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Isolation and Molecular Characterization of Ocular Pathogens from Babies and its Antibiogram Activity Analysis from Seagrass of *Arthrocnemum indicum*

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A B S T R A C T

Microscopic organisms are the significant giver of visual diseases around the world. Visual contaminations, whenever if not treated, can harm the designs with regard to the eye conceivable visual impairment as well as visual impedances. The seagrass *Arthrocnemum indicum* was gathered from intertidal locale of the Manora, Thanjavur District, Pattukottai Taluk and its phytochemical, antimicrobial and Antioxidant prevention agent potential not entirely settled. The ethanol separate showed the most elevated phytochemical than different concentrates. The antimicrobial action likewise shows the most noteworthy hindrance than different concentrates. The ethanol extricates showed the most noteworthy 2,2 diphenyl-1- picrylhydrazyl (DPPH) The near cancer prevention agent investigation of the resulting concentrate of *Arthronemum indicum* showed that the ethanol extricate has the most elevated free extremist rummaging property contrasted with different concentrates. This might be because of the presence of high phenolic compounds. The studies draw out the collection of Ocular pathogens from patient's and molecular identification of Ocular pathogens from baby samples and restorative worth of *Arthronemum indicum* which can be utilized as a nutraceutical compound in different food and drug businesses.

***Key words*:** Ocular pathogens, Molecular identification, *Arthrocnemum indicum,* Phytochemical, Antimicrobial, Antioxidant

The justification behind this study was to survey strangely the phytochemical constituents, what's more, the natural three properties (Ethanol, $CH_3)_2CO$, and hexane) *Arthrocnemum Indicum* (Willd.) Moq. (*A. indicum*) eliminates. Quantitative examination exposed the on a very basic level ($p < 0.05$) prevalence of ethanolic elimination on outright TPC contains more polyphenol (303.67 4.16 mg GAE/g DR) and flavonoid (TFC; 55.33 2.52 mg CE/g DR) than TFC various concentrates, in like manner showing high and balanced merged tannin content (TCTC) as the CH3)2CO eliminate [1]. With an expansion in the absence of illness obstruction also, antagonistic impacts of engineered drugs, it has become fundamental to investigate our conventional utilization of medication, what's more, look for a characteristic compound that can go about as a drug or steady specialist to treat different infections. In this way, the quest for a novel, strong regular compound from marine angiosperm is the most ideal for this reason. The marine angiosperms are hydrophytes that develop and finish their lifecycle in a totally lowered saline environment [2]. Since their natural surroundings is in the focused-on climate, they can deliver primarily assorted auxiliary metabolites, for example, alkaloids, phenols, flavonoids, terpenoids, tannins, steroids, etc. These auxiliary metabolites were demonstrated to act as medication and supplement against different human infections. Contrasted with green growth, seagrasses stay less taken advantage of in spite of the way that they offer colossal chances to see as new financially significant phytochemicals [3]. In this study, eye swabs collected from patients and identified an ocular pathogen from infant's eye swabs and then the seagrass *Arthrocnemum indicum* has been picked, what's more, defended for customary use as medication for microbial activity as it has cancer prevention agent potential.

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MATERIALS AND METHODS

Eye swabs collection

The 100 eye swabs tests were gathered from patients in Kauvery specialty clinic, Cantonment, Trichy area, Tamil Nadu, India from May 2019-May 2020 by Dr. Vinitha Rachel Philip, Ophthalmologist.

Sample collection [4]

An effective sedative was applied to the eye and the sedative impact permitted creation over a time of 2-3 minutes. Utilizing a glass pen, the patient number was composed on the exchange medium. With the lower cover withdrawn, a sterile q-tip soaked with clean saline was pivoted along the lower tarsal conjunctiva. The cleaned eye test was vaccinated in a culture medium and refined at 37°C for 3-5 days prior to being distinguished utilizing Molecular characterization.

Molecular characterization of fungal and bacteria isolates

An altered organism DNA extraction strategy was utilized to separate DNA from growths the microscopic organisms developed in Nutrient stock by adding the unadulterated culture in the 250 ml funnel-shaped carafes containing 100 ml of the medium. The carafes were hatched at 37±2° C for 24 hours with shaking. An adjusted CTAB strategy for microorganisms DNA extraction technique was utilized to seclude DNA from microscopic organisms [5]. The sequencing response was carried out at Eurofins Genomics in Bangalore using ABI large colour cycle sequencing Biosystems responses (Applied Biosystems).

