EVALUATION OF ANTIOXIDANT POTENTIAL , PHYTOCHEMICAL SCREENING, ELEMENTAL ANALYSIS OF AQUEOUS METHANOLIC EXTRACT OF *Globba winitii* C.H.Wright AND *Pogostemon quadrifolius* (Benth.)F.Muell

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ABSTRACT

Background and objective:Antioxidants possess the ability to eliminate free radicals .They have a role in the protective impact of plant-based meals . Secondary metabolites were considered to have therapeutic activity over various ailments. The current study involved the preparation and evaluation of the aqueous methanolic extract of two plant species: *Globba winitti* from the Zingiberaceae family and *Pogostemon quadrifolius* from the Lamiaceae family. **Materials and Methods** :The extracts underwent elemental analysis, in vitro antioxidant screening, and phytochemical screening by using Total Antioxidant Capacity, Superoxide anion scavenging activity assay, DPPH radical-scavenging activity, Fe^{2+} chelating activity assay, Reducing power assay **Results :** The IC50(conc.)of ascorbic acid, MEPQ, & AMEGW for DPPH Radical scavenging activity were 34.91µgml^{-1},51.7µgml^{-1}& 52.873µg ml^{-1},respectively. AMEGW,MEPQ, and conventional ascorbic acid were shown to have total antioxidant activity with IC50 values of 34.55µgml^{-1},32.01µg ml^{-1}&42.41µg ml^{-1}, in that order. For AMEGW,MEPQ, & ascorbic acid, the ascorbic acid of Super Oxide RadicalScavengingActivity(IC50) was76.62µgml^{-1},42.52µgml^{-1},&35.93µgml^{1},respectively. For the Reducing Power Assay, the ascorbic acid, AMEGW, and MEPQ (IC50)values were, in that order, 0.80µgml^{-1},0.47µgml^{-1},&0.38µgml^{-1}. The IC50 values of AMEGW,MEPQ, and ascorbic acid for their ferrous ion chelating activity were 45.23µgml^{-1},47.57µgml^{-1},&71.86µg/ml,respectively. The NItric oxide scavenging activity (IC50)of ascorbic acid for AMEGW,MEPQ, and ascorbic acid were 71.925µg/ml,52.99µgml^{-1},&57.41µgml^{-1},respectively.**Conclusion :** These findings implied that, in comparison to MEPQ,*Globba Winitii* possessed noticeably greater antioxidant capacity

KEYWORDS: Scanned electron microscopy, Total Antioxidant Capacity, Superoxide anion scavenging activity assay, DPPH radical-scavenging activity, Fe^{2+} chelating activity assay, Reducing power assay, *Pogostemon quadrifolius* (PQ), *Globba winnitti* (GW)

INTRODUCTION

In the recent growth of Pharmacognosy the knowledge of free radicles was gaining a promising effect of disease management .Free radicles were unstable and they attack the healthycells and lead to cell death .This effect is completely eliminated by antioxidants to react with free radiclesand prevent oxidative damage.The present research is contributing to the evaluation of the antioxidant potential of different species. The Lamiaceae or Labiatae [1]is a family having phytochemicals .*Pogostemon quadrifolius*[2] (PQ), commonly called as four leaf star . Globba winitii (GW), belongs to the Zingiberaceae family. The research investigation was conducted to extract and analyze the elemental composition of phytochemicals in PQ and GW. These phytochemicals were then evaluated for their invitro antioxidant potential[3,4]. The preliminary phytochemical analysis[5] elemental analysis, and total alkaloidal, phenolic, and flavonoid contents were evaluated[6], and the results are displayed here. Scanning electron microscopy was also conducted to analyze the microscopic structure of *Pogostemon quadrifolius.*

MATERIALS & METHODS

- **Procurement and authentication of plant material**

  In December 2019, the rhizomes of *Globba Winitii* and the aerial of *Pogostemon quadrifolius* were collected from the Chinnaraavigudem Forest Reserve in Manuguru Mandal, Bhadradri District, Telangana State, India. Herbarium specimens were kept, and Plant Taxonomist (IAAT: 337) K. Madhava Chetty of Sri Venkateswara University, Tirupathi, Andhra Pradesh, recognized & verified these specimens.

