中药全球化联盟
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

Summary report

Session 3: Natural products I - Cancer, virus, and immunoregulation

(9:00-12:00, July 26, 2026)

Chairperson: Prof. **Lie-Fen Shyur**, Academia Sinica

Co-chairperson: Prof. Pei-Wen Hsiao, Academia Sinica

Panelists: Prof. Clara BS Lau, The University of Hong Kong

Prof. Piyarat Srisawang, Naresuan University

Prof. Yu-Ling Lin, Academia Sinica

- ✓ 32 abstracts were submitted (8 abstract did not show up)
- ✓ Taiwan: 14; Thailand: 6; China: 6 Hong Kong: 4; Macau: 1; USA: 1

25 abstracts: anti-cancer-related; others: 7

- ✓ 11 presented/ 16 invited for oral presentation

Paper NO.	Title
0012	Purification, chemical characterization and anticancer adjuvant potential of a fucose-rich sulfated polysaccharides from Ganoderma lucidum
0031	Effects of Zerumbone on MAPK signaling and apoptosis-related proteins in A549 cells
0032	Evaluation of Natural Vitamin B12 Derivatives for Inhibitory Activity against Peptidyl Arginine Deiminases
0074	20(S)-Protopanaxadiol Disrupts the CXCR4–CXCL12 Axis to Induce Pyroptosis and Remodel Stroma for Pancreatic Ductal Adenocarcinoma Suppression
0087	Integrating transcriptomic and cellular analyses to elucidate the uptake and lysosomal processing of GMI
0095	Rosmarinic acid alleviates cisplatin-induced muscle atrophy by targeting the mTOR/p70S6K pathway and modulating gut microbiota
0098	Radix Astragali Polysaccharide-Mediated GP2 Targeting for Enhanced Oral Mucosal and Systemic Immunity
0103	A medicinal orchid-derived active pharmaceutical ingredient suppresses BRAF inhibitor-resistant melanoma growth through regulating AR/MAPK-associated signaling pathways and primary metabolism
0118	RC-1 triggered B cell activation to augment the efficacy of temozolomide against glioblastoma
0120	Sarcodia suae polysaccharides promote M1 polarization in THP-1-derived macrophages
0123	Targeting FGFR signaling with an Asteraceae plant extract suppresses proliferation in 5-fluorouracil-resistant colorectal cancer cells
0134	Therapeutic potential of Calotropis gigantea dichloromethane fraction against DEN-induced HCC in rats
0141	Identification of Potential Therapeutic biomarkers in a Diabetes-Associated Hepatocellular Carcinoma Rat Model
0158	Aryl Naphthalene Lignans Demonstrating Broad-Spectrum Antiviral Effects via Targeting v-ATPase and Autophagy
0161	Protective effect of Calotropis gigantea stem bark extract against hepatic alterations in a rat model of colorectal cancer
0162	Preventive effects of Calotropis gigantea (L.) Dryand. stem bark extract in a rat model of colorectal cancer induced by dimethylhydrazine and dextran sulfate sodium
0169	HB-89 exerts liver cancer-specific antitumor effects by targeting the RNF14/CPT1A axis, remodeling lipid metabolism, and inducing ferroptosis
0202	Natural compound PGG exhibits anti-tumor and anti-metastatic effects via targeting human epidermal growth factor receptor 2-dependent signaling pathways in colon cancer
0227	Boeravinone A, an undescribed molecular glue drives fumarate hydratase assembly to suppress inflammatory response in chronic kidney disease
0231	Bavachinin in Oral Squamous Cell Carcinoma: Therapeutic Effects and Synergy with Cisplatin
0236	Cytotoxic, cell apoptosis, colony formation and anti-migratory activity of Andrographis paniculata leaf extract in cervical HeLa cancer cells
0248	A Chinese Herbal Medicine–Derived Compound (CD004) Reprograms Tc17 Cells and Synergizes with Cisplatin to Enhance Anti-Tumor Immunity
0255	The Underlying Anticancer Mechanism of a Novel Phytochemical and its Derived Single Compound in Non-small Cell Lung Cancer
0256	Medicinal Plant-derived Phyto-interventions Enhance Anti-tumor Immunity against Advanced Melanoma.
0270	The anticancer effect of calactin and calotropin in HCT116 and HepG2 cells.
0272	sEV-PD-1-apigenin is a dual-action therapeutic that enhances immune activation and ECM1 degradation in the tumor microenvironment of Triple-negative breast cancer
0290	Overpowering Stress for Targeting Metastatic Prostate Cancer
0334	Meloaxilines A–E, five unprecedented monoterpenoid indole alkaloids from Melodinus axillaris, suppress colorectal cancer by targeting the iron metabolism pathway
0354	Self-Augmenting Nanoplatform CPT@HCuS-TF for Enhanced Chemodynamic-Photothermal Synergistic Tumor Therapy
0357	Platelet-Mimicking Supramolecular Nanomedicines with Precisely Integrated Prodrugs for Cascade Amplification of Synergistic Chemotherapy
0366	Punicalin and Punicalagin from Punica granatum are Nanomolar Inhibitors of Acid Sphingomyelinase with Distinct Mechanisms
0379	The role of Chinese medicines in targeting non-coding RNAs to overcome cancer drug resistance: Mechanisms and clinical translation challenges