Data analysis

The new DNA groupings were perceived using the BLAST programming gadget (NCBI, USA). The groupings were put away in the NCBI. The DNA groupings that showed the most outrageous likeness to address progressions were picked and MEGA 7.0 was used for analysis (Molecular Evolutionary Genetics Analysis) for phylogenetic assessment. The phylogenetic tree was delivered considering the Neighbor-Joining Method.

Plant collection and identification

New leaves of *Arthronemum indicum* were gathered from the Manora, Thanjavur District, Tamil Nadu, India and ordered distinguishing proof of the gathered plant material was affirmed at Department of Botany, St. Joseph's College, Tiruchirappalli. The leaves were flushed with twofold refined water, trailed by openness to 0.1% mercuric chloride arrangement. The leaves were then concealed dried for a time of about fourteen days. The dried leaves were powdered and put away for additional examination.

Preparation of extracts

Soxhlet extraction of the plant materials was completed with three solvents in particular hexane, methanol and water. 50 grams of the powdered plant material was pressed in Whatman No.1 channel paper and were extricated independently with 300 ml of the solvents for 48 hours. The concentrates were then aggregated at room temperature and put away at 40°C for additional utilization.

Phytochemical screening of the extracts

The picked extricates were screened subjectively for the presence of different bioactive mixtures by utilizing a standard convention concocted by Evans [6].

Antimicrobial activity

Antibacterial activity

The antibacterial action of the concentrates was tried against six bacterial strains viz., Streptococcus *pneumoniae, Haemophillus inflenzae, E. coli, Klebsiella sp., Staphylococcus aureus* and *Pseudomonas aeruginosa*. Standard well dispersion technique [7]. Utilizing Muller Hinton agar was performed and the plates were brooded at 37°C for 24 hours.

Antioxidant activity

The capacity of the concentrates of *Arthronemum indicum* to search 1, 1-diphenyl-2 picrylhydrazyl is still up in the air by the detailed strategy [8]. Ascorbic corrosive was utilized as standard and the dissolvable was filled in as clear. Test tests were taken at various focuses (100, 200, 300, 400, and 500µg/ml). DPPH reagent was added to the test tubes and they still up in the air at 517 nm [9].

Computation

% Cancer prevention agent action = {(Absorbance at clear) — (Absorbance at test) / (absorbance at blank)} × 100

RESULTS AND DISCUSSION

As we already stated above there were 100 samples collected at Kauvery specialty clinic, Cantonment, Trichy area, Tamil Nadu, India with the great support of Dr. Vinitha Rachel Philip, Ophthalmologist. The complete sample details were detailed below in the (Table 1).

