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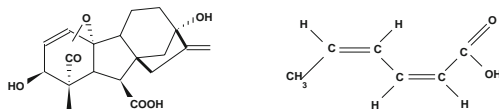


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Gibberellic Acid

The gibberellins are a group of tetracyclic lactonic carboxylic acids first isolated in Japan from the fungus 'Gibberella fujikuroi' the organism causing Bakanae disease in rice. They promote many of the normal processes of plant growth and development and are now known to be widely distributed in higher plants. The chemical structures of the gibberellins were established mainly by B.E. Cross, J.F. Grove, J. MacMillan and T.P.C. Mulholland (Reference 1).

The most prominent member of the group is



gibberellic acid (1), used commercially to promote the growth of seedlings and ensure uniform ripening of crops, e.g., grapes.

Keywords:

Gibberellic acid, gibberellins, plant growth hormone

A convenient method of analysis of formulations containing gibberellic acid involves reversed phase HPLC with UV detection at 206 nm. In Figure 1, a typical chromatogram for gibberellic acid is presented. Sorbic acid (2) was used as an internal standard. Comparison of commercial batches is made easy with the WinChrom SuperCompare feature, which enables different samples to be overlaid either on a VDU screen or hardcopy, as shown in Figure 2.

Conditions

Column: Spherisorb S5 ODS2, 250 mm x 4.6 mm ID
 Guard: Spherisorb S5 ODS2, 50 mm x 4.6 mm ID
 Mobile Phase: Methanol, aqueous 0.1% Phosphoric acid (35:65)
 Flow Rate: 1.5 ml/min
 Temperature: 35°C
 Detection: UV at 206 nm

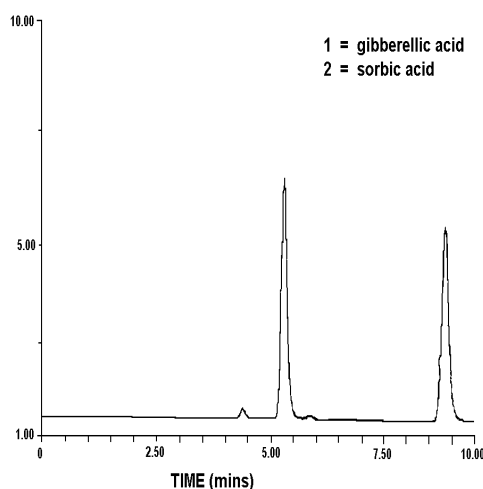


Figure 1 Gibberellic Acid Standard

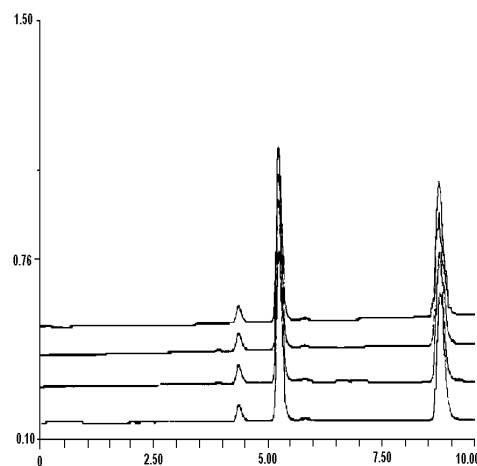


Figure 2 Batch Comparison

GBC HPLC Instrumentation

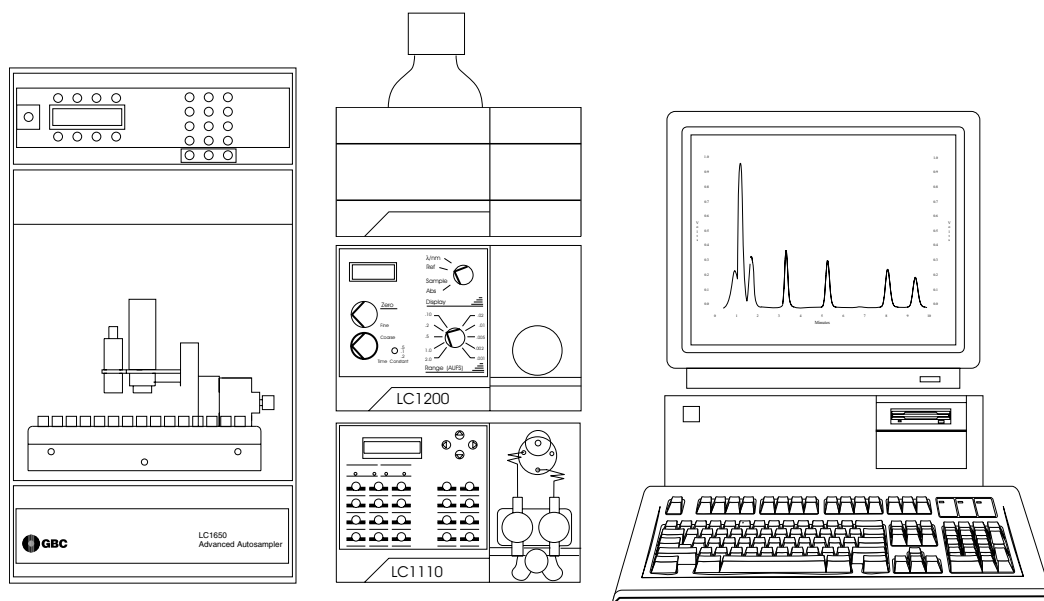
LC1110 Dual Piston HPLC Pump
LC1200 Variable Wavelength UV/Vis
Detector
LC1650 Advanced Autosampler
WinChrom Chromatography Data
Management System
LC1445 System Organiser
GBC Column Heater

Reference

1. Fieser, L.L. and Fieser, M., 'Topics in Organic Chemistry' (Reinhold, 1963), p. 200.

Acknowledgement

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