

**Anti-anxiety effect of *Acanthopanax senticosus*  
through autonomic nerve regulation**

**Presented at the 135<sup>th</sup> Annual Meeting of the Pharmaceutical Society of Japan (2015)**

**[Study objectives]**

When excessively stressful conditions persist, the action of autonomic nerves (the balance between the activities of sympathetic and parasympathetic nerves) becomes disturbed, causing physical and mental disorders. *Acanthopanax senticosus* (AS) is reported to have a regulatory action on the autonomic nervous system. However, to date, there have been a small number of evidences of this claim from scientific study. Accordingly, the autonomic nerve regulating action of AS was tested using anxiety stress model rats.

**[Study method]**

After 1 week of acclimatization, a bioelectric potential transmitter was attached to each of a group of 6-week-old Sprague-Dawley (SD) strain male rats to investigate the action of autonomic nerves (the balance between the activities of sympathetic and parasympathetic nerves). The rats in the AS group were allowed free access to food compounded with 5% AS extract for a week. On the day of the test, the rats were placed on the edge of elevated bridge (180 cm high; an approximately 5-cm-wide bridge with no wall on either side) for height stress (fear, anxiety stress) loading, after which the period for which they remained there until they moved to a safe room 110 cm from the edge was determined (0 h). Subsequently, 1 mL of 5% AS extract solution was orally administered to the rats, and the time they remained on the elevated bridge (open arm) was determined at 0.5, 1, 2, and 3 h by the same method. The autonomic nerve activity was also investigated at the same time.

**[Results]**

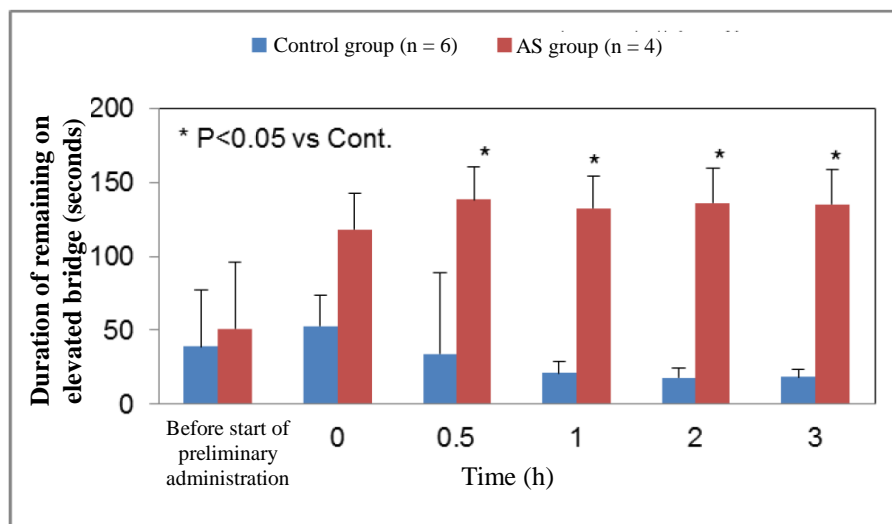
Rats placed on the elevated bridge experienced fear and anxiety and immediately moved into a safe room installed on the elevated bridge. However, the period before moving to the safe room after 0.5 h was significantly prolonged in the AS group compared with the control group (Fig. 1). Although HFnu\*, an index of parasympathetic nerve activity, was not influenced, LFnu\*, an index of sympathetic nerve activity, was significantly decreased in the AS group at 3 h (Fig. 2). Among the autonomic nerve activities, the activity of sympathetic nerves was enhanced in rats that experienced fear and anxiety, but AS was found to suppress such enhancement.

These result suggests that ingestion of *Acanthopanax senticosus* may build up resistance to fear and anxiety stress by regulating the action of autonomic nerves, particularly that of sympathetic nerves.

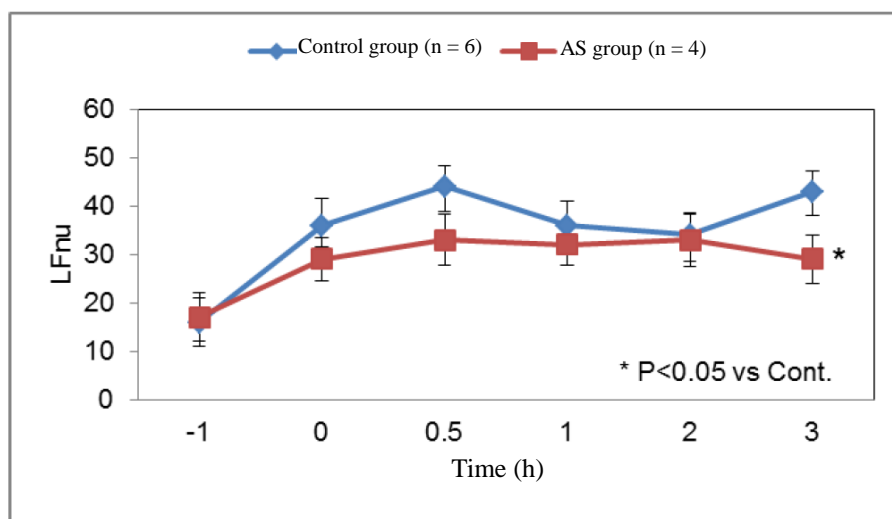
<<Explanation of term>>

\* Indices of autonomic nerve activities

LFnu, an index of sympathetic nerve activity, and HFnu, an index of parasympathetic nerve activity, obtained from electrocardiograph frequency analysis.



**Fig. 1. Influence on time spent on elevated bridge**



**Fig. 2. Influence on sympathetic nerve activity**

<Details>

Academic society:	The 135 <sup>th</sup> Annual Meeting of the Pharmaceutical Society of Japan (2015)
Title:	The induction of anti-anxiety action by the autonomic nerve functional regulation of <i>Acanthopanax senticosus</i>
Authors:	Wataru Nishiguchi <sup>1)</sup> , Chiaki Kusakami <sup>1)</sup> , Shoko Narai <sup>1)</sup> , Momoko Ishino <sup>1)</sup> , Hirotaoka Oikawa <sup>1)</sup> , Miwa Nakagawa <sup>1)</sup> , Hideo Takekoshi <sup>2)</sup> , Masako Hoshizaki <sup>2)</sup> , Sachiyo Nakao <sup>3)</sup> , Takahiko Fujikawa <sup>1,3)</sup>
Affiliation:	1. Department of Pharmacy, Suzuka University of Medical Science 2. Sun Chlorella corp. 3. Mie University Graduate School of Medicine

This document gives the description published in academic journals and at academic meetings and is not intended for sales promotion of commercial products.

[Inquiry about this research report](#)