Table 1 Sample collection from eye infected patient

Sl.No	Order No.	Date	Specimen	PATIENT ID	NAME
1	IG706195	03-05-2019	EYE SWAB	CN220000414619	BabyHanshana K,1Y/F
2	IG707036	04-05-2019	EYE SWAB	CN210000413109	Master.Siddathi M,1Y/M
3	IG707905	05-06-2019	EYE SWAB	CN220000414841	BabyThanu Sri,6Y/F
4	IG708437	06-07-2019	EYE SWAB	CN210000405871	Mr.Mathivanan R,69Y/M
5	IG709025	06-07-2019	EYE SWAB	CN220000414972	Mr.Balu P,55Y/M
6	IG709525	07-08-2019	EYE SWAB	CN210000410280	Baby .Kanimozhi Dakshinamoorthy
7	IG710024	07-08-2019	EYE SWAB	CN220000415071	Mr.Rasu A,40Y/M
8	IG710740	09-09-2019	EYE SWAB	CN220000414997	Mrs.Malar Kodi,60Y/F
9	IG711659	10-10-2019	EYE SWAB	CN210000406119	Mr.Karuppiah R,72Y/M
10	IG711676	10-10-2019	EYE SWAB	CN220000415408	Mr.Prabu,27Y/M
11	SO249596	06-11-2019	EYE SWAB	CN210000413516	Ms. Jai Keerthana, 23Y/F, W/O. Sundararaju.
12	SO251324	01-01-2020	EYE SWAB	CN200000372364	Mr. Subramaniyan. R, 75Y/M, S/O. Ramasamy.
13	SO251373	02-02-2020	EYE SWAB	CN210000412956	Mrs. Seethalakshmi G, 74Y/F, W/O. Kasiviswanathan N.
14	SO251697	05-03-2020	EYE SWAB	CN220000414803	Mrs. Subha, 42Y/F, W/O. Uma Maheswaran.
15	SO252064	07-04-2020	EYE SWAB	CN210000396387	Mr., Dhanushkodi, Male / 70
16	SO252129	06-05-2020	EYE SWAB	CN220000414995	Mr., Rajkumar R, Male / 44
17	SO252717	25-05-2020	EYE SWAB	CN220000415316	Master., Sai Thanvik, Male / 5
18	IG705164	06-07-2019	EYE SWAB	CN210000414475	Mrs.Shyamala S,60Y/F
19	IG706292	07-08-2019	EYE SWAB	CN210000414555	Ms. Menaha Veeramani,
20	IG707634	07-08-2019	EYE SWAB	CN220000414689	Mr.Gopinath A,52Y/M
21	IG707959	09-09-2019	EYE SWAB	CN220000414846	Mrs.Lavanya P,24Y/F
22	IG709209	10-10-2019	EYE SWAB	CN210000407865	Mr.Sundharamoorthy A,53Y/M
23	IG709322	10-10-2019	EYE SWAB	CN220000414937	Mr.Madhavan M,50Y/M
24	IG709329	06-11-2019	EYE SWAB	CN210000407480	Mr.Nagarajan J,79Y/M
25	IG709961	01-01-2020	EYE SWAB	CN220000414972	Mr.Balu P,55Y/M
26	IG710537	02-02-2020	EYE SWAB	CN210000399403	Mr.Karthick P,34Y/M
27	IG710934	05-03-2020	EYE SWAB	CN210000413099	Mr.Veeramani,57Y/M
28	IG711242	07-04-2020	EYE SWAB	CN220000415278	Mr.Kuppandi K,65Y/M
29	IG711401	06-05-2020	EYE SWAB	CN220000414952	Mr.Manikandan R,33Y/M
30	SO251865	25-05-2020	EYE SWAB	CN210000407753	Mr. Maruthamuthu, 59Y/M, S/O. Chinnathambi D.
31	IG781484	03-05-2019	EYE SWAB	CN220000425887	Mr.Gokulakrishnan. B,38Y/M
32	IG781575	04-05-2019	EYE SWAB	CN220000425887	Mr.Gokulakrishnan. B,38Y/M
33	IG781727	05-06-2019	EYE SWAB	CN220000425887	Mr.Gokulakrishnan. B,38Y/M
34	IG783688	06-07-2019	EYE SWAB	CN220000425887	Mr.Gokulakrishnan. B,38Y/M
35	IG784306	06-07-2019	EYE SWAB	CN220000426092	Mrs.Jothimani. C,53Y/F
36	IG785530	07-08-2019	EYE SWAB	CN220000426347	Mr.Jagadesan,52Y/M
37	IG789093	07-08-2019	EYE SWAB	CN220000426978	Mr.Chelliah,69Y/M
38	IG789937	09-09-2019	EYE SWAB	CN220000425663	Mr.Purushothaman R,42Y/M
39	IG789987	10-10-2019	EYE SWAB	CN220000425506	Mrs.Chellathal,59Y/F
40	IG791211	10-10-2019	EYE SWAB	CN220000425663	Mr.Purushothaman R,42Y/M
41	SO274346	06-11-2019	EYE SWAB	CN200000354282	Dr., Rajesh R, Male / 52
42	IG752245	01-01-2020	EYE SWAB	CN200000361598	Master.Aldrick S,3Y/M
43	IG757264	02-02-2020	EYE SWAB	CN220000421153	Master.Kabilan,3Y/M
44	IG760621	05-03-2020	EYE SWAB	CN220000422588	Mr.Panner Selvam R,38Y/M
45	IG760796	07-04-2020	EYE SWAB	CN210000391058	Mr.Sivaraj P,65Y/M
46	IG760912	06-05-2020	EYE SWAB	CN220000422588	Mr.Panner Selvam R,38Y/M
47	IG761485	25-05-2020	EYE SWAB	CN210000391058	Mr.Sivaraj P,65Y/M
48	IG764185	07-05-2019	EYE SWAB	CN220000423031	Mrs.Dhanalakshmi G,46Y/F
49	IG767346	10-06-2019	EYE SWAB	CN220000423596	Mrs.Malarkodi C,57Y/F
50	IG768826	16-07-2019	EYE SWAB	CN220000423964	CN220000423964
51	IG769827	17-07-2019	EYE SWAB	CN220000423426	Master.Dinesh S,12Y/M
52	IG774647	20-08-2019	EYE SWAB	CN220000424823	Mr.Ponnambalam M,74Y/M
53	IG775044	21-08-2019	EYE SWAB	CN220000424823	Mr.Ponnambalam M,74Y/M
54	IG775689	25-09-2019	EYE SWAB	CN210000388496	Master.Gabriel,10Y/M
55	IG778105	15-10-2019	EYE SWAB	CN220000425366	Master.Akhil S S,12Y/M
56	IG778298	15-10-2019	EYE SWAB	CN220000418598	Mr.Selvakumar K,45Y/M
57	IG780211	20-11-2019	EYE SWAB	CN210000388475	BabyVedasmrithi Y,11M/F
58	IG781484	03-01-2020	EYE SWAB	CN220000425887	Mr.Gokulakrishnan. B,38Y/M
59	IG781575	10-02-2020	EYE SWAB	CN220000425887	Mr.Gokulakrishnan. B,38Y/M
60	IG783688	15-03-2020	EYE SWAB	CN220000425887	Mr.Gokulakrishnan. B,38Y/M
61	IG784306	17-04-2020	EYE SWAB	CN220000426092	Mrs.Jothimani. C,53Y/F
62	IG785530	16-05-2020	EYE SWAB	CN220000426347	Mr.Jagadesan,52Y/M
63	IG789093	20-05-2020	EYE SWAB	CN220000426978	Mr.Chelliah,69Y/M
64	IG789937	13-05-2019	EYE SWAB	CN220000425663	Mr.Purushothaman R,42Y/M
65	IG789987	15-05-2019	EYE SWAB	CN220000425506	Mrs.Chellathal,59Y/F
66	IG791211	16-06-2019	EYE SWAB	CN220000425663	Mr.Purushothaman R,42Y/M
67	SO261815	11-07-2019	EYE SWAB	CN220000420254	Master. Kamalesh .V, 13Y/M, S/O. Vijaya Kumar.
68	SO263651	06-07-2019	EYE SWAB	CN220000421094	Mr., Varaprasadam, Male / 70