  Plant Extract Preparation: The Aerial parts of PQ (MEPQ) juvenile plants as well as the rhizomes of GW(AMEGW) plant were gathered. With distilled water, they were completely disinfected. For three weeks, they were left to dry in an area of shade. The dried plant material of weight 2.5 kg was then finely pulverized in an electric grinder. The dried powder of 2.5 kg as stored at 36 degrees temperature in airtight virgin plastic containers to prevent contamination and allowed soxhlet extraction by using Aqueous methanol 80%

- **Scanned electron microscopic analysis of the stem and leaf of *Pogostemon quadrifolius*:** SEM is an effective investigative technique[7] that employs a concentrated stream of electrons to generate detailed and highly magnified images of a sample's surface topography.[8] Mature leaves

and the stem of *P. quadrifolius*—more precisely, the 9th leaf beneath the meristem—were collected. The sample treatment was carried out using the Singh et al. Approach. The images were captured using an extreme-resolution analytical field emission SEM from Jeol, Japan, and Thermo, USA. [9]

- **Powdered microscopy**: A small amount of Herbal Powder [10] of flower, leaf, and stem Of PQ and GW the powder microscopy characters were observed as described by Fahn 1997

Physico-chemical parameters: Foreign organic matter, total ash value, water soluble ash, foaming index, acid insoluble ash value, swelling index, water soluble extractive value, and ethanol-soluble extractive value were among these physicochemical characteristics[11]. The moisture content was determined by measuring the loss while drying at 105°C. Powdered samples F1,L1,S1 from the flower, leaf, and stem sections were subjected to fluorescence investigations respectively. An essential way to evaluate the quality and purity of herbal medicines is to look at their total ash and acid-insoluble ash [12]

Quantitative identification of the component chemicals

***Determination of total phenol content*:** The quantification of total phenols[28] was conducted utilizing the methodology given by Edeoga et al.,(2005).

***Determination of Flavonoid*:** The determination of flavonoids was conducted using the Bohm and Kocipai-Abyazan (1994) method.

***Determination of Steroids*:** Steroid content in the sample was evaluated using Buljet‟s reagent as explained by Attarde Daksha *et al*.,(2010)

***Determination of Alkaloids*:** Alkaloidal material in the sample was evaluated using Buljet's reagent as explained by the method of Harborne (1973).

***Estimation of total terpenoid content*:** The leaf extracts were evaluated for their terpenoid content[6] using the standard method described by Ferguson in 1956.

***Qualitative analysis of Inorganic elements*[13]:** A 500mg sample of plant material was generated and subjected to treatment with a mixture of HNO3 and HCl in a ratio of 3:1 (volume/volume) for a duration of 1 hour. The filtrate produced following the filtration process was utilised to carry out ensuing test.(Khandelwal,2006). Like Ca, Mg, Na, K, Fe, sulfate, phosphate, chloride, and nitro.

In vitro Antioxidant Activity

***DPPH radical-scavenging activity*:** The Shimada et al.(1992) approach was utilized to measure the radical-scavenging activity of DPPH.

***Determination of the Total Antioxidant Capacity*:** The antioxidant activity of herbal extracts was assessed using the phosphomolybdenum method,[7][8] adhering to the protocol specified by Prieto et al. (1999).

Fe^{2+} chelating activity assay method: We evaluated the extracts' ferrous ion (Fe2+)-chelating capacity using the Dinis et al. (1994) method.

Superoxide anion scavenging activity assay: Utilizing the Liu et al. (1997) methodology, the superoxide anion radical scavenging activity was determined.

***Reducing power assay*:** Using Oyaizu's (1986) approach, the extract's Fe3+ reducing power was found.

Nitric oxide scavenging activity assay: The scavenging NO radicals activity[14] was calculated using the protocol outlined by Garrat(1964)

RESULTS

Images showing the results of Scanned electron microscropy of leaf and stem of Pogostemon quadrifolius were displayed below