NO-3-1

Purification, chemical characterization and anticancer adjuvant potential of a fucose-rich sulfated polysaccharides from *Ganoderma lucidum*

Yi-An Lin [a,#], Ching-Yi Lu[b,#], Wei-Lun Qiu [b,c], Chi-Hsein Chao [b,c],

Mei-Kuang Lu [a,c,d,*], Chia-Chuan Chang[b,*], Tung-Yi Lin [a,c,d,*]

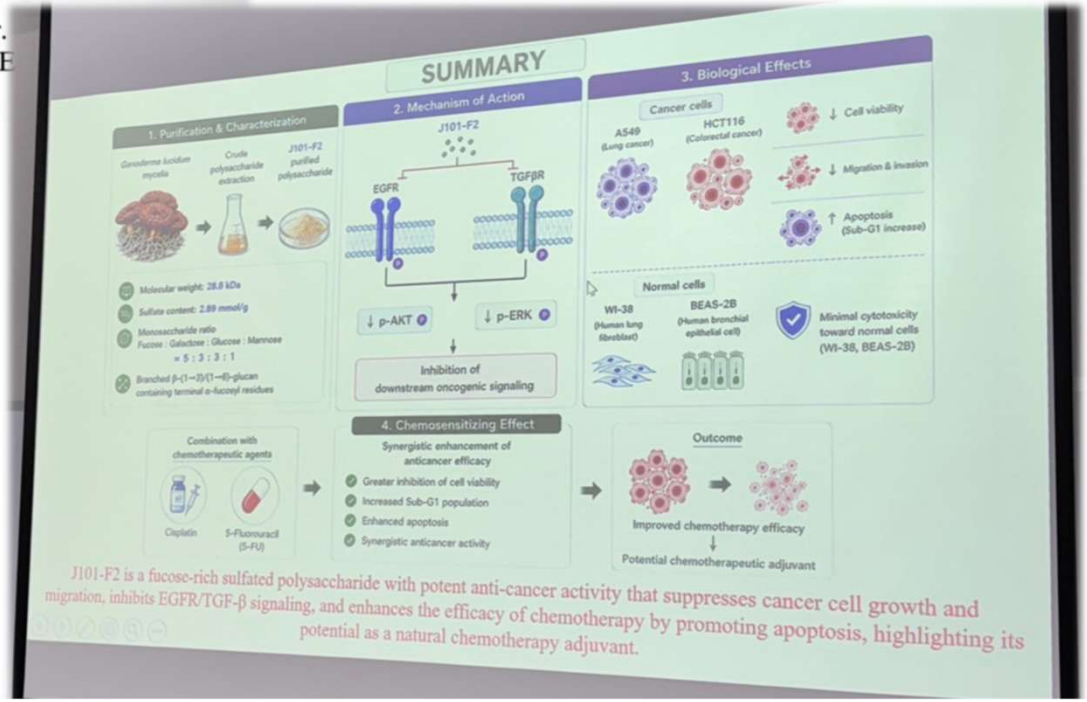
[a] Institute of Traditional Medicine, National Yang Ming Chiao Tung University, Taipei