69	SO264473	10-08-2019	EYE SWAB	CN170000270296	Mrs. Lakshmi Prabha, 57Y/F, W/O. Nandha Gopal.
70	SO265496	17-08-2019	EYE SWAB	CN220000422086	Mr. Balamurugan T, 31Y/M, S/O. Dhayalan.
71	SO265497	10-09-2019	EYE SWAB	CN220000422086	Mr., Balamurugan T, Male / 31
72	SO266875	15-10-2019	EYE SWAB	CN170000171604	Mrs. Mullai S, 46Y/F, .
73	SO267908	23-10-2019	EYE SWAB	CN190000339885	Baby Of., Priyadarshini Dilipraj Kumar, Male / 2
74	SO269331	15-11-2019	EYE SWAB	CN220000424062	Ms. Priyadharshini M, 15Y/F, D/O. Muthiya.
75	SO271683	10-01-2020	EYE SWAB	CN220000423878	Mrs. Anjalai K, 62Y/F, W/O. Krishnamoorthi.
76	SO272196	01-02-2020	EYE SWAB	CN220000419767	Mrs. Parvathi. P, 78Y/F, W/O. Paramasivam.
77	SO274346	03-05-2019	EYE SWAB	CN200000354282	Dr., Rajesh R, Male / 52
78	IG782749	04-05-2019	EYE SWAB	CN220000426058	Mr.Periya Samy P,71Y/M
79	IG782993	05-06-2019	EYE SWAB	CN220000425516	Master.Pugazh S,5M/M
80	IG783431	06-07-2019	EYE SWAB	CN220000426194	Mrs.Chellam K,80Y/F
81	IG784930	06-07-2019	EYE SWAB	CN220000425516	Master.Pugazh S,5M/M
82	IG786862	07-08-2019	EYE SWAB	CN210000405164	Mr.Sivaprakash D,55Y/M
83	IG788406	07-08-2019	EYE SWAB	CN220000426904	Mrs.Parameshwari S,72Y/F
84	IG788634	09-09-2019	EYE SWAB	CN220000426904	Mrs.Parameshwari S,72Y/F
85	IG789384	10-10-2019	EYE SWAB	CN220000426734	Mr.Mohamed Jaffer Ali T M,69Y/M
86	IG790928	10-10-2019	EYE SWAB	CN220000416165	Mr.Krishnamoorthy A,58Y/M
87	SO273752	06-11-2019	EYE SWAB	CN170000172747	Mr. Sundarajan S, 35Y/M, S/O. Sellamuthu.
88	SO274789	01-01-2020	EYE SWAB	CN220000421643	Mrs. Mangalam, 46Y/F, W/O. Selvaraj.
89	IG712782	02-02-2020	EYE SWAB	CN220000415479	Mr.Arulappan S,53Y/M
90	IG736541	05-03-2020	EYE SWAB	CN220000418296	Mr.Murugesan P,80Y/M
91	IG742509	07-04-2020	EYE SWAB	CN220000419681	BabyMagisa Sri,6M/F
92	IG755421	06-05-2020	EYE SWAB	CN210000379040	Master.Veera Kanagesh. K,4Y/M
93	IG727175	25-05-2020	EYE SWAB	CN220000417467	Master.Ponkumaran S,8Y/M
94	IG731491	06-07-2019	EYE SWAB	CN220000415589	Baby Of.Jayanthi Venkatachalapathy,2M/F
95	IG736476	07-08-2019	EYE SWAB	CN220000418598	Mr.Selvakumar K,45Y/M
96	IG739084	07-08-2019	EYE SWAB	CN220000418598	Mr.Selvakumar K,45Y/M
97	IG739085	09-09-2019	EYE SWAB	CN220000418598	Mr.Selvakumar K,45Y/M
98	IG739898	10-10-2019	EYE SWAB	CN220000418598	Mr.Selvakumar K,45Y/M
99	IG743839	10-10-2019	EYE SWAB	CN210000404310	Mr.Anbazhagan,48Y/M
100	SO257758	06-11-2019	EYE SWAB	CN220000416361	Master. Priyadharshan P, 3Y/M, S/O. Pramiah.