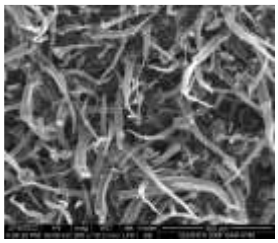

Fig A : Hairy structures on the outer surface of Leaf of *P.quadrifolius*

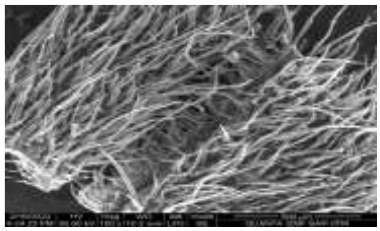

Fig B : outer surface of Leaf of *P.quadrifolius*

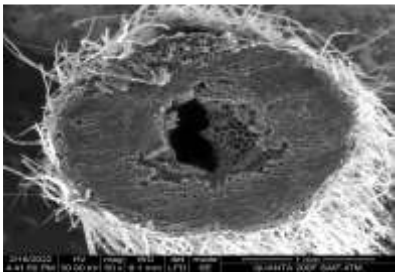

Fig D : Transverse section of Stem *of P.quadrifolius*

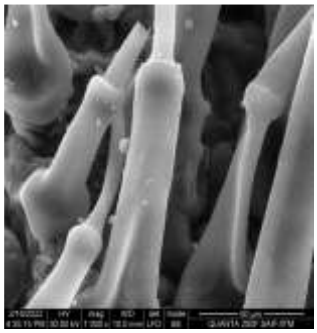

Fig c : Closer view of hairs of *P.quadrifolius*

SAMPLE	Aerial part	Rhizome (R 1)
FOREIGN MATTER	NIL	NIL
LOSS ON DRYING % W/W	7.203	8.503
TOTAL ASH	7.5%	4.605 %
WATER SOLUBLE ASH % W/W	1.5 %	1.512 %
ACID INSOLUBLE ASH % W/W	2.4 %	0.518 %
SWELLING INDEX	NO SWELLING	NO SWELLING
FOAMING INDEX	100	100
ETHANOL SOLUBLE EXTRACTIVE % W/W	7.82 %	7.845 %
WATER SOLUBLE EXTRACTIVE % W/W	21.35 %	15.35 %
MOISTURE CONTENT % W/W	81%INITIALLY &15% after drying	92%INITIALLY &15% after drying

Table 1: Physico-chemical parameters of *Pogostemon quadrifolius and Globba winitti*

Reagent	UV Radiation (366nm)	UV Radiation(254 nm)	Visible light
Dry powder	Light Brw.	Gr.	Fluorscent gr.
P + 1 N NaOH (aq)	Brw.	Gr.	Light gr.

P + 1 N NaOH (alc)	Light gr.	Ylw.	Ylw
P + 1N Hcl	Orange	Gr.	Dark gr.
P + 50% H2SO4	Light gr.	Light gr.	Dark gr.
P + 50% HNO3	Gr.	Gr.	Dark gr.
P + Picric acid	Gr.	Light gr.	Ylw gr.
P + CH3COOH	Dark brw.	Ylw gr.	Dark gr.
P+ FeCL3	Brw.	Brw	Brw

Table 2. Fluorescence analysis of the Aerial of *Pogostemon quadrifolius*

Reagent	**UV Radiation (366nm)**	**UV Radiation(254 nm)**	**Visible light**
Dry powder	Light green	Light gr	Dark gr
P+1N NaOH(aq)	Brownish	Green(gr)	Light gr
P+1N NaOH(alc.)	Light green.	Yellow	Yellow
P + 1N Hcl	Gr	Gr	Dark gr
P + 50% H2SO4	Light gr.	Brownish gr	Dark gr
P + 50% HNO3	Gr	Dark gr	Dark gr
P + Picric acid	Yellow	Dark yellow	Yellowish green
P + CH3COOH	Light gr.	Gr.	Dark gr.

P+ FeCL3	Gr.	Gr.	Ylw.

Table3: Fluorescence analysis of the Rhizome powder of *Globba winitii*

Test	**Aerial part methanol extract PW**	**Aq Methanol GW**
Alkaloids(Mayers)	+	**+ +**
Triterpenoid(LB Test)	+	**+ +**
Coumarin (NaoH.TEST)	+	**+ +**
Tannins(FeCl.test)	-	**+**
Phenols(FeCl.test)	+	**+ +**
Flavonoids(Schinoda.test)	+	**+**
Saponins (Foam.test)	-	**+ +**
Carbohydrates(Molisch Test)	+	**+ +**
Cardiac glycosides(Keller killani test)	-	**+**
Quinones	-	**+ +**
Anthocyanin	+	**+**
Acids (Effervescense test)	-	**+ +**

(-)indicates absence ; (+) indicates presence; (++) indicates highly present

Table 4: The outcomes of the Phytochemical analysis of flower extract, leaf & stem of *P.quadrifolius* are presented

Phytochemicals	***Globba winitii* Rhizhome extract**		
	Methanol	**Aqueous**	
Alkaloids	+	+	
Flavonoids	+ +	+ +	
Saponins	+ +	+ +	
Tannins	+ +	+	
Terpenoids	+	+ +	
Proteins	+ +	+	
Polysaccharides	+ +	+ +	
Steroids	+ +	+ +	
Glycosides	+ +	+ +	
Phlobatanins	+ +	+ +	
Triterpenoids	+ +	+ +	
Polyphenols	+	+	
Anthraquinone	_	_	

Table 5:The results of the Phytochemical analysis of extracts RHIZOME of *G.winitii and aerial part extract of PQ* are presented (-)indicates Absence, (+) indicates Presence, (++) indicates Highly present

S.No	**Secondary Metabolites**	**Result (mg/gm) Leaf extract PQ**	**Result (mg/gm) R1 Extract**
1.	Total Phenol	162.33± 1.14	210.20 ± 1.8
2.	Flavonoids	112±1.66	130.25 ± 0.84

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3.	Alkaloids	45± 0.55	102.11 ± 0.65
4.	Steroids	12± 0.77	80.65 ± 0.45
5.	Terpenoids	24± 0.32	68.90 ± 0.30

Table 6: Quantitative Analysis of secondary metabolites in *Globba winnitti* rhizome extract and PQ Extract

S.No.	**Inorganic elements**	**GWRE**	**PQ extract**
1.	Calcium	+	+
2.	Magnesium	+	-
3.	Sodium	+	+
4.	Potassium	+	+
5.	Iron	--	--
6.	Sulphate	++	+
7.	Phosphate	+	+
8.	Chloride	+	+
9.	Nitrate	+	+

