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Elucidating the Mechanisms of Cell Fate Determination in Vertebrate Embryogenesis

Dr. Klaus-Heinrich Bauer, Dr. Kim Soo-Jin, Dr. Alejandro Martinez-Guerrero

Keywords: cell fate, embryogenesis, Sox2, Oct4, pluripotency, lineage specification, zebrafish model

2.

Conformational Dynamics of Human SERCA1a in ATP-Induced Calcium Transport

Ananya Mukherjee, Lars van der Veen, Hiroshi Nakamura

Keywords: SERCA1a, calcium transport, cryo-electron microscopy, molecular dynamics, ATPase activity, conformational dynamics

3.

Adaptive Mechanisms of Viral Evolution in Host-Pathogen Dynamics: A Microbiological Perspective

Svenja Müller, Chen Ming-Hao, Aisha El-Nour

Keywords: viral evolution, host-pathogen dynamics, RNA viruses, mutation rate, viral polymerase, phylogenetic analysis, immune evasion

4.

Elucidating the Role of Ribosomal Proteins in Eukaryotic Translation Efficiency

Sophie M. Drechsler, Tan Bo-Qiang, Ankit Kapoor

Keywords: Ribosomal proteins, Eukaryotic translation, Ribosome profiling, CRISPR-Cas9, Protein synthesis, Translation efficiency, mRNA-ribosome complex

5.

Unveiling the Kinetics of Protein Folding through Advanced Computational Biophysics Models

Svenja M. Richter, Arunima N. Patel, Kenjiro Matsui

Keywords: protein folding, molecular dynamics, computational biophysics, energy landscapes, folding intermediates, amino acid sequences, machine learning simulations

6.

Assessing Habitat Fragmentation Impact on Biodiversity in Temperate Forests

Lorenz M. Fischer, Arun K. Patel, Kim Yong-Jae

Keywords: biodiversity, habitat fragmentation, temperate forests, species richness, ecosystem services, conservation strategies

7.

CRISPR-Cas9 Mediated Gene Editing in Arabidopsis Enhances Abiotic Stress Resistance

Dr. Johan M. Verhoeven, Chen Li-Xia, Dr. Nneka U. Oluwaseyi

Keywords: CRISPR-Cas9, Arabidopsis thaliana, gene editing, abiotic stress resistance, drought tolerance, salinity tolerance, plant biotechnology

8.

Interhemispheric Connectivity and Dynamics of Cognitive Flexibility in the Human Brain

Felix J. Müller, Priya Natarajan, Li-Yang Zhao

Keywords: interhemispheric connectivity, cognitive flexibility, corpus callosum, fMRI, DTI, neural networks, task-switching