Proceedings of the 12th Chinese International Peptide Symposium

Peptides

Chemistry and Biology

Editors
Keliang Liu, Maosheng Cheng and Qingbin Meng

Chemical Industry Press

CPS 2012
Shenyang

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Proceedings of the 12th Chinese International Peptide Symposium
July 2-6, 2012, Shenyang, China

Editors

Keliang Liu
Beijing Institute of Pharmacology and Toxicology
Beijing, China

Maosheng Cheng
Shenyang Pharmaceutical University
Shenyang, China

Qingbin Meng
Beijing Institute of Pharmacology and Toxicology
Beijing, China

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· Beijing ·

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Preface

The 12th Chinese International Peptide Symposium (CPS-2012), hosted by Beijing Institute of Pharmacology and Toxicology, was held in Shenyang, China, July 2-6, 2012. More than 350 participants, from 14 countries and districts as well as exhibitors from 26 related companies attended this symposium. The goal of this symposium was to provide a forum for scientific discussions, cooperation and friendship between the international and Chinese scientific communities on recent developments in the exciting field of peptide science.

The symposium consisted of 15 sessions with 44 invited lectures, 31 oral and 80 poster presentations including innovative synthetic method, structure and conformation of peptides and proteins, peptide and protein material sciences, technological advances in peptide purification and analysis, peptide drug discovery and design, bioactive peptides, ligand-receptor interactions, and the chemistry-biology-interface and challenging problems in peptides.

The enthusiastic cooperation and excellent contributions were gratifying and the active response of the invited speakers contributed to the success of the symposium. The presentations were of excellent caliber and represented the most current and significant aspects of peptide science.

Dr. Kyung-Soo Hahm and Dr. Gang Liu were the recipients of 'Cathay Award' sponsored by the H. H. Liu Education Foundation, offered for their outstanding contributions in peptide science and the Chinese International Peptide Symposium. Dr. Edouard C. Nice and Dr. Jiaxi Xu were the recipients of 'Xiaoyu Hu Memorial Award' sponsored by Hainan Zhonghe (Group) Co., Ltd., offering their great contributions in peptide science, peptide application and Chinese International Peptide Symposium. Five young outstanding scientists were selected by the Xiaoyu Hu Memorial Awarding Committee to receive awards sponsored by Hainan Zhonghe (Group) Co., Ltd.

It is our pleasure to acknowledge professor Youshang Zhang, academicians of Chinese Academy of Sciences, and professor Rui Wang for their kindness in supporting and serving as the chairman of the Cathay Awarding Committee and the Xiaoyu Hu Memorial Awarding Committee respectively. The success of the 12th Chinese International Peptide Symposium was largely due to the dedication, enthusiasm and hard work of the organizing committee, who for the most part consisted of volunteers.

We greatly appreciate the generous financial assistance of the sponsors and donors listed on the following pages, especially the National Nature Science Foundation of China, whose support was indispensable to make the meeting a great success.

Keliang Liu

The 12th Chinese International Peptide Symposium (CPS-2012)

July 2-6, 2012, Shenyang, China

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Chinese Peptide Symposium

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Second	1992	**Yucang Du** *Shanghai Institute of Biochemistry, CAS*	Hangzhou
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Eleventh	2010	**Rui Wang** *Lanzhou University*	Lanzhou
Twelveth	2012	**Keliang Liu** *Beijing Institute of Pharmacology and Toxicology*	Shenyang

Abbreviations

Abbreviations used in the proceedings are defined below:

