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Identification of the *beta2-tubulin* gene promoter regulating testis-specific expression from *Anopheles stephensi* *

Daisuke S. YAMAMOTO [1], Megumi SUMITANI [2] and Hiroyuki MATSUOKA[1]

[1] *Division of Medical Zoology, Department of Infection and Immunity, Jichi Medical University, 3311–1, Yakushiji, Shimotsuke, Tochigi 329–0498, Japan*

[2] *Genetically Modified Organism Research Center, National Institute of Agrobiological Sciences, 1–2, Owashi, Tsukuba, Ibaraki 305–8634, Japan*

E-mail: daisukey@jichi.ac.jp (DSY)

Some mosquitoes are vectors of infectious diseases, such as malaria, dengue fever, and yellow fever. They transmit the parasite to the host via blood feeding. To control these diseases, vector control is an effective approach. The sterile insect technique (SIT) releasing a large number of sterile individuals has been an effective strategy for population suppression of pest insects, and has been used successfully against some insect species (Dyck *et al*., 2005). In the mosquito, there has been hope that the development of sterile males using genetic engineering will supply sterile individuals more stably than radiation-induced sterility (Catteruccia *et al*., 2009). To induce male sterility by transgenesis, the testis-specific promoter is a useful tool. The *beta2-tubulin* gene (*β2-tubulin*) promoter has been shown to be suitable for testis-specific expression in dipteran insects (Catteruccia *et al*., 2005; Smith *et al.*, 2007; Zimowska *et al.*, 2009).

We identified the *beta2-tubulin* gene promoter region of the malaria vector mosquito *Anopheles stephensi* and analyzed whether the promoter region induces testis-specific expression by transgenesis. We produced transgenic *A. stephensi* expressing *DsRed-monomer* under the control of the *β2-tubulin* promoter. Red fluorescence was detected in the testis of transgenic mosquitoes, and their sperm were labeled with red fluorescence. *DsRed-monomer* protein was expressed in fourth-instar larvae, pupae, and adults of transgenic males. This promoter could be a useful tool for the control of male sterility in *A. stephensi.*

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