

P17: Isolation and expression analysis of the PpCO gene encoding a putative homolog of *Arabidopsis* CONSTANS, a critical regulator of photoperiodic flowering, in *Physcomitrella patens*

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Recent researches have started to reveal the molecular mechanisms for the photoperiodic control of flowering time in higher plants. In *Arabidopsis thaliana*, a long-day (LD) plant, CONSTANS (CO) protein activates downstream target genes and promotes flowering under LD condition. It is likely that a high level of expression of CO during daytime is critical for the day-length discrimination. The group of Dr. Reski reported in the MOSS2001 that day length also affects sporophyte development of *Physcomitrella*. We thought that CO might be involved in the day-length dependent sporophyte development as well. As a first step to examine this possibility, we have cloned a cDNA encoding a homolog of Arabidopsis CO protein from *Physcomitrella*. The predicted amino-acid sequence of the putative *Physcomitrella* CO (PpCO) protein shares two significantly conserved regions with *Arabidopsis* CO, i.e., two Zinc Finger domains at N-terminus and a CCT domain at C-terminus, the latter of which is also conserved in CONSTANS-LIKE proteins (COL) and members of TOC1 family. We will report the expression patterns of PpCO in protonema and gametophore under different photoperiods.