Table 7: Qualitative inorganic elemental analysis in *Globba Winitii* rhizome extract[GWRE] and *Pogostemon quadrifolius* (PQ)

S.No	**Name of the Vitamin**	**GWRE**	**PQ extract**
1	Vitamin –A	--	--
2	Vitamin –C	++	+
3	Vitamin –E	++	+

(-) Indicates Absence, (+)Indicates Presence, (++)Indicates High concentration

Table 8: Qualitative vitamin analysis in *Globba Winitii* rhizome extract[GWRE] and *Pogostemon quadrifolius* (PQ)

IN VITRO Antioxidant Activity

Our study's findings showed that the AMREGW and AMEPQ contain vital minerals, vitamins, and phytochemicals asmentioned in Arunmathi et al.

Parameters	**20(µg/ml)**	**40(µg/ml)**	**60(µg/ml)**	**80(µg/ml)**	**IC50(µg/ml)**
Aqueous methanolic Globba Winitii Rhizome (AMREGW) Extract	15.30 ±1.2	36.21±1.72	69.54±3.2	86.09±4.41	52.87
Aqueous methanolic Pogostemon quadrifolius extract (AMEPQ)	28.6± 2.04	46.2± 3.4	57.2±2.6	74.2±3.3	51.7
Standard (Ascorbic acid)	25.6±2.04	61.26±4.90	88.98±7.11	99.34±7.94	34.91

Table 9 : % of DPPH radical scavenging activity of *Globba Winitii* rhizome and *Pogostemon quadrifolius* extract at various concentrations. For triplicates, values were presented as Mean ± SD.

Parameters	**20(µg/ml)**	**40(µg/ml)**	**60(µg/ml)**	**80(µg/ml)**	**IC50(µg/ml)**
Aqueous methanolic Globba Winitii Rhizome (AMREGW) Extract	15.81±0.4	30.88±0.35	40.75±0.34	71.62±0.4	34.55±0.29
AMEPQ	12.3± 0.32	28.6±0.29	35.4±0.31	46.2±0.30	32.01±0.22

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Standard (Ascorbic acid)	22.35± 1.80	51.23± 4.09	72.54± 5.80	86.35± 6.91	42.41±4.09

Table 10 : % of Total antioxidant activity of *Globba Winitii* rhizome extract and *Pogostemon quadrifolius* at various (conc.)

Parameters	**20(µg/ml)**	**40(µg/ml)**	**60(µg/ml)**	**80(µg/ml)**	**IC50(µg/ml)**
AMREGW	11.93±0.86	22.01±0.4	48.59±0.85	79.56±1.15	35.93±0.33
AMEPQ	22.81±0.61	34.01±0.31	51.03±0.91	80.43±1.23	42.52±0.15
Standard(Ascorbic acid)	31.25 ± 2.50	64.23±5.13	89.54 ± 7.16	98.51 ± 7.88	76.62±0.25

.For triplicates, values were presented as Mean ± SD.

Table 11: *Globba Winitii* rhizome extract reducing power assay at various (conc.)

Parameters	**20(µg/ml)**	**40(µg/ml)**	**60(µg/ml)**	**80(µg/ml)**	**IC50(µg/ml)**
Globba Winitii Extract	0.163±0.047	0.33±0.031	0.56±0.016	0.75±0.03	0.47± 0.15
P.quadrifolius	0.194±0.02	0.31±0.04	0.45±0.03	0.69±0.05	0.38± 0.16
Standard (Ascorbic acid)	0.41±0.03	0.71±0.05	0.89±0.07	0.98±0.08	0.80± 0.13

Table 12: The percentage of *Globba Winitii rhizome* extract that can scavenge free radicals at varying doses

Parameters	**20(µg/ml)**	**40(µg/ml)**	**60(µg/ml)**	**80(µg/ml)**	**IC50(µg/ml)**
*Globba winitii*Extract	11.44±7.3	38.09±4.76	52.38±4.56	73.02±7.27	45.23±4.31

P.quadrifolius	22.33±5.1	40.09± 3.31	55.05± 3.31	71.09± 5.25	47.57± 3.39
Standard (Ascorbic acid)	35.23±2.81	65.21±5.28	78.51±6.28	98.65±7.89	71.86±5.44

Table 13 : % of Ferrous iron chelating activity of *Globba Winitii* extract and *P.quadrifolius* extracts at various (conc.)

Parameters	**20(µg/ml)**	**40(µg/ml)**	**60(µg/ml)**	**80(µg/ml)**	**IC50(µg/ml)**
Globba Winitii extract	14.21±7.9	44.44±11.11	70.36±6.41	85.17±6.41	57.41±5.31
P.quadrifolius extract	20.16±5.4	40.33±7.77	65.66±5.23	81.02±5.44	52.995±6.39
Standard (Ascorbic acid)	26.21 ± 2.04	59.62± 4.65	84.23 ± 6.56	96.45 ± 7.52	71.925±4.32

For triplicate data, values were given as Mean ± SD (OD).