AA	acrylic acid
Acm	acetamidomethyl
AD	Alzheimer's disease
ADEPs	acyl depsipeptides
AFM	Atomic Force Microscopy
ALI	acute lung injury
AMP	antimicrobial peptides
APP	amyloid precursor protein
APS	ammonium persulfate
AuNPs	gold nanoparticles
Aβ	amyloid β peptide
BACE1	β-site APP cleaving enzyme 1
BAL	Bronchoalveolar lavage
BALF	Bronchoalveolar lavage fluid
BBB	blood brain barrier
Bcl-2	B-cell lymphoma 2
Bcp	4′-[*N*-[(4′-phenyl)phenethyl] carboxamido]phenylalanine
BHA	benzhydrylamine
BK	bradykinin
BM	basement membrane
BMEA	*N*,*N*-bis(2-mercaptoethyl)amide
BSA	bovine serum albumin
CCK	cyclic cystine-knot
CD	circular dichroism
CFU	Colony-Forming Units
Cha	cyclohexylalanine
CLSM	confocal laser scanning microscopy
CMCs	critical micelle concentrations
CPPs	cell-penetrating peptides
CS	Chitosan

DCM	dichloromethane
Dec	decanoyl
D_h	hydrodynamic diameter
DIC	*N*,*N*′-diisopropylcarbodiimide
DIC	disseminated intravascular coagulation
DIEA	*N*,*N*-diisopropyl ethylamine
DLS	dynamic light scattering
DMF	*N*,*N*-dimethyl formamide
Dmt	2′,6′-dimethyltyrosine
DPDS	2-dipyridyl disulfide
DXMS	deuterium exchange mass spectrometry
EBSS	Earle's balanced salt solution
ECM	extracellular matrix
EIA	enzyme-immunoassay
EPL	expressed protein ligation
ES	endostatin
ESI-MS	electrospray ionization mass spectrometry
F-moc	9-fluorenylmethoxycarbonyl
FpAT	fibrinopeptide A, human, truncated
GPCR	G-Protein Coupled Receptor
HATU	2-(7-aza-1*H*-benzotriazole-1-yl)-1,1,3,3-tetramethyluronium hexafluorophosphate
6-HB	6-helical bundle
HBTU	*O*-benzotriazole-*N*,*N*,*N*′,*N*′-tetramethyluronium hexafluorophosphate
HDACs	histone deacetylases
HDACIs	histone deacetylase inhibitors
HDFs	human dermal fibroblasts
HFIP	hexafluoroisopropanol
hMCRs	human melanocortin receptors
HOAt	1-hydroxy-7-azabenzotriazole
HOBT	*N*-hydroxybenzotriazole
HTRF	homogenous time-resolved fluorescence

Icv	intracerebroventricular
IR	infrared
KD	killidin
LPS	lipopolysaccharide
LSCM	laser scanning confocal microscopy
LTA	lipotechoic acid
3-MA	3-methyladenine
MBom	4-methoxybenzyloxymethyl
MBS	*N*-(*m*-maleimidobenzoyloxy) succinimide
MD	molecular dynamics
MDA	malondialdehyde
MIC	minimal inhibitory concentration
MPO	myeloperoxidase
MS	mass spectrometry
α-MSH	alpha-melanocyte-stimulating hormone
NK1	neurokinin
NMM	*N*-methylmorpholine
PAA	poly(acrylic acid)
PBD	pocket-binding domain
PC	phosphatidylcholine
PCD	programmed cell death
PCR	polymerase chain reaction
PDEδ	δ-subunit of retinal rod phosphodiesterase
PE	phosphatidylethanolamine
PI	phosphatidylinositol
pI	isoelectric point
PLA_2s	phospholipases A_2
POMC	proopiomelanocortin
Rheb	Ras homologue enriched in brain
RMF	relative median fluorescence
RP-HPLC	reverse-phase high pressure liquid chromatography

SAR	structure-activity relationship
SFTI-1	sunflower trypsin inhibitor-1
SPIONs	superparamagnetic iron oxide nanoparticles
SPPS	solid-phase peptide synthesis
SPR	surface plasmon resonance
SUV	small unilamellar vesicles
TBS	tris-buffered saline
TBTA	tris(benzyltriazolylmethyl)amine
TEM	transmission electron microscopy
TFA	trifluoroacetic acid
Tis	triisopropylsilane
TM	thrombomodulin
TNF-α	tumor necrosis factor-alpha
Trt	trityl
TSA	trichostatin A