

Cytokinin is ~~induced~~ synthesized in higher plants. Cytokinin plays a key role in the life of higher plants. In 1930,

"Herberlandt" gave the first name discovered the presence of cytokinin to help the process of cytokinins but its chemical nature and role was established by Skoog and Miller.

The term cytokinin was proposed by "Letham" in 1963 and according to "Skoog and Miller" the term cytokinin universally used as generic name for other growth regulatory hormones in the same manner as kinetin.

The role of cytokinin in higher plants plays in different ways, which are as follows:

(1) Cell division - It is the characteristic property of cytokinin and according to 'Bauer and Wood' in 1962, an exogenous supply of cytokinin, a normal rice cell converts into a tumour cell.

(a) Tax hormone almost never acts alone in conjunction with auxin, cytokinins stimulate cell division in non meristematic tissues.

(2) Cell enlargement - A cytokinin can promote the enlargement of plant like auxin and gibberellins but in the case of cytokinin enlargement takes place due to cell division and in the case of other two such as auxin, gibberellins if takes place by cell enlargement.

(3) (a) According to "Skoog and Miller" cytokinin also play a role in the formation of the plant organ and in the case of tobacco pith, a balanced level of indole acetic acid and kinetin

produced auxin and undifferentiated cells and if this balance is altered by raising the ratio of the kinetin, the pith results in the formation of buds, which may grow into a complete tobacco plant.

(b) It also can be used to produce the prothymic plants, such as vitis vinifera formation of plastids of stem proplastids formation of starches and induction of glucose.

(c) Dominy: Cytokinin have been quite effective in breaking the dormancy of seed and some other plant organ.

(d) It also neutralise the inhibitory effects of auxin and Xanthation.

(e) Apical dominance: Cytokinin counteract the usually apical dominance of the bud and induce lateral bud formation which has been found apparently related to the vascular tissue differentiation.

(f) Initiation of interphase-cambium: It can induce the formation of the interphase-cambium.

(g) Mobility: These hormone affects the mobility of other organic substance.

(h) Nucleic acid metabolism: After the cytokinin treatment, it increase in the amount of RNA in the nucleic of onion root.

(i) Protein synthesis: Cytokinin increased the rate of the protein synthesis, when it applied and it regulate one of the step leading to protein synthesis especially translocation.

Characteristics of Cytokinins:

Cytokinins are characteristic by the following features: —

- a. Stimulation of cell division.
 - b. Used in tissue culture.
 - c. Counteract the apical bud dorminance.
 - d. Induced flowering in short day plant.
 - e. Delay of Senescence.
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