

Action of the ivasperin in the oat coleoptile lengthening and their relationship with the indol acetic acid

S. Gianfrancisco, A. Pastoriza y E. Riscala

Abstract

Alterations in radicles and hipocotyls of different species are produced by ivasperin, a natural lactone. The objective of the present work is to determine if the ivasperin acts as an inhibitor of auxin action in the cellular lengthening of oat coleoptile segments. Grains of Cristal variety oats were put to germinate, in darkness. After 72 h coleoptile segments were cut, eliminating the apical meristem and were placed with different ivasperin concentrations: 0, 300, 600 and 1000 mg L⁻¹, indole acetic acid (AIA) in concentrations of 0,0875 and 0,175 mg L⁻¹, and a sucrose solution at 3% as base medium. After 16 h their longitude was measured. Results show that ivasperin produces a decrease in segment length, with a greater response as the ivasperin concentration increases. When AIA 0,0875 mg L⁻¹ is applied a major lengthening is observed, for all ivasperin concentrations, in relation with treatments without AIA. In all ivasperin concentrations when the AIA concentration was 0,175 mg L⁻¹, a smaller lengthening was observed with regard to the control, indicating an inhibitor effect at high concentration. These results allow us to infer that the effect produced by ivasperin in the tested concentrations does not act as an inhibitor of the auxin action in the cellular lengthening of oat coleoptile segments.

Key words: cellular lengthening, indole acetic acid, ivasperin.

Recibido el 9-10-2000 ● Aceptado el 6-7-2001

1. Trabajo financiado por el Consejo de Investigaciones de la Universidad Nacional de Tucumán.
2. Departamento de Biología, Facultad de Agronomía y Zootecnia. Universidad Nacional de Tucumán. Avda. Roca 1900. C.C.125. CP 4000. San Miguel de Tucumán, Tucumán, Argentina. elmain@manant.unt.edu.ar