

## **Action Mecanism of Kampo (Traditional Japanese Herbal) Medicines and its Application to Western Drug Development**

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Current world health issues are referred to frequent appearance of emerging and re-emerging infectious diseases and the increase of multifactorial diseases under increased population of elderly people and changing life-style and environment, in addition to cancer disease, heart disease and cerebrovascular diseases etc.

Traditional Japanese herbal (Kampo) medicines have played important role in the modern medicine of Japan to complement modern western medicines. Kampo medicines have been used as the multi-herbal formula which composed of plant, fungi, animal and mineral-derived traditional herbal medicines. Several important drugs such as ephedrine, quinine, and artemisinin etc. have been discovered from such traditional herbal medicines. Novel immune suppressant, fingolimod has discovered from the constituent of Cordyceps, *Isaria sinclairii*, and developed as the drug for multiple sclerosis.

During past over 30 years, we have studied to clarify pharmacological actions and active ingredients of Kampo medicines as the multi-ingredients drugs to confirm the clinical efficacy for the evidence and science-based medicines. We also have found anti-influenza viral, anti-malaria, anti-Trypanosoma parasites, anti-depressive, adjuvant, and anti-cancer substances from the plant and fungi-derived herbal medicines by in vitro and in vivo bioassays. These include not only low molecular weight ingredients but also bioactive polysaccharides. In this lecture, I'd like to introduce these our research findings. Our results indicates that Kampo medicines are very effective to recover complicated symptoms caused by disturbance of the body system such as immunological, endocrine and neural systems, and traditional medicines are also useful resource for the development of Western drug and nutraceutical.