

## A tribute to Dr. Akio Morimoto

By Naotoshi Murakami and Tatsuo Watanabe



Akio Morimoto. Photo courtesy of Naotoshi Murakami and Tatsuo Watanabe

Akio Morimoto, M.D., Ph.D., died on December 16, 1992. He was 39 years old, too young to leave us. While giving a lecture on the central mechanisms of fever induction at the scientific meeting in Kitakyushu city (located in the northern part of Kyushu island, Japan), he had a stroke (subarachnoid hemorrhage) and collapsed. Although the doctors did their best to save him, their efforts were in vain.

Dr. Akio Morimoto graduated from the Yamaguchi University School of Medicine in 1979. Soon after that, he became an Assistant Professor and started his studies of fever under the direction of one of us (Naotoshi Murakami). At his death, Dr. Morimoto was an Associate Professor and running for the post of Professor at the same laboratory. Everyone believed he would be elected.

Dr. Morimoto made tremendous progress in fever research. Based on his studies in rabbits, he proposed that the two phases of biphasic fever were mediated by separate mechanisms: inside and outside the blood-brain barrier. He thought the first phase was caused by a pyrogen acting on structures outside the blood-brain barrier, presumably peripheral nerves, whereas the second phase was caused by an action within the blood-brain barrier, presumably on hypothalamic neurons. This research led him to study the circumventricular organs. He and Dr. Nakamori showed that systemic administration of lipopolysaccharide induced the production of interleukin-1 in the organum vasculosum of the lamina terminalis, and that this was the mechanism responsible for the induction of the second phase of fever. Dr. Morimoto was also interested in related topics, including regulation of the acute-phase and neuroendocrine responses. He found that, similarly to the fever response, the acute phase response had two separate mechanisms, one inside and the other outside the blood-brain barrier, but that these two mechanisms were independent of prostaglandin E<sub>2</sub>. In contrast, he and one of us (Tatsuo Watanabe) found that prostaglandin E<sub>2</sub> was involved in triggering neuroendocrine responses (such as the induction of adrenocorticotropin by interleukin-1).

In the 1980's, many young Japanese scientists were enthusiastic about studying thermoregulation and fever. Everyone believed Dr. Morimoto would become a leader in environmental physiology in Japan, but his sudden death terminated his rising career. Seventeen years later, we gathered at the 2009 Physiology and Pharmacology of Temperature Regulation Meeting in Matsue, Japan. At this meeting, we have realized that we now have new leaders, Drs. Kanosue, Nose, and Shido, who are working on the development of environmental physiology in Japan. We have also realized that there are many young talented researchers in the field of temperature regulation all over the world. Dr. Morimoto would be happy to see that the future of our field is bright, and that his ideas continue to be developed.

January 26, 2010

Citation of this article (APA style):

Murakami, N., & Watanabe. (26 Jan. 2010). *A tribute to Dr. Akio Morimoto*. Retrieved from: <http://www.feverlab.net/pages/people/History.html>