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Z.P. Cui, Y.X. Qin and H. Li 1888

Print Ads "Three-Dimensional" Form of Research
Y.H. Zhang 1892

Research on the Measurements of the Disequilibrium Degree of the Urban Agglomeration Traffic Supply and Demand
C.B. Li, Q.Y. Zhao, R.X. Guo and L.L. Tian 1896

Research on the Optimization of the Enterprise Logistics Distribution Based on ACO Algorithm
Y.J. Feng, X. Zhang and X.H. Liu 1900

Study on the Influence of Demographic Dividend Factors on Dependency Ratio
Y.B. Yang, Y. Liu and X.F. Kong 1904

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L.Z. Zhao, S. Chen, Q. Fang, D. Zhang, Y.P. Zhu and F. Fang 1911

CD147 Promote Proliferation in Prostate Cancer Cell
Q. Fang, F. Fang, Y.L. Liu, W.P. Li and L.G. Wang 1915

Chilling Injury Symptoms and Enzyme Activity Analysis of Lingwu Long Jujube
T.Y. Wang, X.H. Li, L. Chen and X. Liu 1919

Effect of Sulfur Dioxide Treatment on the Shelf Life of Red Grape
H.Y. Ma, K. Gao, X.H. Li, H.H. Chen, Y.Y. Li, Q. Li, L. Zhang and P.Y. Zhao 1924

Effectiveness of Vaporous Hydrogen Peroxide for the Decontamination of *Bacillus atrophaeus* in Confined Space
T. Liang, K. Zhou, J. Gu, R. Yan and Z.Z. Ji 1928

Evaluation of Combined Treatments of Natural Fibers: Kenaf, Abaca and Oil Palm Fibers Using Micromechanical and SEM Methods
S. Sreenivasan, S.A. Ibraheem, S. Sulaiman, B.T.H.T. Baharudin, M.K.A. Mohd Ariffin and K. Abdan 1932

Experimental Study *Oviductus ranae* for the Change of α-SMA and TGF-β in Hepatic Fibrosis Rat Liver
Y. Li, X.O. Li, F. Hao, L. Zhang, L. Liu and X.H. Hu 1940

Exploration of Integrated Teaching Mode of Pharmaceutical Analysis
G.X. Yuan, H.Y. Li, Y. Sheng, L.H. Zhang and P.G. Du 1944

Indigenous Microbial Active Formula System and Field Application
S. Lin, G. Wu, S.Y. Zhang, J. Xie, Y. Xiao, S.Z. Guo, N. Su and S.K. An 1948

Optimization and Application of Liposome-Mediated Transfection of pEGFP-N1 in FRT Cells
G.Y. Xiang, Y.Q. Zhang, Y.X. Zang, H.F. Zhu, Z.X. Zhang, L.T. Zhou, Z.Q. Tong, Y. Li and F. Hao 1953

Pecan Oil Influences Learning and Memory and NF-κB Levels in the *Hippocampus* of Rats after MWM Test
Y. Li, X.Y. Zhao, X.L. Jin, G.Q. Sun, S. Liu and Z.L. Luo 1957

Proliferation Inhibition and Apoptosis Induction of Juglone on Human Cervical Cancer HeLa Cells
W. Zhang, W.H. Zhu, Y. Li, J. Luo and S.J. Lv 1961

Protective Effects of the Extract of *Juglans mandshurica* Maxim on Endothelial Cell Damage
W.H. Zhu, W. Zhang, Y.X. Qin, N. Shen, L.J. Zhao and X.Y. Zhao 1965

Research on Improvement of Sulfate Reduction Capability of Sulfate Reducing Bacteria by Plasma Mutagenesis
Y.Y. Zhu, T. Liu and J. Zhang 1969

Study of the Protective Effect of *Schizandra chinensis* Polysaccharide on Oxidative Damage of Mouse Spermatozoa *In Vitro*
D.H. Zhao, Y. Zhang, Z. Yuan, M.L. Li, W.Y. Luo and X.P. Han 1973

The Application of Translational Medicine in Pharmacological Teaching
X.D. Huang, K. Ren and Y.C. Wang 1978

Changes in the Quality of Soybean during Warehouse Storage
W.Q. Yang, H.D. Liu, X. Liu, X.H. Li, C.X. Shao, M.M. Hao and Y.B. Jiang 1982

An Experimental Study on the Rainfall-Runoff Progress of Wheat under Different Slope Angle
N.N. Zhao, F.L. Yu, C.Z. Li, J. Liu and H. Wang 1986

Cognitive Behavior Therapy Ameliorates Non-Motor Symptoms in Parkinson's Disease
C.Y. Wang, D. Li, S.K. Yu, M.H. Wang, Q. Guan and C.H. Li 1995

Study on the Shelf Life Quality of Kiwifruit with Different Maturity
H.H. Chen, K. Gao, X.H. Li, H.Y. Ma, Y.Y. Li, Q. Li, X.H. Huang, M.M. Hao and L. Chen 2006

Quantitative Analysis of *Radix Rehmanniae* from Genuine Producing Area by Near Infrared Spectroscopy
H.Y. Gong, C.X. Xie, M.X. Wu, Y.X. Cui, Z.H. Chen and Y. Bai 2010

The Study of Stability of Processing Grease Storage Temperature on Soybean
K.F. Hao, M.M. Hao, L. Chen, D. Wu, C.H. Song, J.J. Li and Q. Li 2014

Hardness of the *Schizolobium amazonicum* Wood
D.H. de Almeida, R.S. Cavalheiro, F.S. Ferro, T.H. de Almeida, A.L. Christoforo, C. Calil Junior and F.A. Rocco Lahr 2018