Among the 100 collected samples, we chose only 6 samples of infants due to more than 80% of samples of adults having chronic parallel medical conditions like Hypertension, Diabetes, Kidney issue, Moderate Asthma, Heart disease, Weakened immune system, and Obesity.

Isolation of Ocular pathogens

Ocular pathogens are isolated from 6 infants' sample and identified based on Molecular characterization.

Molecular identification

DNA isolation, amplification, and sequencing

DNA extraction from cultured bacteria was carried out successfully and then purified with sodium acetate-ethanol precipitant and bacteria were carried out successfully and purified using a modified CTAB - method. The isolated PCR was used to amplify genomic DNA, and the amplicons were obtained approximately at the length of 1000 - 1500bp for the 16srRNA region. The Using forward and reverse primers, amplicons were eluted and sequenced, and sequence chromatograms were successfully obtained. biochemical portrayal doesn't demonstrate that microbes might be available in a more prominent level of eye swab examples .it was demonstrating my atomic portrayal show that PCR-positive outcomes are indicative of a functioning irresistible cycle, this finding may helpful to antimicrobial treatment regimens. This information may additionally impact the bacterial species and subtypes picked for antibody development, since inoculation targets are used to set in stone by culture recurrence [10].

Accession number of ocular pathogens

The isolated Ocular pathogens are successfully submitted and get accession numbers from Genbank. *Streptococcus pneumoniae* (ON556481), *Haemophilus influenza* (ON556483), *E. coli* (ON556422), *Klebsiella pneumoniae* (ON556553), *Staphylococcus aureus* (ON556482), and *Pseudomonas aeruginosa* (ON556423). Gram-positive bacteria account for the majority of bacterial ocular infections. The proportion and distribution of bacterial isolates among clinical diagnoses varied, but there was no exclusive anatomical restriction. To reduce the burden of bacterial ocular infections, doctors should focus on risk reduction and use an etiologic approach to diagnosis [11].

Phylogenetic analysis

Phylogenetic analysis shows *E. coli* and *Klebsiella pneumoniae* species in single clade from the same branches, whereas *Haemophilus influenza*, *Pseudomonas aeruginosa*, *Streptococcus pneumoniae* and *Streptococcus pneumoniae* are Present in four different clades. MEGA software is a device that can quickly and precisely process at present accessible bacterial genome arrangements, with the potential for application to enormous observation datasets later on [12].

