RAMA UNIVERSITY

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Course: B. Tech Biotechnology
Sub Code: BBT-515

Semester: 5th
Sub Name: Plant Biotechnology

LECTURE 6

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Table 11.1 Plant Hormones (1 of 2)

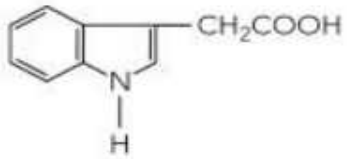
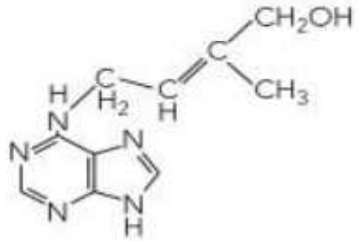
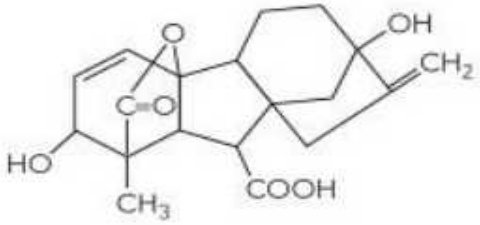
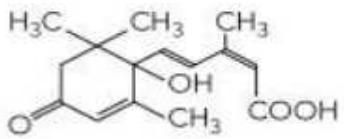
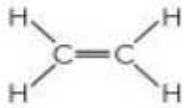
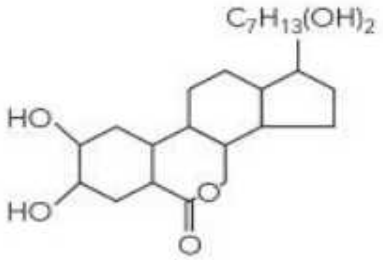
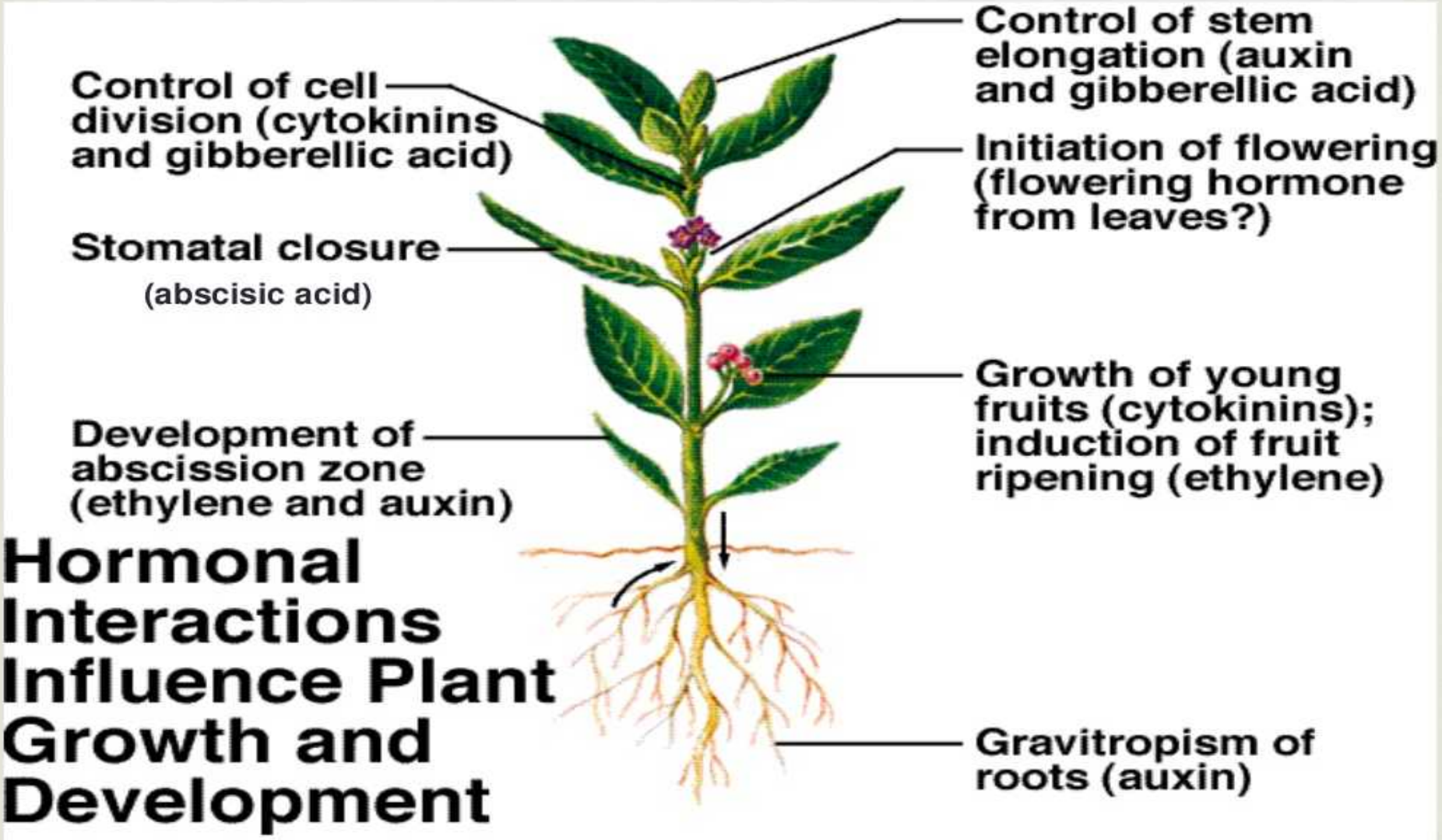
Hormone		Where synthesized in plants	Major functions
Auxins (Example shown: IAA)		Embryos, meristems, buds, young leaves	Stimulates stem and root growth; promotes cell differentiation in tissue culture and in procambium; regulates development of fruit; apical dominance; causes phototropism and gravitropism
Cytokinins (Example shown: zeatin)		Roots	Promotes root growth and differentiation; stimulates cell division and growth in tissue culture; stimulates germination; retards aging
Gibberellins (Example shown: GA_3)		Meristems, young leaves, embryos	Promotes seed germination and bud growth; promotes stem elongation and leaf growth; stimulates flowering and fruit development

