

Experimental Studies on the Anti-inflammatory Effect of *Cannabis sativa* based on a Scientometric Analysis

Eunsoo Sohn¹, Sung Hyeok Kim², Sohee Jang², Se-Hui Jung³,
Kooyeon Lee⁴ and Eun-Hwa Sohn^{4*}

¹Principal Researcher, Future Technology Analysis Center, Korea Institute of Science and Technology Information, KISTI, Seoul 02456, Korea

²Graduate student, ³Post-doc and ⁴Professor, Department of Bio-Health Convergence, Kangwon National University, Chuncheon 24341, Korea

This study aimed to explore research on bibliometric features of cannabis by applying scientometric analysis method, and to approach experimental research evaluation based on it. A total of 30,352 articles on cannabis published since 2001 from SCOPUS were analyzed using KnowledgeMatrix Plus and VOSviewer software. Results showed differences in research activities in countries where cannabis is legalized (Canada, the United States, the Netherlands) and Asian countries where its use is illegal. Related to medical cannabis, there has been a noticeable increase in the number of studies on pain, epilepsy, seizures and brain diseases such as multiple sclerosis. In the field of basic research, the number of pharmacological studies of cannabis on the cannabinoid type 1 receptor signaling pathway and inflammation and obesity has increased significantly. Subsequent experimental studies have compared the anti-inflammatory effects of four parts of Korean cannabis such as root, stem, leaf, and bark. Consistent with the predicted results of the scientometric analysis, all parts of *C. sativa* showed inhibitory effects on COX-2, NO/iNOS and TNF- α expression in LPS-stimulated RAW264.7 cells. These attempts provide an experimental research approach based on scientometric assessment.

Key words: Cannabinoids, Cannabis legalization, Medical cannabis, Research trend, Scientometric analysis

[This research was supported by Korea Institute of Science and Technology Information (KISTI) under the research program “Development of Future Technology Analysis System Based on Open Data” and Presidential Committee for Balanced National Development (PCBND) and the Ministry of Land, Infrastructure and Transport (MOLIT) through the pilot project for regional development investment agreement (B0070128000223).]

*(Corresponding author) ehson@kangwon.ac.kr, Tel: +82-33-540-3322