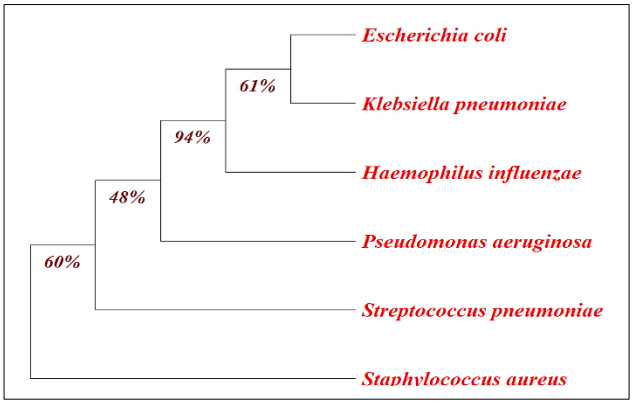

Fig 1 Phylogenetic tree of isolated ocular pathogens

Evolutionary relationships of taxa

The Neighbor-Joining method [13] was used to infer the evolutionary history. The best tree is displayed. Below the branches, the percentage of replicate trees in which the associated taxa clustered together in the bootstrap test (1000 replicates) is shown [14]. The evolutionary distances were calculated using the Maximum Composite Likelihood method [15] and are in base substitutions per site. The proportion of sites in each descendent clade where at least one unambiguous base is present in at least one sequence is shown next to each internal node in the tree. Six nucleotide sequences were examined in this study. The following codon positions were included: 1st+2nd+3rd+Noncoding. For each sequence pair, all ambiguous positions were removed (pairwise deletion option). The final dataset contained 1514 positions in total. MEGA11 [16] was used to perform evolutionary analyses [16].

Collection of Arthrocnemum indicum and extract preparation

The plant material of *Arthrocnemum indicum* was gathered from the Thanjavur District, Tamil Nadu, India. The plants were distinguished and the Herbarium sheet was kept in Department of Botany, St. Joseph's College, Tiruchirappalli. The plant leaves were a shade dried and powdered. 50 gm powder test was dis-addressed in 300ml polar and non-polar solvents and store it. Anyway, long stretch examination on bioactive mixtures from marine species has given a general and better information on marine regular items. Seagrasses are a rich premise of basically new and normally unique metabolites which they produce determined to keep up with their development and improvement during the super ecological burdens existing under ocean [17].

Phytochemical screening

Phytochemical screening of plant extricates was finished by the standard system concocted by Evans *et al.* [6]. The presence of compound demonstrates by + and nonattendance of compound shows by - images. Like our outcomes, the presence of phytochemical mixtures like alkaloid, terpenoid, polyphenol and flavonoids in the ethyl acetic acid derivation concentrate of new ocean grass [18]. Another review revealed the presence of flavonoids, phenol, steroids and glycosides in the seagrass removes [19].

Table 2 Phytochemical screening of *Arthrocnemum indicum*

Seagrasses	*Arthrocnemum indicum*			
	H	C	E	AQ
Steroids	+	-	+	+
Alkaloids	-	+	-	-
Flavonoids	-	+	-	-
Saponins	-	-	+	+
Phenols	-	-	+	-

Antimicrobial activity

Antibacterial activity

The antibacterial action of the concentrates was tried against six bacterial strains viz., *Streptococcus pneumoniae, Haemophillus inflenzae, E. coli, Klebsiella sp, Staphylococcus aureus* and *Pseudomonas aeruginosa*. Standard well dispersion technique utilizing Muller Hinton agar was performed and the plates were hatched at 37°C for 24 hours. The ethanol Extracts show elevated degrees of the zone of hindrance when contrast with different solvents separate. Prior reports distinguished the high recurrence of Staphylococcus epidermidis, segregated from conjunctival discharge and it was affirmed by most creators [20-21]. Correspondingly in one more report gram-negative organic entities were secluded from ordinary conjunctiva, for example, *Escherichia coli, Klebsiella pneumoniae, Pseudomonas aeruginosa, Bacterium nitratum, Proteus morgani* and *Enterobacter cloacae* [22]. The most widely recognized bacterial species, segregated from eyelids and conjunctival contaminations are *S. aureus* (23.13%) trailed by *S. pneumoniae* (21.78%) and coagulase negative *Staphylococci* (18.29%). [23] announced that *S. aureus* was the most transcendent microscopic organisms disconnected as visual microorganisms. However, in our discoveries, *S. aureus* (7.1%) was confined in next to no numbers. The current concentrate likewise agreed with different investigations, the potential bacterial disengages, from 89 conjunctival examples of Taif University, Saudi Arabia, as *Staphylococcus aureus, Staphylococcus epidermidis, Streptococcus pneumoniae, Klebsiella pneumoniae, Streptococcus pyogenes, Bacillus subtilis, Escherichia coli, Micrococcus roseus, Enterobacter aerogenes and Pseudomonas aeruginosa* [24].

