DIVERSITY OF PHYTOHORMONE IN ALGAE - REVIEW ARTICLE

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Abstract

Algae are reported to produce a number of secondary compounds like lectin, phyco-biliprotiens, phyco-erythrin, phyco-cynin, allophyco-cynin, phyco-erythrin, alkaloids, flavonoids, axasanthin etc. Algae also producephytoharmone like IAA,IBA,cytokinin, gibberellin Jasmonic, Brassinosterrodes, Polyamines by various, group of algae division like, Chlorophyta-(Entaeromorha Chlorella CladophoraProtococcusChlorella, Scendesmus, Dunaliella, Haemococuus), *Caulerpa*, *Phaeophyta-* (*Ascophyllum, Laminaria, FucusAscophyllum, Sargassum, Macrocystis,), Rhodophyta-* (*Cyanidium, Gelidium, Grateloupia*) etc.

Introduction:

Algae are diverse phosynthetic group which is found in wide variety of habitat, These are chlorophyll bearing organism which may be thalloidi.e having no roots, stem, and leaves or leaf like organism They are found in very diverse and extreme habitat. It includes both eukaryotic and prokaryotic.They may be motile, non motile,palmelloid, dendroid, filamentous, heterotrichous and parenchymatous. Algae have great economical, medicinal, biotechnical and pharmeaucitical importance.

Auxin:

It was reported between 1960- 1970. It was found in the brown alga like (Macrocytis, Laminaria), Red algae (Botrycladia), Cynobacteria-(Oscillatoria). In the green algae, Enteromorpha, Chlorella, Cladophora,Caulerpapaspaloides, IAA are the product of its catabolism. Dioxyindolic-3-acetic acid were detected.

Cytokinin:

It was repeatedly found in extracts in marine phytoplankton. These hormonewerezeatin riboside, IPA and isopentenladenosine. These

hormone was found in Euglena gracilis. IPA was found Arthosporaafricanum. The basic cytokinin was found in green algae. Protococcus, Chrorella, and Scendesmus. O- glucosides were detected in brown algae. Sargassumheterophyllum, Macrocystispyrifera.

Jasmonic acid:

Oxylipin including asmonic acid and its volatile, methylester are found almost all algae like Dunallellatertiolecta, D. salina and Euglena Gelidium and Spirulina.

Polyamine-

It was reported in red algaelike Cyanidium, Gelidium, and Grateloupia and brown algae like Dictyotadichotoma. BrassiosteriodsIt is like 24- epiccastasterone and 28- homocastasterene were identified in the green algae like Hydrodictyonreticulatum.

Rhodomorphin:

Rhodomorphin is a glycopeptide with a molwt of about 14 kD. Glycoproteins of similar structure were found in other organisms as well, in the green alga Volvox in particular. This regulator was first found in the red filamentous algae, Griffithsiapacifica.

Gibberllin-

It was found in brown algae, GA-1,and GA-3 GA-6 were isolated from Fucusresiculosos and F.spiralis.

Sr. no	Hormone	Algae	Division	Reference
1	IAA	Entaeromorha Chlorella CladophoraCaulerpa		Provasoli and Carlucci(1974)
2	Cytokinins	Protococcus Chrolella Scendesmus Chlamydomonas		Farooqi*et al.*, (1990)
3	ABA	Dunaliella		Tominaga*et*

		Chrorella Haematococcus	Chlorophyta	*al*., (1993).
4	Jasmonic acid	Dunaliella Chrorella		Sitnik*etal*., (2003).
5	Brassinosteroids	Hydrodictyon		Yokota (1987)
6	Polyamines	Ulva Chrolella		Badini*et al*., (1994)
7	IAA	Macrocystis, Laminaria, Fucus, Ascophyllum	Phaeophya	Provasoli and Carlucci (1974)
8	ABA	Ascophyllum, Laminaria		Nimura and Mizuta (2002)
9	Cytokinin	Fucus, Ascophyllum, Sargassum,*Macrocystis*		Provasoli and Carlucci (1974).
10	Gibberellin	Fucus		Radley (1961)
	IAA	Botryocladia, Porphyra	Rhodophyta	Provasoli and Carlucci (1974).
	Cytokinins	Arthronema, Calothrix		Ördög*et al*,. (2004)
	Jasmonic acid	Gelidium		Arnold*et al*., (2001)
	Polyamines	Cyanidium, Gelidium, Grateloupia		Hamana*et al*., (1990)
	Rhodomorphin	Griffithsia		Waaland*et al*., (1980)
	Cytokinins	Chara	Charophyta	Ördög*et al*,. (2004)
	Cytokines	Euglena	Eugelenophyta	Swaminathanand

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				Bock (1977)
	Jasmonic acid	Euglena		Arnold and Targett (2001)
	Polyamines	Euglena		Mariánet *al*., (2000,)
	IAA	Oscillatoria, Chlorogloea.	Cyanophyta	Provasoli L. and Carlucci A.F (1974)
	Jasmonic acid	Spirulina.		Sitnik, K.M., Musatenko, L.I

Conclusion-

This paper reveals and summarized the diversity of phytoharmones produce by different group of algae like Chlorophyta, Phaeophyta, Rodophyta, Cynophyta, Euglenophyta and Charophyta These hormones are IAA, cytokinins, gibberellins, ABA, jasmonic acid, brassinosteroids etc. they have different functions in the metabolism of algal physiology a number of experiment have been performed. Still a number of algae are remain untouched and unexplored.

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