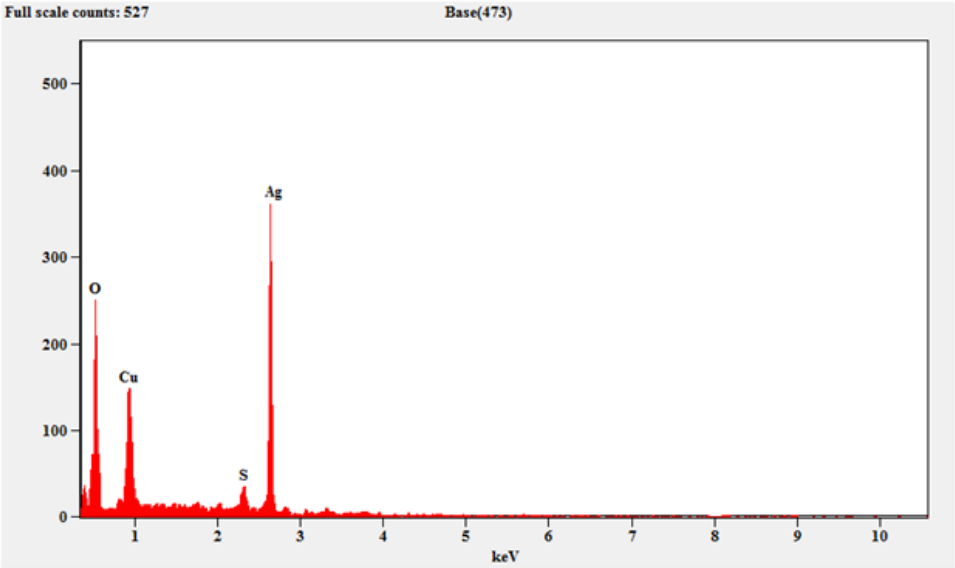


Fig: 13 EDX Spectrum of Synthesized Silver Nanoparticles.

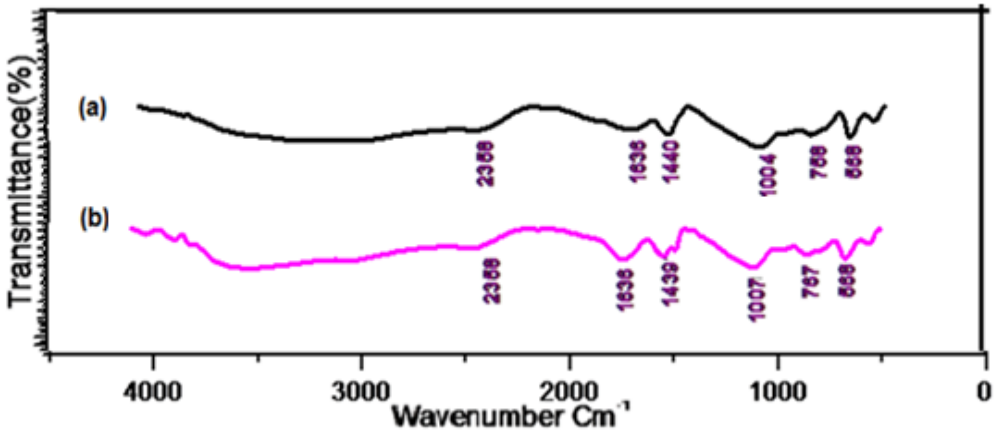
Table 5: Elemental composition of synthesized silver nanoparticles.
FTIR for harvest struvite crystal.

Element	Wt%	At%
O	24.82	25.29
Cu	18.14	12.25
S	11.23	3.44
Ag	45.81	59.02

Harvested struvite crystals
The FT-IR spectra of struvite crystals obtained in the presence and absence of the plant sample are given in the table 7.

Figure	Frequency cm-1	Functional group
	2358	Anti symmetric and symmetric stretching Vibration of NH4 units
	1636	HOH deformation of water
	1440	HNH deformation of NH4 units
	1004	V3 antisymmetric stretching vibration
	758	Librational of water and NH4 rocking modes
	568	V4 bending modes of the PO4 units

Figure	Frequency cm-1	Functional group
Control +5%	2374	Anti symmetric and symmetric stretching, vibration of NH4 units
	1600	HOH deformation of water
	1438	HNH deformation of modes of NH4 units
	1004	V3 antisymmetric stretching vibration
	758	Liberation of water and NH4 rocking modes
	568	V4 bending modes of the PO4 units



Some of the researcher said that characterization crystallization of struvite crytal FTIR techniques. The peaks move from 2358 to 2374 cm-1 antisymmetric, symmetric stretching and vibration of NH4 units and from 1440 to 1438 cm-1 for hnh defromaion of modes of NH4 units already reported. The shifting additionly supports that the extract can further formation of ammonium magnesium phosphate crystals and their reduce the nucleation rate of struvite crystal.

CONCLUSION

The aim of green synthesis of silver nanoparticles gives an replacement thorough for minimizing the hazardous effects create by chemical and physical method. The phytochemical qualitative analysis showed the presence of following phytoconstiuents like Terpenoid, flavanoid, tannin, alkoids, steroids, coumarin, emodin, anthroquinone, phenol, xanthoproteins. The phytochemical quantitative analysis revealed the various phytoconstiuents like alkaloids, flavonoids, phenol, terpenoids, tannin, saponin were isolated and weighed. The synthesized silver nanoparticles are characterized by using UV-Visible spectroscopy and peak intensity is observed by 447 nm. The plant extract and silver nanoparticles revealed the presence of functional groups under the characteristic of FTIR analysis. The synthesized silver nanoparticles are present in the cubic and spherical in shape its shows the result given SEM analysis. The EDX analysis shows the conformof the elemental signal in synthesized silver nanoparticles. The XRD analysis used to determine the crystalline nature of the silver nanoparticles. In conclusion, the result revealed that *saraca asoac* bark extract as the good yield of inhibitor for struvite kidney stones.

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