Chang , Lee-Tain

Distinguished Professor

Professional specialty: Laboratory animal models, Herb medicine, Immunology, Endocrinology, Anti-bacterial and anti-protozoal feed additives, Artificial intelligence device

Courses Taught: Veterinary Physiology, Veterinary Anesthesia, Companion Animal Nutrition

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Education

2002: D.V.M., Ph.D Institute of veterinary medicine, National Chung Hsing University (NCHU)

Professional experience and Rewards

2002-2007: PDF of ABRC, Academia Sinica
2007-2012: Assistant Professor of Department of veterinary medicine, NCHU
2012~2016: Associate Professor of Department of veterinary medicine, NCHU
2016~: Professor
2018~:Distinguished Professor

2013 National Invention and Creation Award / 2013 National Innovation Award / 2015 Taiwan Healthcare and Agricultural Biotech Industries Innovation and Excellence Awards/ 2019 FutureTech Demo and Breakthrough Award/ 2019~2020 National Innovation Award renewal and issue the Excelsior Award



Investigation:

1. Anti-diabetic phytochemicals on diabetic complications and research and development of phytogenics for food animals
2. Anti-coccidial chicken diet additives
3. R&D on artificial intelligence device (egg quality analysis)

Publications:

1. Cytopiloyne, a polyacetylenic glucoside, prevents type 1 diabetes in non-obese diabetic mice. *Journal of Immunology*, 2007(178):6984-6993. (First author)
2. Anti-hyperglycemic effects and mechanism of *Bidens pilosa* water extract. *Journal of Ethnopharmacology.*, 2009(122):379-383
3. Role of Cybr, a cytohesin binder and regulator, in CD4+ T-cell function and host immunity. *Molecular Immunology*, 2009(46):3218-3223
4. Anti-Hyperglycemic Properties of Crude Extract and Triterpenes from *Poria cocos*. *Evid Based Complement Alternat Med*. 2011: 1-8. (Corresponding author)
5. Catenarin prevents type 1 diabetes in non-obese diabetic mice via inhibition of leukocyte migration involving the MEK6/p38 and MEK7/JNK pathways. *Evid Based Complement Alternat Med*. 2011:1-13. (Corresponding author)
6. Combined phytochemistry and chemotaxis assays for identification and mechanistic analysis of anti-inflammatory phytochemicals in *Fallopia japonica*. *PLOS one* 2011(6):e27480- (Corresponding author)
7. Analysis of the Expression of CD45, CD11b and NSA of Blood Cells in Healthy and Tumor-bearing Dogs by

Flow Cytometry. Taiwan Vet. J. 2012(38):233-242.(Corresponding author)

8. Exendin-4 improves resistance to *Listeria monocytogenes* infection in diabetic db/db mice. *J Vet Sci* 2012:(13):245-252 (Corresponding author)
9. Natural Cures for Type 1 Diabetes: A Review of Phytochemicals, Biological Actions, and Clinical Potential. *Current Medicinal Chemistry*. 2013(20): 899-907, (First author)
10. Antidiabetic Effect and Mode of Action of Cytopiloyne. *Evid Based Complement Alternat Med*. 2013:1-13. (Integrative & complementary medicine;7/24)(First author)
11. Herbal therapies for type2 diabetes mellitus: Chemistry, biology and potential application of selected plants and compounds. *Evid Based Complement Alternat Med*. Article 2013, ID 378657, 33 pages (First author)
12. Effect of *Bidens pilosa* on infection and drug resistance of *Eimeria* in chicken. *Research in Veterinary Science*. 2015(98):74-81. (corresponding author)
13. *Bidens pilosa* formulation improves blood glucose homeostasis and β-cell function in men: A pilot study. *Evid Based Complement Alternat Med*.; 2015, Article ID 832314 (corresponding author)
14. Beneficial effect of *Bidens pilosa* on body weight gain, food conversion ratio, gut bacteria and coccidiosis in chickens. *PLoS ONE*; 2015, 11(1): e0146141. (First author)
15. Cytopiloyne, a polyacetylenic glucoside from *Bidens pilosa*, acts as a novel anticandiadal agent via regulation of macrophages. Journal of ethnopharmacology; 2016(184):72-80.(Corresponding author);
16. Data on the effect of cytopiloyne again *Listeria monocyotgenes* infection in mice. Data in Brief, 2016(7):995-998. (Corresponding author)
17. Field trial of medicinal plant, *Bidens pilosa*, against eimeriosis in broilers. Scientific reports, 2016 srep24692. (First author)
18. *Bidens pilosa* and its active compound inhibit and adipogenesis and lipid accumulation via down-modulation of the C/EBP and PPARγ pathways. 2016 srep24285. (Corresponding author)
19. Anti-coccidial properties and mechanisms of an edible herb, *Bidens pilosa*, and its active compounds for coccidiosis. Scientific Reports, 2019(9):2896. (Corresponding author)
20. Toxicity study of *Bidens pilosa* in animals. Journal of Traditional and Complementary Medicine, 2020(10):150-157 (Corresponding author)
21. Functional and mechanistic studies of tow anti-coccidial herbs, *Bidens pilosa* and *Artemisia indica*. Plant Med, 2021, DOI: 10.1055/a-1527-9715 (Corresponding author)

Patents:

1. Polyacetylenic compounds (US 7763285 B2)(EP 1955701)
2. Butanol extract of *Bidens pilosa* (US 8048860 B2)
3. 咸豐草之正丁醇萃取物 (I347191) / 聚炔類化合物(I370738)
4. 咸豐草及聚乙炔化合物之組合物及其用途(I465242)/*Bidens pilosa* and polyacetylenic compounds for prevention and treatment of coccidiosis(US9072312B2)/*Bidens pilosa* dan senyawa-senyawa poliasetilenik untuk pencegahan dan pengobatan koksidiosis(IDP000050884)
5. 咸豐草改善腸道菌相與動物健康(I664974)(I672148)
6. 咸豐草與其化合物於增加肌肉生長與減少脂肪累積之用途(I664990)
7. 以 PDIA4 蛋白作為糖尿病之診斷、監測及治療之標的(I627957)

Technique transfer:

1. Ta Foong Chemical & Pharmaceutical CO., LTD.：2014
2. Nice Garden Industrial CO. LTD.: 2014/2016/2021

Updated:2021/08/01