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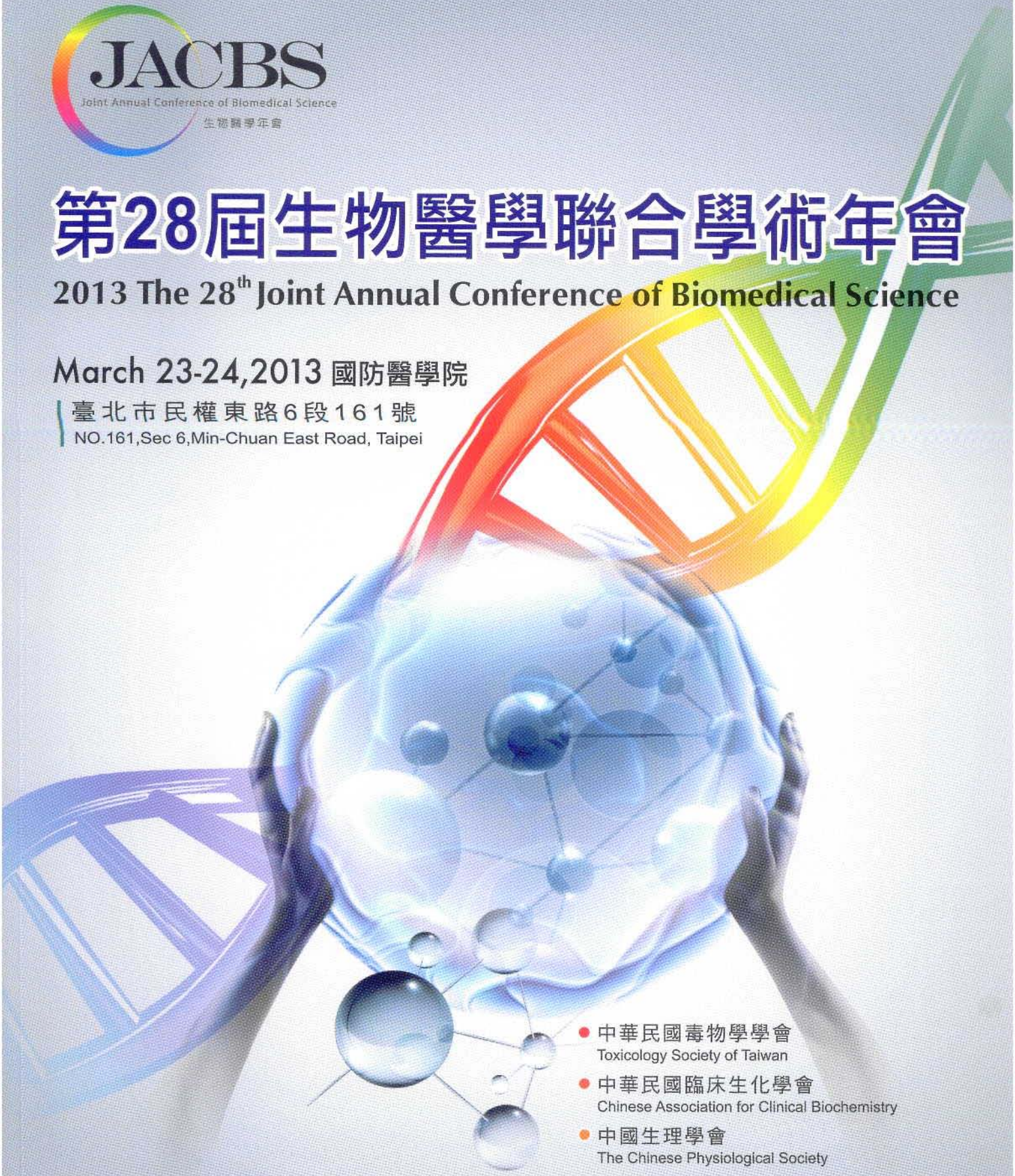

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  The Chinese Society of Cell and Molecular Biology

大會手冊

-induced MMP-9 Expression is Mediated through eptor Tyrosine Kinases and NF-κB Pathways in neal Epithelial Cells

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grounds:
increasing evidences show that the dry eye induces inflammation on the r surface through increases of pro-inflammatory mediators and catalytic nes. Matrix metalloproteinases (MMPs), MMP-9 especially, have been nstrated to play a key role in the pathogenesis of inflammation and tissue healing in cornea. Many studies have shown that MMP-9 can be induced ral stimuli such as IL-1β, which may contribute to collagen degradation issue remodeling in the inflammatory responses of cornea. However, the nisms underlying IL-1β-induced MMP-9 expression in cornea remain

rials and Methods:
Here we applied the Statens Seruminstitut Rabbit Corneal Cells (SIRCs) to igate the mechanisms of IL-1β-induced MMP-9 expression. Data obtained Western blot, RT-PCR, co-immunoprecipitation, cell fraction isolation, and ter luciferase activity analyses coupled to using pharmacological inhibitors ous signaling molecules, including c-Src (PP1), EGFR (AG1478), PDGFR 296), PI3K (LY294002), and NF-κB (Bay11-7082).

lts:
this study, we demonstrated that IL-1β-up-regulated MMP-9 protein, A, and promoter activity, which were attenuated by PP1, AG1478, AG1296, 7082, or Bay11-7082. Moreover, IL-1β can stimulate Akt phosphorylation was attenuated by pretreatment with PP1, AG1478, AG1296, or 294002. These signalings lead to both IκBα degradation and NF-κB p65 ocation in SIRCs. Interestingly, we found that IL-1β stimulates c-Src, R, and PDGFR complex formation resulting in up-regulation of MMP-9.

clusion:
These results revealed that IL-1β-induced MMP-9 expression is mediated ugh c-Src-dependent transactivation of EGFR and PI3K/Akt cascade linking F-κB activation in SIRCs.