Table 14: Globba Winitii extract's capacity to scavenge nitric oxide at varying (conc.)

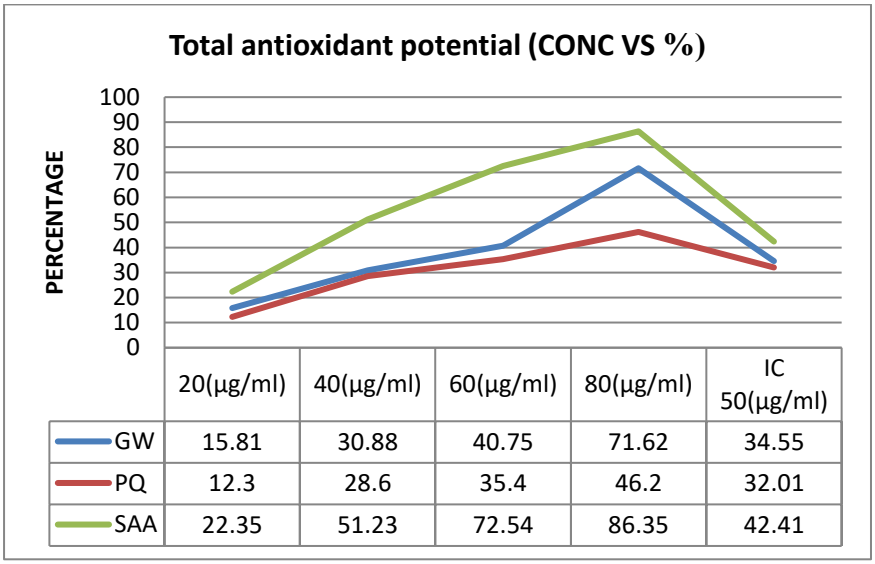
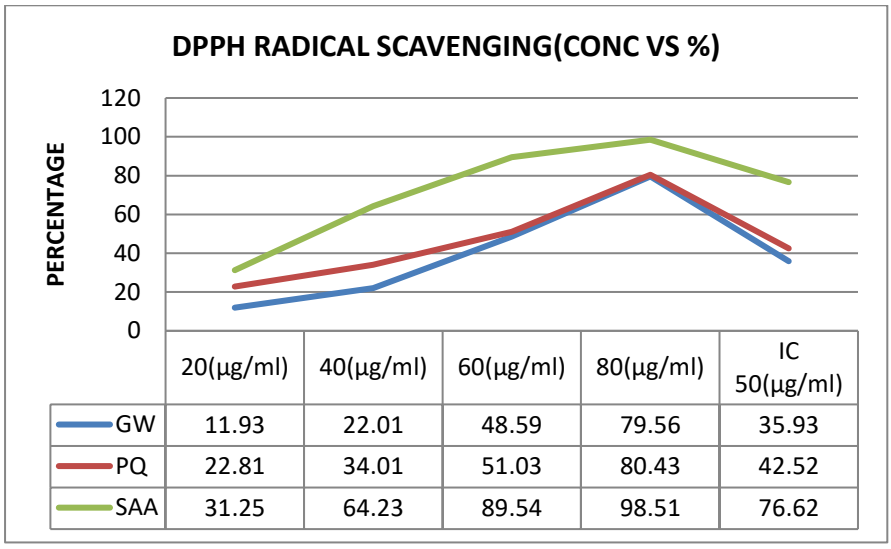
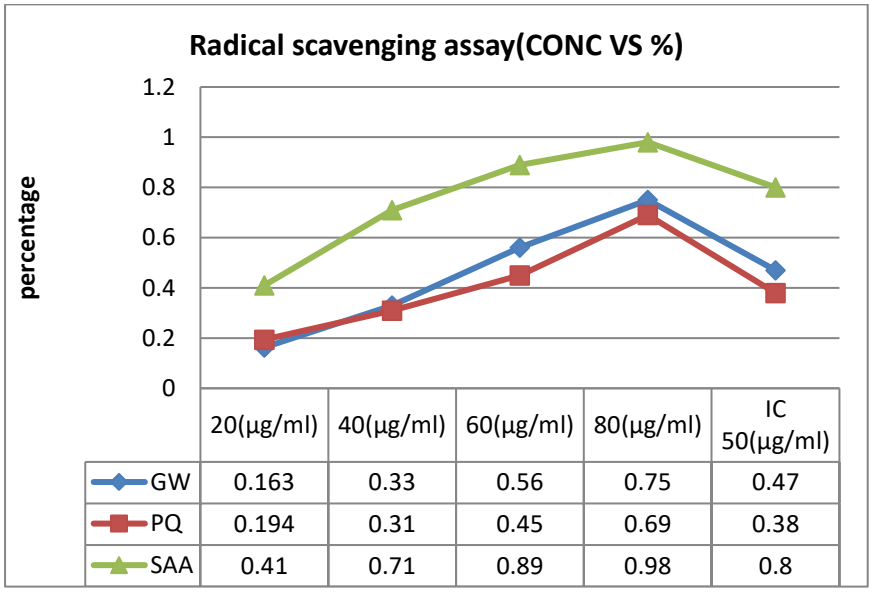