[b] School of Pharmacy, College of Medicine, National Taiwan University, Taipei 10050,

[c] School of Chinese Medicine, National Yang Ming Chiao Tung University, Taipei

[d] Traditional Chinese Medicine Glycomics Research Center, National Yang Ming Chiao Tung University, Taipei

* Corresponding author: Dr. Mei-Kuang Lu, E-mail: meiklu@nycu.edu.tw; Dr. Chuan Chang, E-mail: chiachang@ntu.edu.tw; Dr. Tung-Yi Lin, E biotungyi@gmail.com/tylin99@nycu.edu.tw



A fucose-rich sulfated polysaccharide fraction was identified for anti-lung adenocarcinoma and CRC cells, showing synergistic cytotoxicity with cisplatin or 5- flurouracil

Radix Astragali Polysaccharide-Mediated GP2 Targeting for Enhanced Oral Mucosal and Systemic Immunity

NO-3-7

Niping Chen[a], Lifeng Li[a], Simon Q B Han[a]*

[a] School of Chinese Medicine, Baptist University, 999077, Hong Kong

* The corresponding authors, E-mail address:simonhan@hkbu.edu.hk

Developed an RAP-based nanoplatform “OVA/MSN@RAP” to a scalable, safe strategy to overcome oral vaccine barriers and enhance global immunization efficacy.

Radix astragali polysaccharide (RAP)
MSN: mesoporous silica nanoparticles

Methods: RAP-conjugated MSNs (150~300 nm) were synthesized via sol-gel templating. Physicochemical properties, gastrointestinal stability, and GP2-specific uptake were characterized using DLS, TEM, and Caco-2/Raji B co-cultures. Antigen loading and release kinetics were additionally assessed. Immunogenicity and safety were evaluated in orally immunized mice for detailed immune profiling.

Results: OVA/MSN@RAP exhibited superior stability in simulated gastrointestinal fluids. RAP functionalization significantly promoted M-cell transcytosis via GP2 binding, enhancing Peyer's patch accumulation compared to unmodified MSNs. Immunization elicited robust systemic IgG and mucosal sIgA responses, activated T cells, and provided protection against challenge without toxicity. Enhanced targeting directly correlated with superior immune outcomes.

Sarcodia suae polysaccharides promote M1 polarization in THP-1-derived macrophages

NO-3-10

Yi-Cheng Pan[1], Pei-Yu Yen[1], Wei-Cheng Yuan[1], Pei-Yi Chu[1], Yeong-Jiunn Jang[1] and Yang-Chang Wu[1,2,3*]

[1] Chinese Medicine Research and Development Center, China Medical University Hospital, Taichung

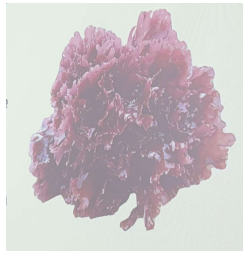
[2] Master Program of Pharmaceutical Manufacture, College of Pharmacy, China Medical University, Taichung

[3] Graduate Institute of Integrated Medicine, College of Chinese Medicine, China Medical University, Taichung

* The corresponding author: Y.-C. Wu; E-mail address:

The crude SSP-treated THP-1 cells exhibited M1 phenotype and promoted secretion of proinflammatory cytokines (IL-6, TNF-α, etc), iNOS level and NO production; NFκB phosphorylation.