Table 3 Antibacterial potential of *Arthrocnemum indicum* at different doses of chloroform and hexane

Ocular pathogens	Zone of inhibition (mm in diameter)									
	Chloroform (µg)					Hexane (µg)				
	Gentamycin	100	200	300	400	Gentamycin	100	200	300	400
Klebsiella pneumoniae	17.0±0.0	7.0±0.0	8.0±0.0	10.0±0.0	11.0±0.0	16.0±0.0	-	-	-	-
Streptococcus aureus	18.0±0.0	8.0±0.0	8.0±0.0	9.0±0.0	11.0±0.0	19.0±0.0	8.0±0.0	8.0±0.0	8.0±0.0	8.0±0.0
Streptococcus pneumoniae	16.0±0.0	-	-	-	-	12.0±0.0	-	-	-	-
Escherichia coli	15.0±0.0	-	-	-	-	12.0±0.0	-	-	-	-
Pseudomonas aeruginosa	16.0±0.0	-	-	-	-	17.0±0.0	-	-	-	-
Haemophillus inflenzae	17.0±0.0	-	-	-	-	19.0±0.0	-	-	-	-

Table 4 Antibacterial potential of *Arthrocnemum indicum* at different doses of Aqueous and ethanol

Ocular pathogens	Zone of inhibition (mm in diameter)									
	Aqueous (µg)					Ethanol (µg)				
	Gentamycin	100	200	300	400	Gentamycin	100	200	300	400
Klebsiella pneumoniae	12.0±0.0	-	-	-	-	16.0±0.0	-	-	-	-
Streptococcus aureus	18.0±0.0	-	-	-	7.0±0.0	19.0±0.0	7.0±0.0	8.0±0.0	7.0±0.0	11.0±0.0
Streptococcus pneumoniae	15.0±0.0	-	-	-	9.0±0.0	15.0±0.0	-	-	-	-
Escherichia coli	17.0±0.0	-	-	-	-	16.0±0.0	7.0±0.0	7.0±0.0	8.0±0.0	10.0±0.0
Pseudomonas aeruginosa	16.0±0.0	-	-	-	-	18.0±0.0	-	-	-	-
Haemophillus inflenzae	18.0±0.0	-	-	-	-	17.0±0.0	-	-	-	-

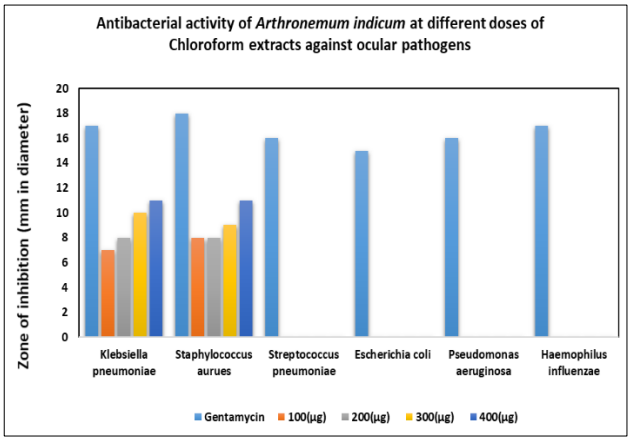

Fig 2 Rate of antibacterial activity of *Arthrocnemum indicum* at different doses of chloroform extracts against ocular pathogens

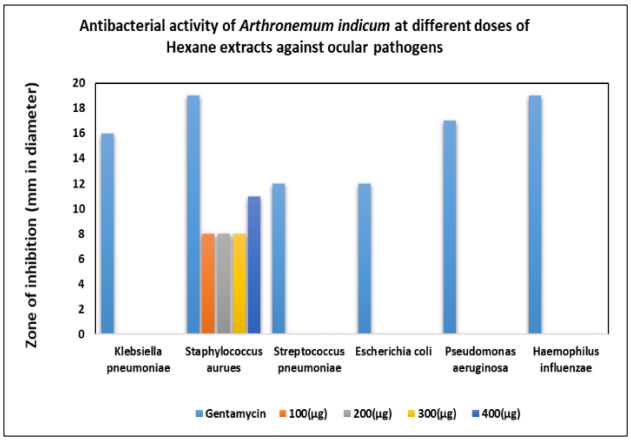

Fig 3 Rate of antibacterial activity of *Arthronemum indicum* at different doses of hexane extracts against ocular pathogens