Fig 1: Graph representing Total antioxidant potential; x axis indicates concentration of drug and y axis indicates percentage of antioxidant potential .GW=*Globba winitti* rhizome extract ;PQ = *Pogostemon quadrifolius* whole plant extract ;SAA =Standard ascorbic acid



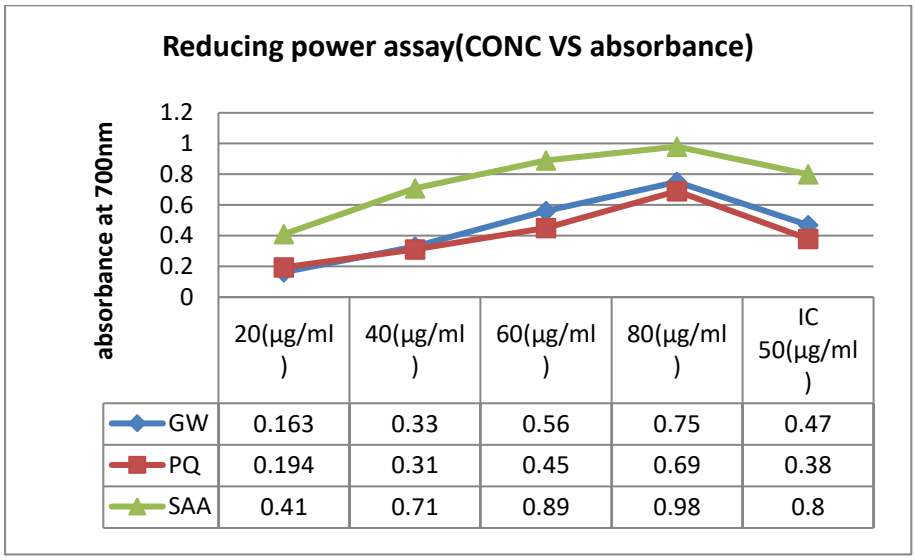
	20(µg/ml)	40(µg/ml)	60(µg/ml)	80(µg/ml)	IC 50(µg/ml)
GW	11.93	22.01	48.59	79.56	35.93
PQ	22.81	34.01	51.03	80.43	42.52
SAA	31.25	64.23	89.54	98.51	76.62

Fig 2: Graph representing DPPH Radical scavenging assay; x axis indicates concentration of drug and y axis indicates percentage of DPPH Radical scavenging activity .GW=*Globba winitti* rhizome extract ;PQ = *Pogostemon quadrifolius* whole plant extract ;SAA =Standard ascorbic acid



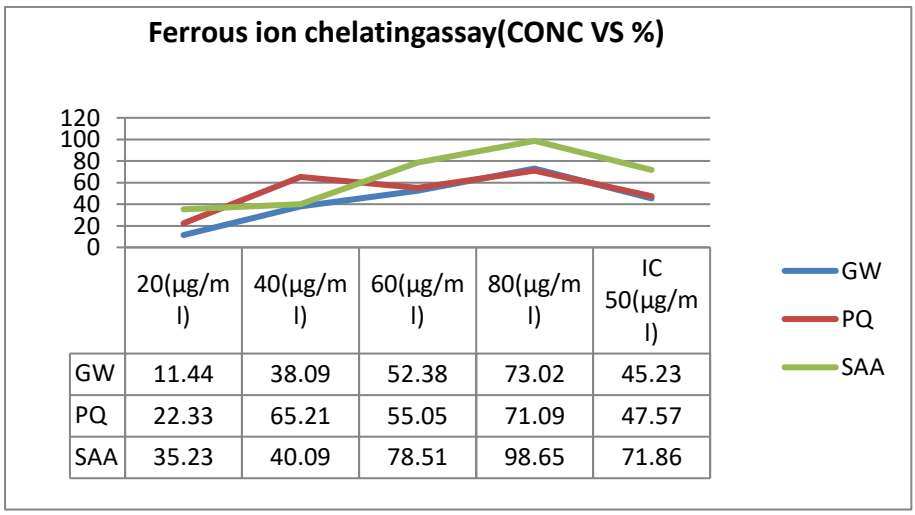
	20(µg/ml)	40(µg/ml)	60(µg/ml)	80(µg/ml)	IC 50(µg/ml)
GW	0.163	0.33	0.56	0.75	0.47
PQ	0.194	0.31	0.45	0.69	0.38
SAA	0.41	0.71	0.89	0.98	0.8

