



SmartPlant: Environmental Control of Carotenoid Biosynthesis: A novel strategy to improve photosynthetic efficiency

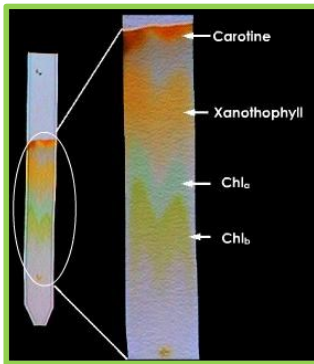


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Why photosynthetic pigments are important?



Carotenoids



Light
Harvesting

Color

Aroma

Flavors

Photosynthetic Pigments

Photosynthesis

BIOMASS
GROWTH
CROP YIELD



Growth
Regulators

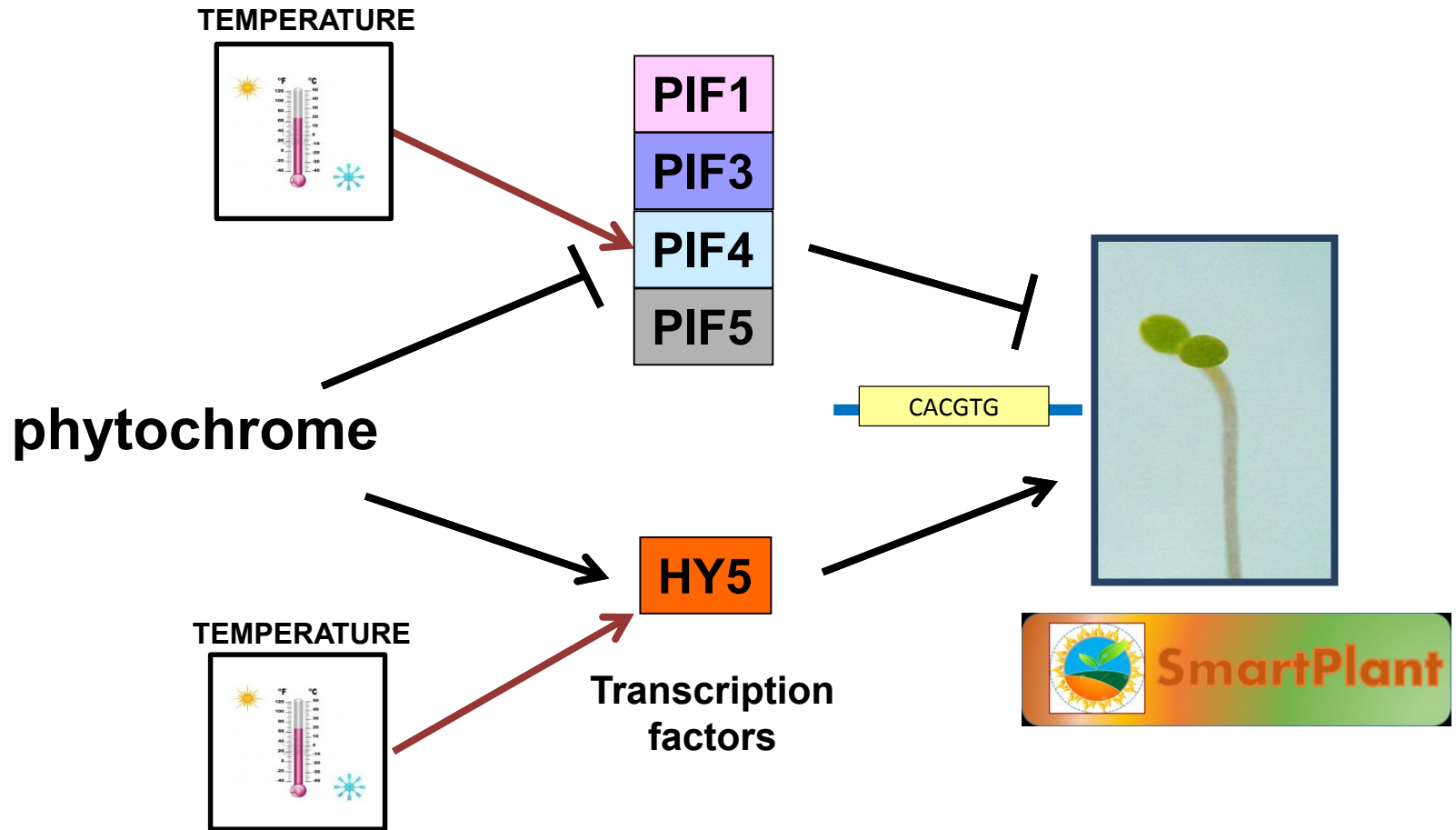
Antioxidants



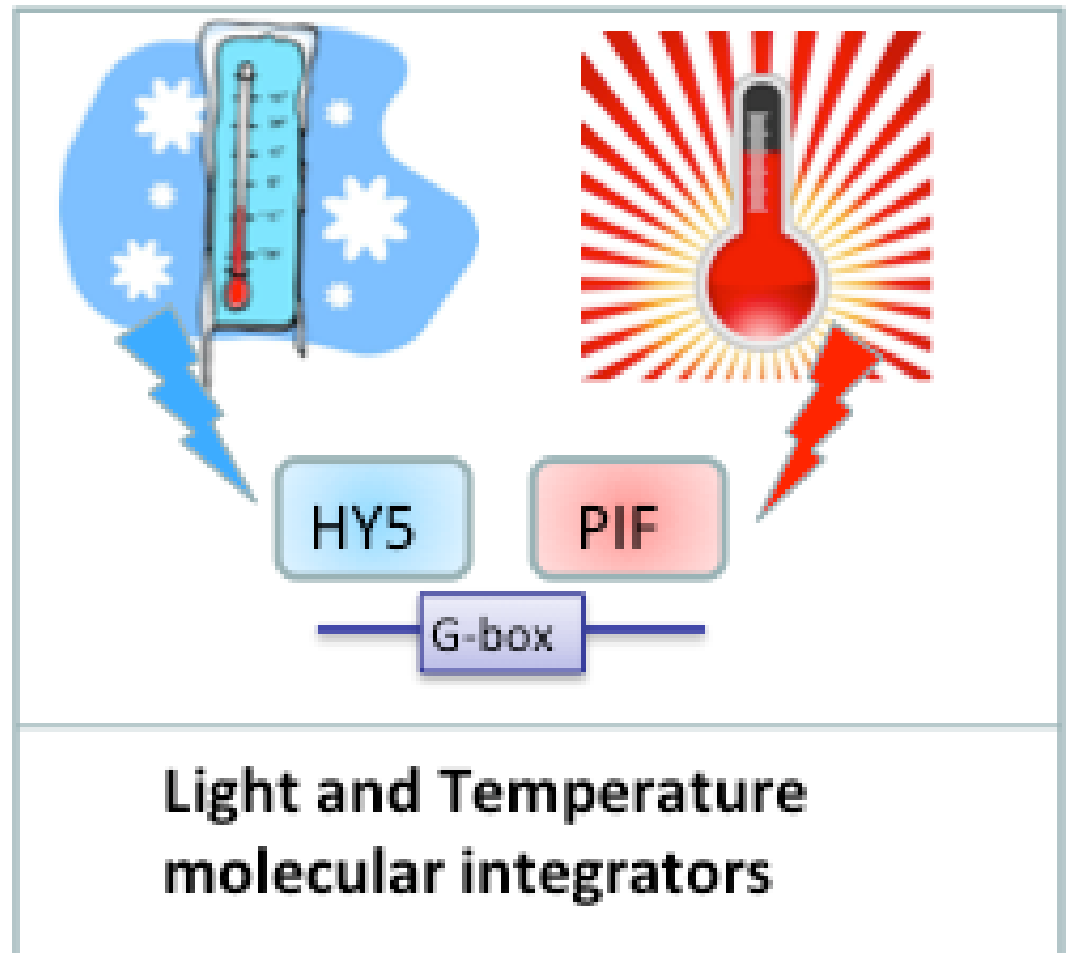
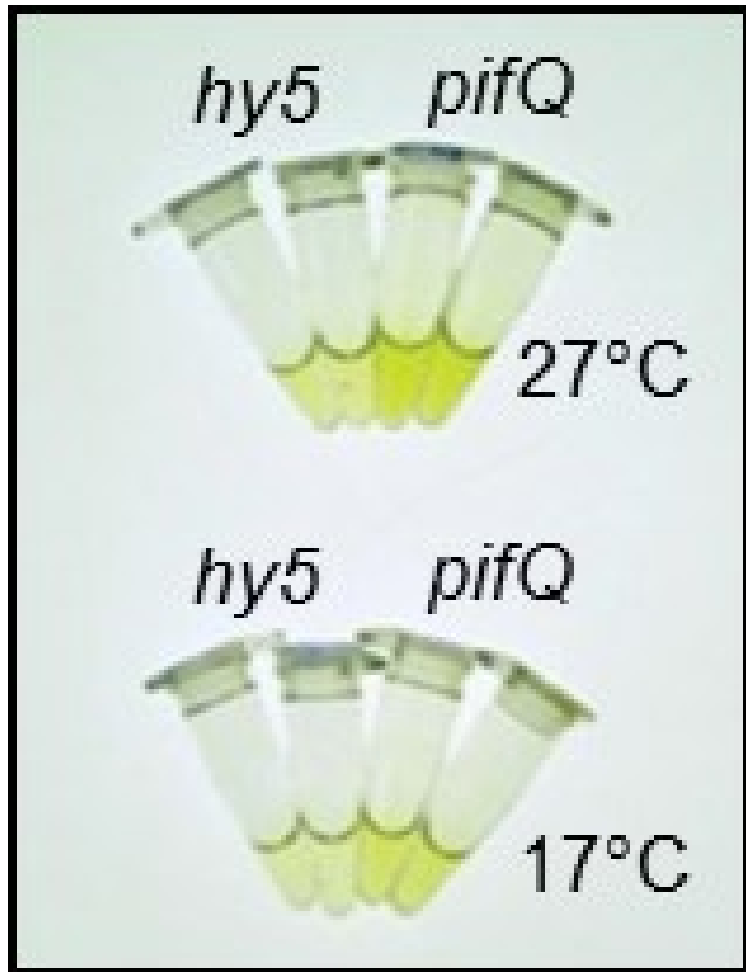
Visual pigments
Retinoids
Vitamin A



