

BLUE-LIGHT ACTIVATION OF ANION CHANNEL IN *ARABIDOPSIS*

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A rapid transient depolarization of the plasma membrane in seedling stems is one of the earliest effects of blue light detected in plants. It appears to play a role in transducing blue light into inhibition of hypocotyl (stem) elongation, and perhaps other responses. The possibility that activation of a Cl⁻ conductance is part of the depolarization mechanism was raised previously and addressed here. By patch-clamping hypocotyl cells isolated from dark-grown (etiolated) *Arabidopsis* seedlings. Blue light was found to activate an anion channel residing at the plasma membrane. An anion-channel blocker commonly known as NPPB [5-nitro-2-(3-phenylpropylamino)-benzoic acid] potently and reversibly blocked this anion channel. NPPB also blocked the blue-light-induced depolarization *in vivo* and decreased the inhibitory effect of blue light on hypocotyl elongation. These results indicate that activation of this anion channel plays a role in transducing blue light into growth inhibition.