SSP: an potential immunomodulatory agent



蘇氏海木耳: red algae endemic to Taiwan

Identification of Potential Therapeutic biomarkers in a Diabetes-Associated Hepatocellular Carcinoma Rat Model

NO-3-13

Seksan Phopaed[1], Piyarat Srisawang[1], Supawadee Parhira[2],

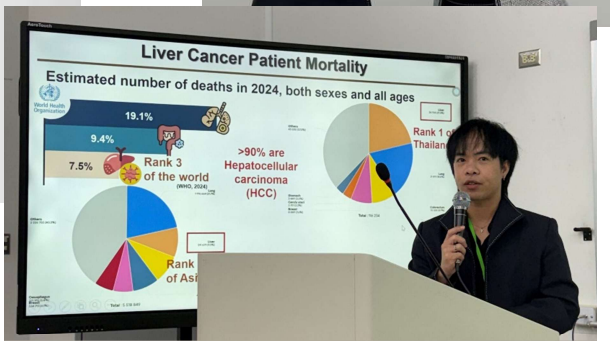
Julintorn Somran[3], Sittiruk Roytrakul[4], and Dumrongsak Pekthong[2,*]

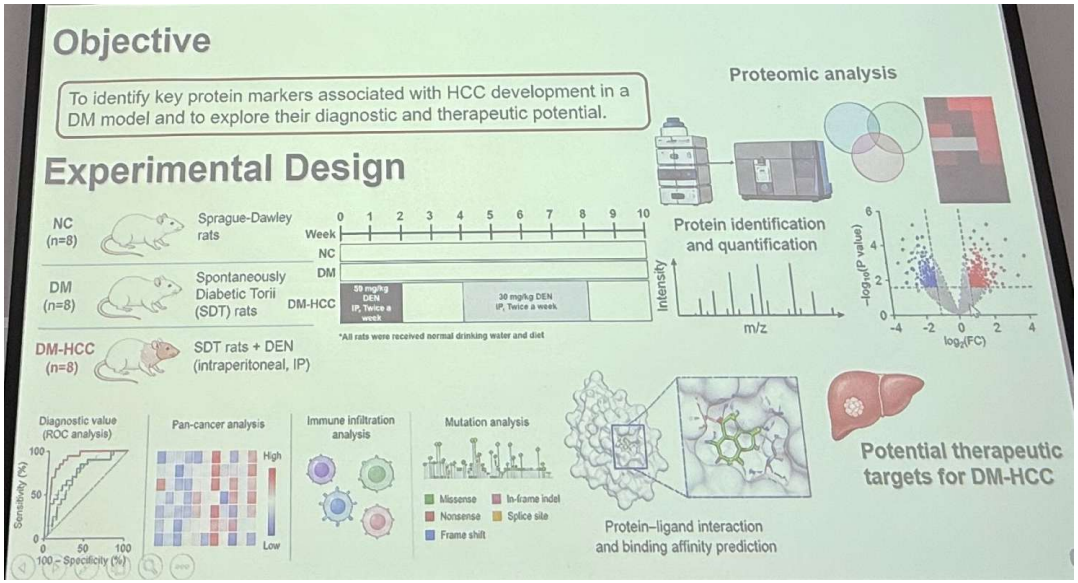
[1]Faculty of Medical Science, Naresuan University, Phitsanulok

[2]Faculty of Pharmaceutical Sciences, Naresuan University, Phitsanulok

[3]Faculty of Medicine, Naresuan University, Phitsanulok

[4]National Centre for Genetic Engineering and Biotechnology, National Science and Technology Development Agency, Pathum Thani





- ✓ Cancer relevance, immune infiltration, mutation profile, protein-compound interaction using molecular docking
- ✓ 19 proteins significantly altered in DM-HCC group
- ✓ Three proteins are potential biomarkers with compounds, such as digoxin, showing strong binding affinity