Antagonistic transcription factors modulate carotenoid biosynthesis in response to environmental cues

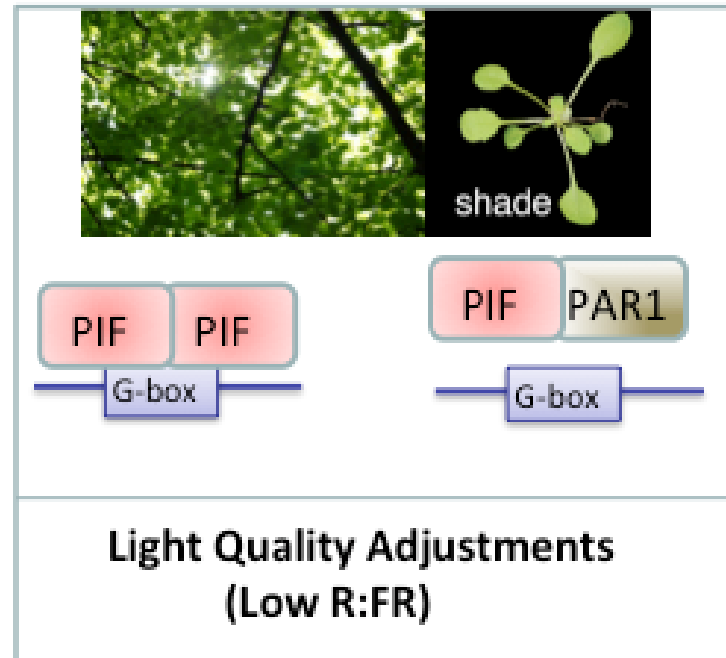
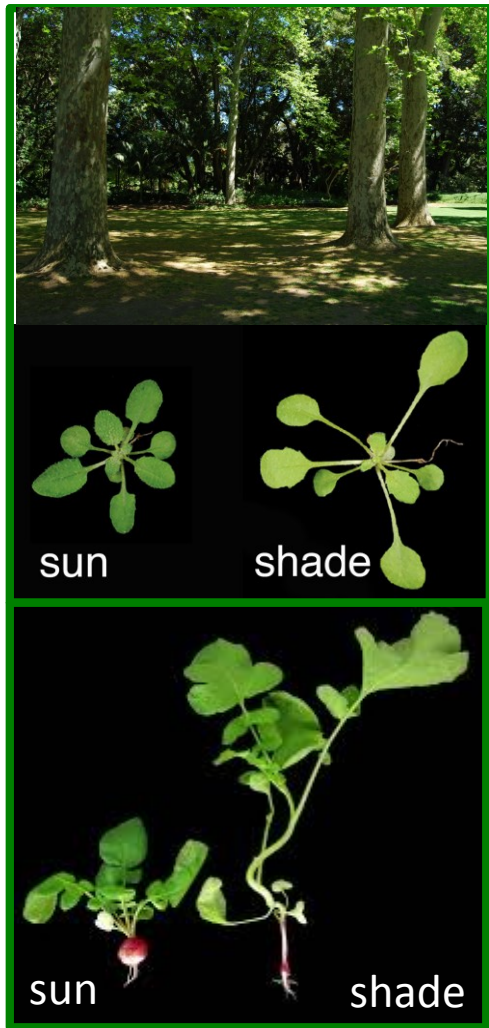


Photopigment content is temperature dependent



Light and Temperature
molecular integrators

Shade induces changes in carotenoid content



Collaborative Effort



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