

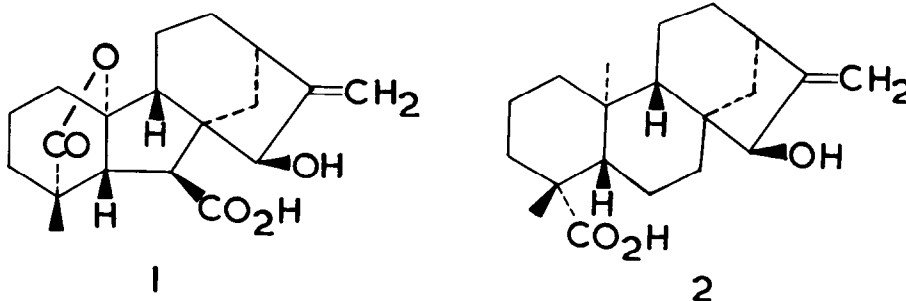
A NEW GIBBERELLIN (A₄₅) FROM SEED OF PYRUS COMMUNIS L

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We report the occurrence of a new gibberellin, allocated¹ the name GA₄₅, in seed of Pyrus communis L., and the assignment of structure (1) by direct comparison with one of the products of the metabolism of ent-15 α -hydroxykaurenoic acid (2) by Gibberella fujikuroi, mutant B1-41a²



Immature seed, removed from fruit of Pyrus communis cv. "Winter Nelis" and "Bartlett" 85 days after anthesis, were immediately frozen with solid CO₂ then freeze-dried. Aliquots of the dried seed were homogenised with MeOH-H₂O (4.1, v/v) and the extract was processed in the usual way³ to provide an EtOAc-soluble acid fraction. The latter was fractionated by PLC on SiO₂ with

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EtOAc-CHCl₃-MeCO₂H (15:5:1, v/v/v) The zone at Rf 0.2 - 0.8 was eluted with EtOAc and PLC was repeated as before. The partially purified acids from both seed sources were examined by GC-MS as the MeTMS derivatives. In both extracts, in addition to the known GA₂₅, abscisic acid, and 4'-dihydrophaseic acid, the new GA₄₅ was detected with the same GLC retention time and MS as the MeTMS derivative of 15β-hydroxy GA₉ (1), obtained as follows.

Incubation of ent-15α-hydroxykaurenoic acid (2), obtained by de-acetylation of xylopic acid⁴ with resuspension cultures of G. fujikuroi mutant Bl-41a gave several metabolites including 15β-hydroxy GA₉ (1), now GA₄₅, in 10-15% yield. The MeTMS-derivative had m/e 418(M⁺, 100%), 403(18), 358(23), 329(4), 284(12), 269(10), 225(13), 207(11), 169(10), and 156(77). ent-15α-Hydroxykaurenoic acid (2), GA₄₅ (1), and other 15-hydroxylated metabolites to be discussed in a full paper are characterised by an intense ion at m/e 156 in the MS of the MeTMS-derivatives. We have previously illustrated the usefulness of the mutant Bl-41a in converting ent-13-hydroxy kaurenoic acid⁵ and derivatives⁶ into higher plant GAs and derivatives. The microbiological conversion of ent-15α-hydroxykaurenoic acid (2) to GA₄₅ (1) provides another example.

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