Fig 3: Graph representing Radical scavenging assay; x axis indicates concentration of drug and y axis indicates percentage of Radical scavenging .GW=*Globba winitti* rhizome extract ;PQ = *Pogostemon quadrifolius* whole plant extract ;SAA =Standard ascorbic acid



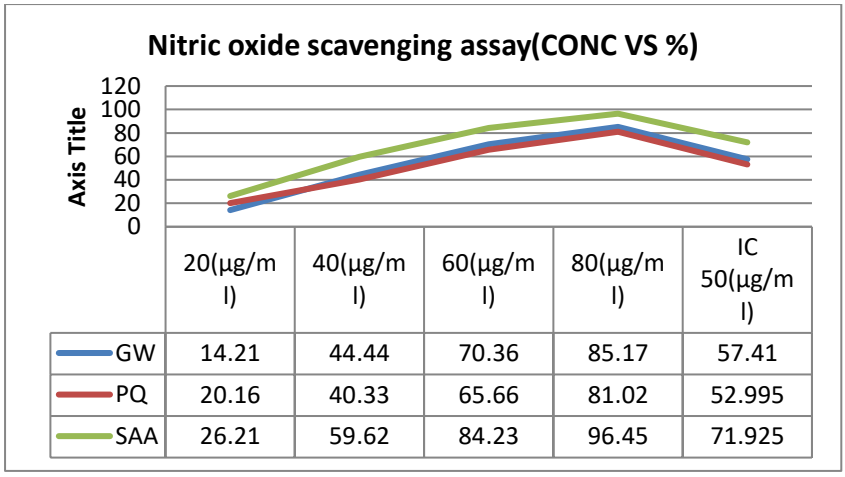
	20(µg/ml)	40(µg/ml)	60(µg/ml)	80(µg/ml)	IC 50(µg/ml)
GW	0.163	0.33	0.56	0.75	0.47
PQ	0.194	0.31	0.45	0.69	0.38
SAA	0.41	0.71	0.89	0.98	0.8

Fig 4: Graph representing Reducing power assay; x axis indicates concentration of drug and y axis indicates absorbance at 700 nm .GW=*Globba winitti* rhizome extract ;PQ = *Pogostemon quadrifolius* whole plant extract ;SAA =Standard ascorbic acid



	20(µg/ml)	40(µg/ml)	60(µg/ml)	80(µg/ml)	IC 50(µg/ml)
GW	11.44	38.09	52.38	73.02	45.23
PQ	22.33	65.21	55.05	71.09	47.57
SAA	35.23	40.09	78.51	98.65	71.86

Fig 5: Graph representing Ferrous ion chelating assay ; x axis indicates concentration of drug and y axis indicates percentage of Ferrous ion chelation .GW=*Globba winitti* rhizome extract ;PQ = *Pogostemon quadrifolius* whole plant extract ;SAA =Standard ascorbic acid



	20(µg/ml)	40(µg/ml)	60(µg/ml)	80(µg/ml)	IC 50(µg/ml)
GW	14.21	44.44	70.36	85.17	57.41
PQ	20.16	40.33	65.66	81.02	52.995
SAA	26.21	59.62	84.23	96.45	71.925

Fig 6: Graph representing Nitric oxide scavenging assay; x axis indicates concentration of drug and y axis indicates percentage of Nitric oxide scavenging activity .GW=*Globba winitti* rhizome extract ;PQ = *Pogostemon quadrifolius* whole plant extract ;SAA =Standard ascorbic acid

Statistics: Every secondary metabolite measurement found in the AMERGW and AMEPQ was looked at. Three separate experiments were done to test the plant extract's antioxidant capacity. The findings were displayed as mean (n = 3), with P value < 0.05 indicating the least significant difference (LSD). Using IBM SPSS statistics 21.0, the acquired activity was put through multiple range testing (Turkeys test) and analysis of variance (ANOVA).

DISCUSSION:

A single test technique is insufficient for evaluating a compound's antioxidant capability. Throughout the evolutions, the significance of natural products[15] for medicine and health has been enormous. The ability of MEPQ, AMEGW, and normal ascorbic acid to scavenge DPPH radicals is demonstrated. The IC50(conc.)of ascorbic acid, MEPQ, & AMEGW for DPPH Radical scavenging activity were 34.91µgml^{-1},51.7µgml^{-1}& 52.873µg ml^{-1},respectively. AMEGW, MEPQ, and conventional ascorbic acid were shown to have total antioxidant activity with IC50 values of 34.55µgml^{-1},32.01µg ml^{-1}&42.41µg ml^{-1}, in that order. For AMEGW, MEPQ, & ascorbic acid, the ascorbic acid of Super Oxide RadicalScavengingActivity(IC50)was76.62µgml^{-1},42.52µgml^{-1},&35.93µgml^{1},respectively. For the Reducing Power Assay, the ascorbic acid, AMEGW, and MEPQ (IC50)values were, in that order, 0.80µgml^{-1},0.47µgml^{-1},&0.38µgml^{-1}. The IC50 values of AMEGW,MEPQ, and ascorbic acid for their ferrous ion chelating activity were 45.23µgml^{-1},47.57µgml^{-}