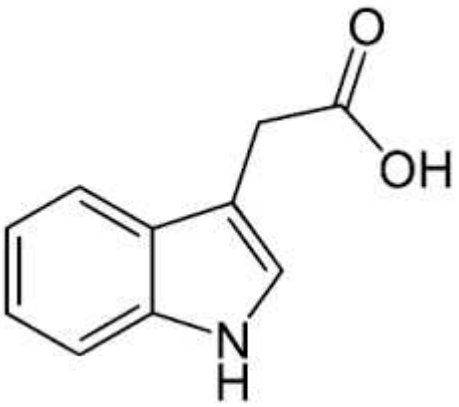
Table 11.1 Plant Hormones (2 of 2)

Hormone		Where synthesized in plants	Major functions
Abscisic acid (ABA)		Leaves, stems, roots, fruits	Inhibits growth; closes stomata during water stress; promotes dormancy
Ethylene		Ripening fruits, aging leaves and flowers	Promotes ripening of some fruits and thickening of stems and roots
Brassinosteroids (Example shown: brassinolide)		Seeds, fruits, shoots, leaves, and flower buds	Auxin-like effects; inhibits root growth; retards leaf abscission; promotes xylem differentiation

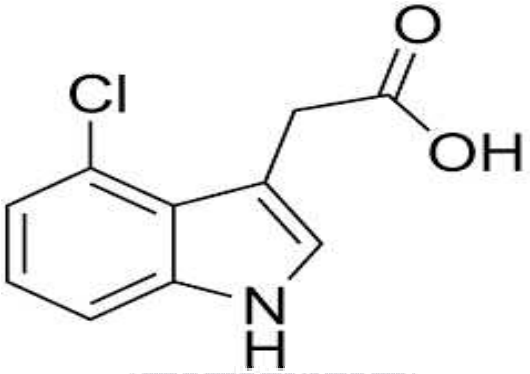
Plant Hormones & Growth



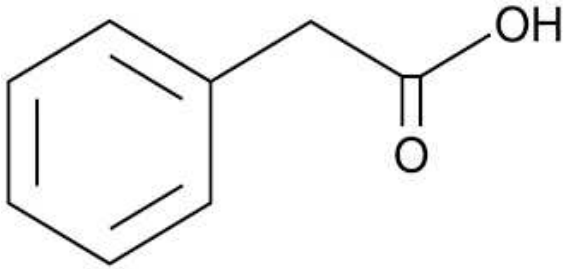
Naturally occurring (endogenous) auxins in plants include:



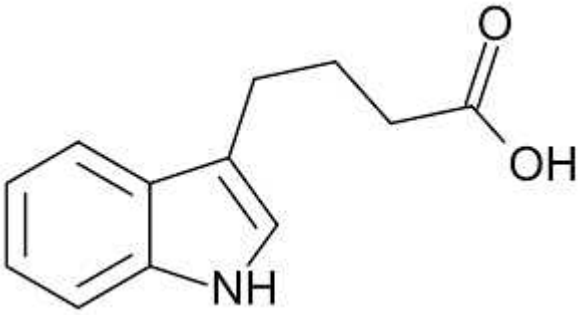
Indole-3-acetic acid



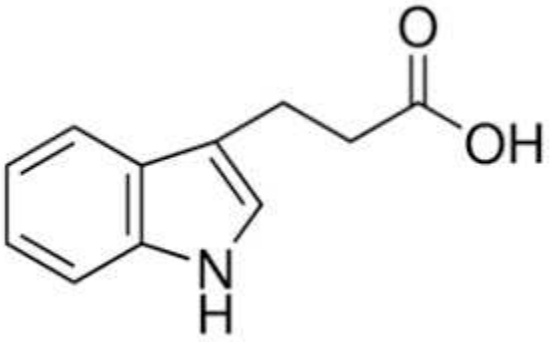
4-chloroindole-3-acetic acid



Phenylacetic acid

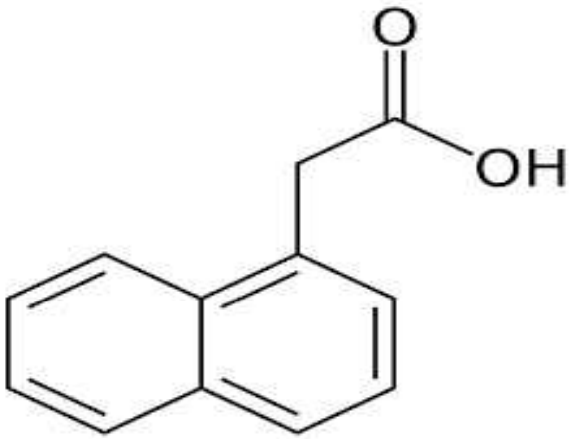


Indole-3-butyric acid

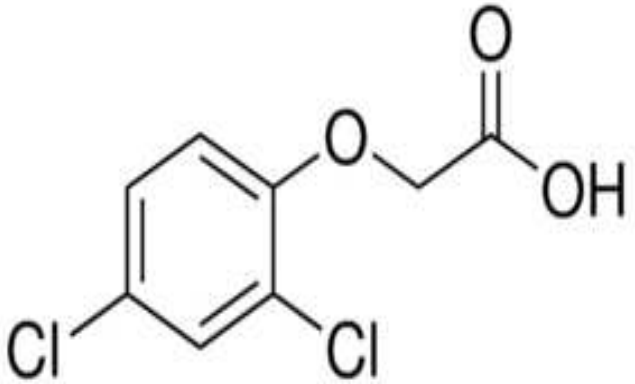


Indole-3-propionic acid

Synthetic auxin analogs include:



1-naphthaleneacetic acid



2,4-dichlorophenoxyacetic acid (2,4-D)

QUIZ