

4th International Conference on

PARASITOLOGY

September 01-02, 2017 | Prague, Czech Republic

Summary of evaluation of anti-protozoal efficacy from medicinal herbs extracts against *Eimeria tenella*, *Toxoplasma gondii* and *Neospora caninum*

Hee-Jeong Youn

Seoul National University, South Korea

Eimeria tenella, *Toxoplasma gondii* and *Neospora caninum* are very important coccidial protozoa in domestic animals and poultry. In order to develop the anti-coccidial drugs, the extracts of 15 medicinal herbs were screeningly evaluated the anti-coccidial efficacies against *E. tenella*. *Sophora flavescens* (*S. flavescens*), *Pulsatilla koreana*, *Sinomenium acutum*, *Ulmus macrocarpa* and *Torilis japonica* (*T. japonica*) were the more effective anti-coccidial activities than the other herbs against *E. tenella*. These five herbs were re-evaluated the anti-protozoal activities against *Toxoplasma gondii* (*T. gondii*) and *Neospora caninum* (*N. caninum*). *S. flavescens* and *T. japonica* were the more effective anti-protozoal activities than the other herbs against *T. gondii* and *N. caninum*. *S. flavescens* and *T. japonica* were evaluated anti-protozoal efficacy of medicinal herb extracts in cell culture. These herbs extracts were fractionated by use of high performance liquid chromatography (HPLC). Nine HPLC fractions from herb extracts of *S. flavescens* and *T. japonica* were evaluated the anti-neosporal efficacy against *T. gondii* and *N. caninum*, and we found six fractions (four fractions of *S. flavescens*, two fractions of *T. japonica*) which showed good anti-neosporal efficacy in this study. In the second test, to characterize the chemical components associated with anti-neosporal activity, specific fractions were isolated by HPLC. Gas chromatography mass spectrometry (GC/MS) was then performed to certify the components and to determine their amount in the herb extracts, and these fractions were evaluated *in vitro* against *N. caninum*. To determine the ability of each fraction to inhibit parasite proliferation, 3H-uracil incorporation was used to determine parasite replication. Four fractions (3 fractions of *S. flavescens*, 1 fraction of *T. japonica*) showed high anti-protozoal efficacy for *N. caninum*. The constituents of the herb extracts (*T. japonica* and *S. flavescens*) were sophoridane (2), matridin-15-one(CAS, 1), furosardonin A(1), tetraisopropylidene-cyclobutane, 5,17,beta-dihydroxy-de-A-Estra-5,7,9,14-Tetraene (1), furanodiene (1), 9,12-octadecadienoic acid (Z,Z)-(CAS, 1). We tested these herbal HPLC fractions in mice, Korean native goats and dogs to determine anti-neosporal efficacy. In this study, we infected Korean isolate of *Neospora* (KBA-2) to mice, pregnant goats and suckling dogs and we evaluated anti-neosporal efficacy of HPLC fractions of herb extracts (*S. flavescens*, *T. japonica*). The mouse which was treated with high dose of *S. flavescens* (7.125 ng/ml) and *T. japonica* (7.125 ng/ml) showed improved survival rate to 25% and 41.7%, respectively and showed decreased brain lesion score to 1.81 and 2.23, respectively. In this experiment, the extracts of *S. flavescens* and *T. japonica* showed good efficacy in protection of *Neospora*, and improved survival rates in mice. We could find out that *S. flavescens* and *T. japonica* could delay abortion days in pregnant goats but it could not prohibit *Neospora* infection or treat Neosporosis.

Biography

Hee-Jeong Youn is a Professor of Department of Veterinary Pathology, College of Veterinary Medicine, Seoul National University, South Korea. His research areas include "Development of anti-protozoal drugs and the parasites for wild rodents and so on".

younhj@snu.ac.kr

Notes: