

Inhibition of xanthine oxidase by cytokinins and related substances.

許秀蘊

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Abstract

Fourteen cytokinins were tested for their inhibitory effects on xanthine oxidase. The enzyme, xanthine oxidase catalyses the oxidation of hypoxanthine to xanthine and of xanthine to uric acid which has lambda max of 295 nm, forming the basis for a spectrophotometric assay of the activity of xanthine oxidase. The results showed that adenine-HCl, N6-(2-isopentenyl)-adenine, purine and DL-dihydrozeatin displayed very potent activities (IC_{50} = 1.92, 10.99, 60.98 and 86.36 microM respectively). Their apparent inhibition constants (K_i) were 2.20, 17.99, 13.59 and 115.62 microM, and induced competitive, uncompetitive, competitive and non-competitive type inhibitions respectively with respect to the substrate xanthine.