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Study on The Mechanisms of PPE8-induced Apoptosis Through Endoplasmic Reticulum Stress.

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Backgrounds:
To investigate the mechanisms of cell death induced by the new synthetic compound of naphthoquinone treatment in human non-small lung carcinoma cell line H1299.
Materials and Methods:
The effect of PPE8 on H1299 cells viability was obtained by MTS assay. Mophological changes of ER observed by immunofluorescence microscopy. Expression levels of ER-related protein were determined to investigate their role in PPE8-induced cell death by western blotting assay. The effect of PPE8-induced ER stress and cell viability of H1299 cells were investigated by siRNA knockdown of IRE1.
Results:
PPE8-induced cell death was on dose-dependent manner. PPE8-induced ER morphological changes. PPE8-induced ER stress was evidenced by increased expression of p-IRE1 and p-JNK in H1299 cells. Knockdown of IRE1 expression by siRNA reduced PPE8-induced JNK phosphorylation and cell death in H1299 cells.
Conclusion:
Our data demonstrated that PPE8 can induce cell death through ER stress in human non-small lung carcinoma cell line H1299. Thus, PPE8 may serve as an anticancer agent by inducing ER stress in human non-small cell lung cancer.

Mechanism of Endomitosis Inhibited by PKA forms

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grounds:
The phenomenon of polyploidy, also known as endomitosis, is composed uption of cytokinesis and re-synthesis of DNA. The deregulation of cycle may cause physiological abnormality. It's reported that endomitosis s inhibited by cAMP-PKA signaling axis. However, the relationship of ole factors and endomitosis is still not clear. In this study, we investigate mechanism in inhibition of endomitosis by PKA isoforms in human leukemia (HEL) cells.

rials and Methods:
Human erythroleukemia (HEL) cells were cultured in RPMI 1640 containing 3, 1 mM sodium pyruvate, 2 ml glutamine and 100 IU/ml streptomycin/ in the humidified incubator at 37°C with 5% CO2. Cells were collected 24 hours for a 4-day period after drug treatment. PMA (25nM), a common used for induction of polyploidization in HEL cells, and forskolin (FSK, adenylyl cyclase activator, is used for raising cAMP level. The cell cycle were detected with immunolabeling and Acurri C6 flow cytometry, and ed with Flowjo software.

lts:
our results, the raising of p21 activity started at second day after PMA ent and FSK can reverse PMA-induced effect. The levels of cyclin B1 and 15 were not significantly altered between PMA treatment and PMA/FSK tment. Also, the level of cyclin D3 was indeed increased in PMA-treated

clusion:
P21, known as cell cycle inhibitor, may has its specific function in the s of endomitosis. Furthermore, cyclin D3, involved in G1 phase, is indeed important role in endomitosis. To investigate the effect of cAMP on ce related factors, we will continually study the alternation of cell cycle-ed factors under PMA treatment and PMA/FSK co-treatment. Next, we ermine which PKA isoforms is the downstream of cAMP and clarify the y mechanism of cAMP-PKA signaling pathway.

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The effects of marine-derived compound, WSS-10 on 6-hydroxydopamine model of Parkinson's disease

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Backgrounds:
Parkinson's disease (PD), an important neurodegenerative disorder, is characterized by the progressive loss of dopaminergic (DA) neurons in the substantia nigra results in motor defects. However, current treatments for PD are limited and drug of PD is needed urgently. Our previous studies had found that marine-derived compound, WSS-10 provides neuroprotection against 6-hydroxydopamine (6-OHDA)-induced neurotoxicity by anti-apoptotic and anti-inflammatory actions. The present study, we would further examine the cellular mechanisms of neuroptrotetive effect of WSS-10 in Parkinson's animal models.
Material and methods:
Zebrafish larvae were treated with 6-OHDA in the absence or in the presence of WSS-10. Motor activities (total distance and velocity) were monitored by animal behavior system (SINGA). In Parkinson's rat model was induced by lesion of middle forebrain bundle (MFB). After lesion, amphetamine-induced rotation behavior was evaluated every week. One month after lesion, rats were sacrificed after reperfusion and the section of brains were performed in immunohistochemical analysis.
Results:
WSS-10 markedly rescued the deficit of loco-motor activity in 6-OHDA-treated zebrafish. In addition, WSS-10 also attenuated the number of amphetamine-induced rotation behavior and DA neuronal death in 6-OHDA rat model of PD. After knock down of DJ-1 protein expression by siRNA could decrease the protective effects of WSS-10 on 6-OHDA-induced cytotoxicity in neuron cells.
Conclusion:
We confirmed the therapeutic efficacy of WSS-10 in zebrafish and rat PD model. Moreover, we strong proposed that WSS-10 is a promising candidate for the treatment of Parkinson's disease through DJ-1 mediated cascade.