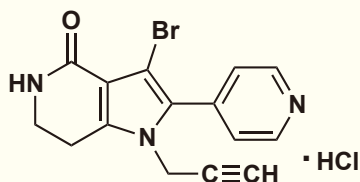
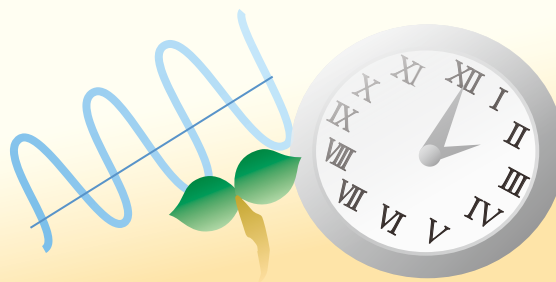


Circadian Period-Lengthening CK1 Inhibitor for Plants



AMI-331 Hydrochloride
5mg / 25mg
[A3352]



The circadian rhythm, which is a roughly 24 hour cycle in the physiological processes of living beings, is also involved in the formation of flowers and the elongation of cells in plants.

AMI-331 is a casein kinase 1 (CK1) inhibitor for plant developed by Prof. Junichiro Yamaguchi at Waseda University and Prof. Norihito Nakamichi at Nagoya University. CK1 is considered to be deeply involved in determining circadian rhythms in mammals, and its inhibitors have been reported to have the effect of lengthening the cycle.^{1,2)} Prof. Yamaguchi *et al.* revealed that AMI-331, a CK1 inhibitor, lengthen circadian rhythm also in plants.^{3,4)} AMI-331 is useful for phosphorylation and circadian rhythm research by CK1 in plants

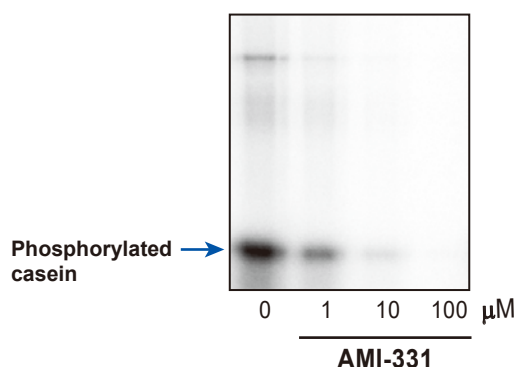


Fig 1. Inhibitory activity of AMI-331
rGST-CKL4, casein and AMI-331 were mixed in reaction buffer and incubated for 2 hours. $IC_{50}=0.7\mu M$
(CKL4 : Casein kinase 1-like protein 4)

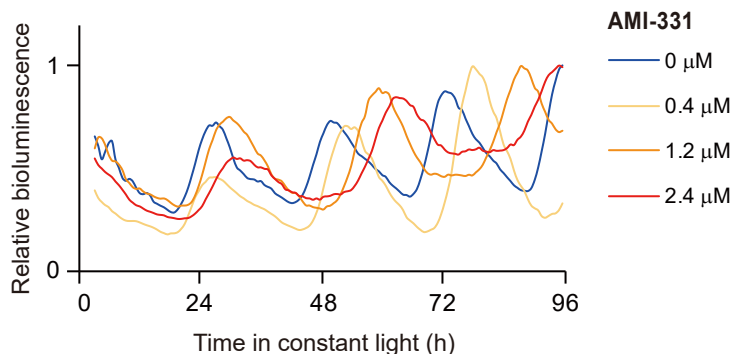


Fig 2. Circadian period lengthening activity of AMI-331
The circadian rhythm was monitored with measuring luminescence of recombinant seedlings which LUC gene was inserted to the clock gene CCA1 promoter.

Every data has been provided by Prof. Junichiro Yamaguchi at Waseda University and Prof. Norihito Nakamichi at Nagoya University. This product was produced under guidance and cooperation of Prof. Yamaguchi and Prof. Nakamichi.

References

- 1) Y. Tsuchiya, M. Akashi, M. Matsuda, K. Goto, Y. Miyata, K. Node, E. Nishida, *Sci. Signal.* **2009**, *2*, ra26.
- 2) Y. Isojima, M. Nakajima, H. Ukai, H. Fujishima, R. G. Yamada, K. Masumoto, R. Kiuchi, M. Ishida, M. Ukai-Tadenuma, Y. Minami, R. Kito, K. Nakao, W. Kishimoto, S. Yoo, K. Shimomura, T. Takao, A. Takano, T. Kojima, K. Nagai, Y. Sakaki, J. S. Takahashi, H. R. Ueda, *Proc. Natl. Acad. Sci. USA.* **2009**, *106*, 15744.
- 3) T. N. Uehara, Y. Mizutani, K. Kuwata, T. Hirota, A. Sato, J. Mizoi, S. Takao, H. Matsuo, T. Suzuki, S. Ito, A. N. Saito, T. Nishiwaki-Ohkawa, K. Yamaguchi-Shinozaki, T. Yoshimura, S. A. Kay, K. Itami, T. Kinoshita, J. Yamaguchi, N. Nakamichi, *Proc. Natl. Acad. Sci. USA.* **2019**, *116*, 11528.
- 4) A. N. Saito, H. Matsuo, K. Kuwata, A. Ono, T. Kinoshita, J. Yamaguchi, N. Nakamichi, *bioRxiv* **2019**, in press.

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