

## Cryptochrome (CRY) and Intention

### **ABSTRACT:**

#### **Aims**

A previous experiment suggested that consumption of intentionally treated tea influenced subjective mood under double-blind, controlled conditions. To investigate this effect objectively, we studied whether *Arabidopsis thaliana* seeds hydrated with intentionally treated vs. untreated water would show differences in hypocotyl length, anthocyanin, and chlorophyll.

#### **Method**

Three Buddhist monks were asked to focus their intention on commercially bottled water with the goal of improving the growth of seeds; bottled water from the same source served as an untreated control. Seeds with three variations of the flavoprotein cryptochrome (CRY) were used: the wild type *Arabidopsis* (Columbia-4), a gain-of-function mutation (*His-cry2*), and a loss-of function mutation (*cry1/2*), where “gain” and “loss” refer to enhanced and reduced sensitivity to blue light, respectively. The seeds were hydrated with treated or untreated water under blinded conditions, then placed in random positions in an incubator and exposed to either blue light or blue plus far-red light. The germination process was repeated three times in each experiment, each time using new seeds, and then the entire experiment was repeated four times.

#### **Results and Conclusions**

Data combined across all four experiments showed a highly significant decrease in hypocotyl length in the *His-cry2* seedlings (treated mean  $1.31 \pm 0.01$  mm, untreated mean  $1.43 \pm 0.01$  mm,  $p < 10^{-13}$ ), a significant increase in anthocyanin with all three forms of cry, particularly *His-cry2* (treated mean  $17.0 \pm 0.31$  mg, untreated mean  $14.5 \pm 0.31$  mg,  $p < 10^{-4}$ ), and a modest increase in chlorophyll in *His-cry2* (treated mean  $247.6 \pm 5.63$  mg, untreated mean  $230.6 \pm 5.63$  mg,  $p = 0.05$ ). These outcomes were in alignment with the monks’ intentions because a decrease in hypocotyl and increase in anthocyanin and chlorophyll are associated with enhanced photomorphogenic growth. These experiments suggest that the *His-cry2* mutation of *Arabidopsis* may be an especially robust “detector” of intention.

#### **Keywords**

Cryptochrome, Intention, Mind-matter interaction

### **Published Work:**

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