

be shared for the audience reference. Additional scientific proposals and discussion points on alternative methods for pharmacology studies of TCM product are to be presented to stimulate a fruitful discussion.

Key words: traditional Chinese medicine; pharmacology

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Translating natural products into new drugs and food supplements for aging-associated diseases

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Abstract: Increasing evidence points towards a strong association between cerebrovascular dysfunction and neurodegenerative diseases in aging population. The global disease projection indicates that the healthcare burden derived from these disease problems will continue to rise. Many traditional Chinese medicines (CMs) have been used to prevent and treat the multi-faceted diseases in China and other Asian countries. These herbs are potential rich sources of new leads that may also reveal previously unidentified mechanisms. Previously, our team has initiated a research program to analyze and characterize the bioactive extracts and pure natural components from the CMs using multiple experimental models of vascular and neurodegenerative diseases. Some of the natural bioactive compounds have been further chemically modified to series of derivatives using different organic chemistry approaches (e.g. heterodimer and one-pot synthesis) and proven improved potency. The advantages of zebrafish model for *in vivo* high content screening of CMs will be presented. Our results provide scientific rationales for clinical usage of the CMs and also probably lead to develop reproducible, higher potency and lower toxic agents for healthcare in the future.

Key words: aging associated diseases; cerebrovascular dysfunction; neurodegenerative diseases; traditional Chinese medicines

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Elucidation of possible mechanisms and active ingredients of Kampo (Japanese traditional) medicines on immune and neural system

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Abstract: Many of the diseases are multifactorial and still difficult to treat by only modern medicines, however Kampo medicines, which contain multiple ingredients due to component herbs, seem to be suitable for recovery of such complicated symptoms because these ingredients may attack multiple target sites to improve the symptoms caused by disturbance of whole body system. In Japan, 148 standardized Kampo pharmaceutical preparations have been developed, and covered by national health insurance system, and more than 80% practicing physicians have experience of using the Kampo medicines for the treatment depending on patient's clinical situation, either separately or to complement modern western medicines. In present paper, I'd like to introduce few examples of our studies on elucidations of pharmacological actions and active ingredients of Kampo medicines as multi-ingredients drugs. Although Kampo medicines have been taken orally as the decoction, their hot water extracts contain not only low molecular ingredients but also high molecular ingredients like polysaccharides. Our recent studies suggest that Hochuekkito (HET; Bu-Zhong-Yi-Qi-Tang) prevents respiratory infection through potentiation of mucosal