Aryl Naphthalene Lignans Demonstrating Broad-Spectrum Antiviral Effects via Targeting v-ATPase and Autophagy

NO-3-14

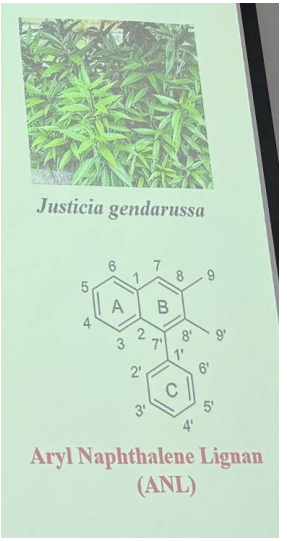
Sixia WU, Ka-Hei Terence LAM, Abdullah Al Mamun, and Hongjie ZHANG*

School of Chinese Medicine, Baptist University, SAR,

Justicia plant (爵床屬)-derived aryl naphthalene lignin (ANL)

Screened > 20 synthetic ANL derivatives for anti-vesicular stomatitis virus (VSV) and H5N1 influenza virus using cell-based pseudovirion inhibition assays

D1A1-5, a promising broad spectrum antiviral lead, disrupting v-ATPase-mediated lysosomal degradation

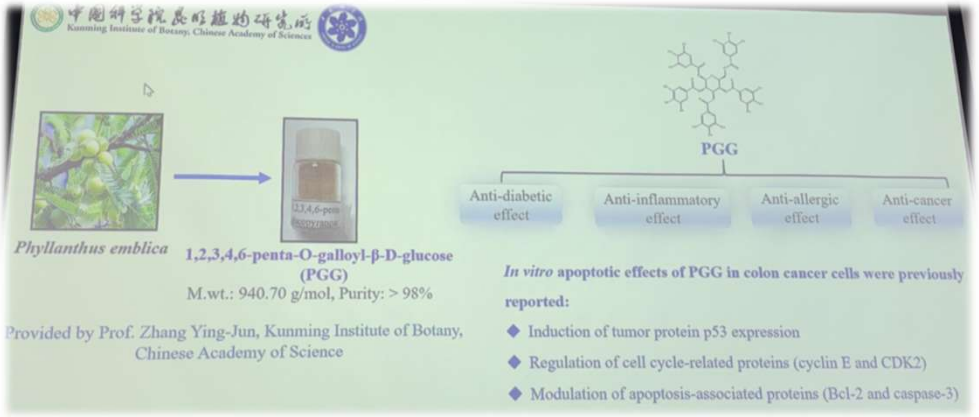


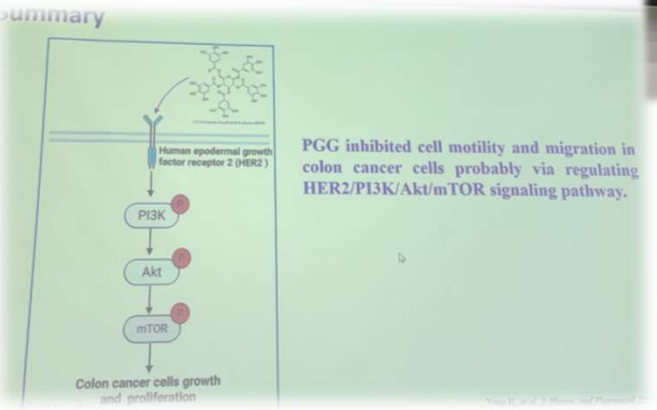
Natural compound PGG exhibits anti-tumor and anti-metastatic effects via targeting human epidermal growth factor receptor 2-dependent signaling pathways in colon cancer