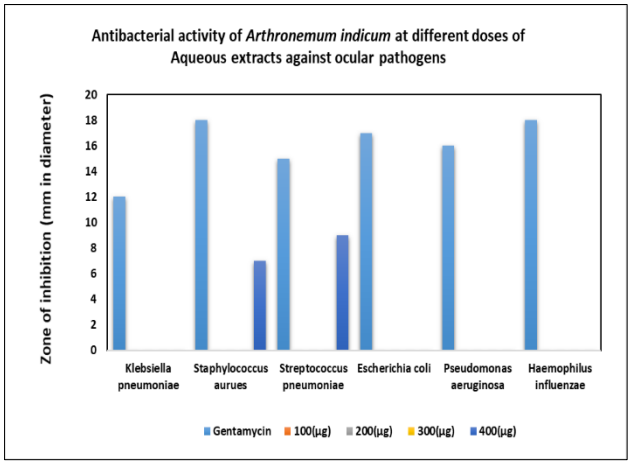

Fig 4 Rate of antibacterial activity of *Arthrocnemum indicum* at different doses of Aqueous extracts against ocular pathogens

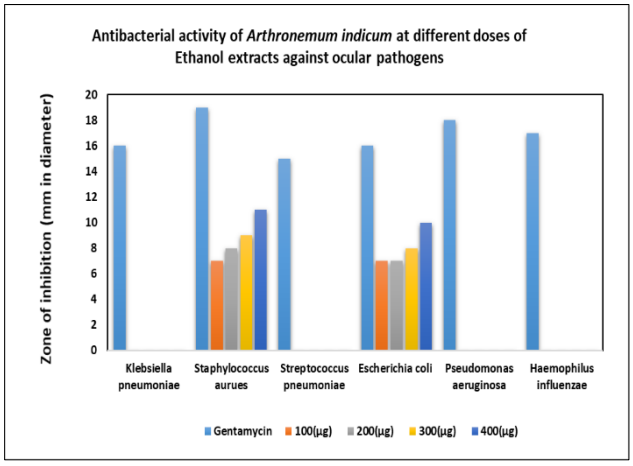

Fig 5 Rate of antibacterial activity of *Arthrocnemum indicum* at different doses of ethanol extracts against ocular pathogens

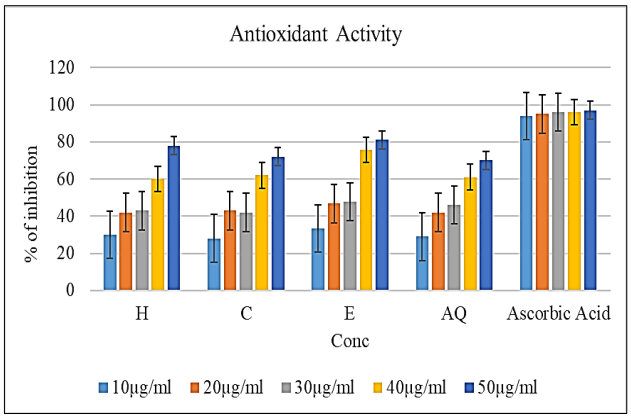

Fig 6 Antioxidant activity of *Arthrocnemum indicum*

Antioxidant activity

The free revolutionary searching capability of the picked concentrates of *Arthrocnemum indicum* were tried at different focuses and their movement was contrasted and the reference standard Ascorbic corrosive. It was seen that greatest revolutionary rummaging action was displayed by 500 µl centralization of the ethanol concentrate with 81% of cell reinforcement movement while that of the ascorbic corrosive was viewed as 97%. Similarly, seagrass showed high absolute cell reinforcement movement (132.38, 75.027 mg AscAE/g) and a high level of DPPH revolutionary rummaging action (68.14%). The TAA and FRAP examines showed positive and fundamentally high connection ($R^2 = 0.646$) [25-26].

CONCLUSION

This study has shown that Ocular pathogens isolated from infant's eye swab and it was identified by molecular characterization and its ocular pathogen will treated with *Arthrocnemum indicum* extracts it contains essential and auxiliary metabolites that can be pharmacologically valuable as well as groups some antibacterial antifungal and cancer prevention agent properties. The cancer prevention agent limits of the seagrasses showed possible rich wellsprings of normal cell reinforcements. Further investigations are fundamental for disconnection and portrayal of the dynamic cell reinforcement compounds, which can be utilized to treat different oxidative prepressure relatedlnesses.

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