Topic [6]   Poster(O)/Oral(   )

A Catwalk Automated Quantitative Gait-force Analysis System in Carrageenan-Injected Mouse Model

Beong-Wook Yoo[1] , Hee Chan Kim [2*] and Hyun. Ah. Kim[3*]

1. Interdisciplinary Program, Bioengineering Major, Graduate School, Seoul National University, Seoul 151-742, Korea
2. Department of Biomedical Engineering, College of Medicine and Institute of Medical & Biological Engineering, Medical Research Center, Seoul National University, Seoul 110-744, Korea
3. Department of Internal Medicine, Hallym University Sacred Heart Hospital, Anyang, Korea

E-mail : hckim@snu.ac.kr

Carrageenan-injected arthritis in mouse models exhibits similar abnormal walking patterns to rheumatoid arthritis. Thus, by quantitatively evaluating curative value via a walking pattern analysis, we are able to demonstrate the performance of the treatment. Quantification of a walking pattern analysis was evaluated using carrageenan mouse models injected at various s ites through a Catwalk system. The system includes a glass panel that a mouse may walk on, a surface light to achieve the principle of total reflection, and a video camera to display the mouse movement. Walking patterns were analyzed using a chain of image processing techniques and a parameter analysis on mouse foot movement. We found that multiple parameters are altered in carrageenan mouse models injected at various sites. The automated quantitative gait analysis may be a useful tool to evaluate state of rheumatoid arthritis

References

[1] E.R. Berryman, R.L. Harris, M. Moalli, and C.M. Bagi, *Digigait[TM] quantitation of gait dynamics in rat rheumatoid arthritis model, J Musculoskelet Neuronal Interact*, **9(2)**, 89-92(2009)