$^{-1}$,&71.86µg/ml,respectively. The NItric oxide scavenging activity (IC50)of ascorbic acid for AMEGW,MEPQ, and ascorbic acid were 71.925µg/ml,52.99µgml^{-1},&57.41µgml^{-1},respectively. With increasing concentrations, AMEGW & MEPQ's antioxidant potential improved noticeably According to method mentioned in Indrajit Karmakar et al., an aqueous methanol extract of *Globba winitti* (AMEGW) rhizomes revealed the existence of saponins:froth test, alkaloids:Dragendroff's test, tannins & phenols:ferric chloride test, flavonoids:Shinoda test, terpenoids:Liberman Burchard test, & volatile oil:spot test. Rhizomes were a substantial source of secondary metabolites[16], as confirmed by the aforementioned study and reviews [17]. This investigation showed that the sample had high levels of total phenol, flavonoids, moderate levels of alkaloids, and low levels of terpenoids and steroids . *Globba winitii* rhizome extract. Aqueous Methanol extract of different plant parts of *Pogostemon quadrifolius* like flower extractcontainsAlkaloids, triterpenoids, phenols, flavonoids, carbohydrates ,anthocyanin & leaf extract contains higher amounts of Alkaloids,terpenoids,phenols,flavonoids low concentration of saponins,carbohydrates, cardiac glycosides & anthocyanins. Stem extract contains a low concentration of Alkaloid. Triterpenoid, phenols ,saponins and anthocyanidins .Flavonoids are hydroxylated by phenolic substances, which are highly response to microbial infection, act as an effective antioxidant, have strong anticancer activities[30], anti-inflammatory and anti-allergic methods in Del-Rio *et al*, and Okwu . Many flavonoids were utilized to reduce antioxidant[18] and antidepressant activities[19] mentioned as per Guan and Liu, ; Sun *et al., Kanimozhi et al*.. Polyphenols[20] are significantly equivalent to antioxidants[21], they scavenge oxygen “free radicals and reduce the inflammatory response in our body (Wink,2000). Individual alkaloids act as both agonists and antagonists for several neurotransmitter systems by binding directly to nerve receptors, interfering with neurotransmitter metabolism (cholinesterase inhibition), signal transduction and ion channel activity, among other methods. Hydrolyzable tannins, non-hydrolyzable and condensed tannins are powerful antioxidants. Saponins are classified as steroidal and triterpenoid saponins. Triterpenoid saponins mainly act as precursors of sex hormone[22] and corticosteroids. Saponin precipitates and coagulates red blood cells[23]. Terpenoids are a broad class of pharmacologically active phytochemicals consisting of volatile and non-volatile, non-aromatic and aromatic components[24,25]. They are important in traditional herbal medicines[26]. Vitamin C is very necessary for the conversion of dopamine or epinephrine[27] and enhances inter-neuronal communication. It behaves as a cofactor for several metabolic enzymes[28] (Naidu, 2003) and is also participates in thyroid hormone production[29]. The limitation of antioxidant assay

methods were they evaluate the efficiency of antioxidants that scavengefree radicals which were the only a division of biological antioxidative pool.potency and capacity of antioxidants don't correlate with eachother necessarily .Considering the above results,it is evident that the herbal extract of MEPQ and AMEGW can be utilized for protecting the cells for free radical scavenging .

CONCLUSION

These findings implied that, in comparison to MEPQ.*Globba Winitii* possessed noticeably greater antioxidant capacity. The Inorganic elements and evidential secondary metabolites proved to have potent therapeutic properties which has to be proved by redundant screening methods. The DPPH's radical scavenging activity,total antioxidant capacity,Fe^{2+}chelating activity,superoxide anion scavenging activity's test,reducing power assay, & NO scavenging activity were employed to evaluate the antioxidant potential of PQ AND GW. The results revealed an increasing tendency with dosage[30]. However, the reducing power of both species was less in comparison with the synthetic standard Ascorbic acid[31].To better the co-relation between the antioxidant potential Phenols>flavonoid> tannins are responsible for the inhibition of the oxidative process.

Significance statement : The research performed was to analyse the phytochemcals and screening of the Phytoconstituents will help to analyse the pharmacological aspects and provide a major contribution to preclinical evaluation .These findings will play a mojor advancement to protect the cell lines due to the antioxidant potential which will further lead a way to advance work and its implication .

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Conflict of interest :Authors declare no conflict of interest

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