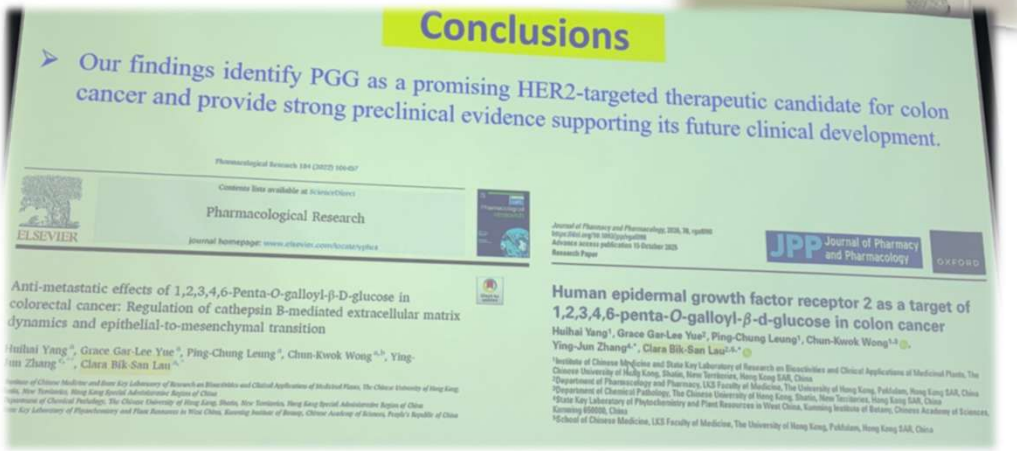
NO-3-18

Huihai Yang[1,5], Grace Gar-Lee Yue[2], Ping-Chung Leung[1], Chun-Kwok Wong[1], Ying-Jun Zhang[3], Clara Bik-San Lau[2,4,*]

[1] Institute of Chinese Medicine, The Chinese University of , SAR; [2] Department of Pharmacology and Pharmacy, LKS Faculty of Medicine, The University of Hong Kong, Hong Kong SAR; [3] State Key Laboratory of Phytochemistry and Natural Medicines, Kunming Institute of Botany, CAS, Kunming; [4] School of Chinese Medicine, LKS Faculty of Medicine, The University of Hong Kong, Hong Kong SAR; [5] School of Pharmacy, Department of Medicine, Shenzhen University, Shenzhen.







Confirmed PGG directly binds to HER2 using DARTS and thermal shift assays

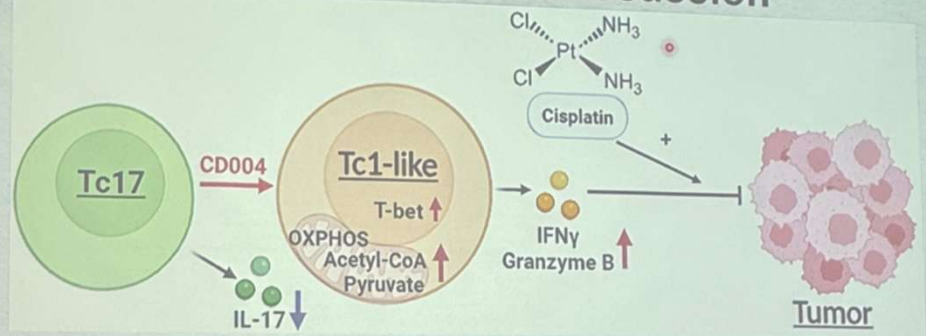
NO-3-22

A Chinese Herbal Medicine–Derived Compound (CD004) Reprograms Tc17 Cells and Synergizes with Cisplatin to Enhance Anti-Tumor Immunity

Chi-Yen Hsieh[1], Chuan-Teng Liu[2], Ying-Chyi Song[3], Hung-Rong Yen[*,2,4,5]

[1] M.D./Ph.D. program, School of Medicine, and Graduate Institute of Biomedical Sciences, College of Medicine, China Medical University, Taichung, ; [2] Research Center for Traditional Chinese Medicine, Department of Medical Research, China Medical University Hospital, Taichung,; [3] Graduate Institute of Integrated Medicine, College of Chinese Medicine, China Medical University, Taichung; [4] School of Chinese Medicine, College of Chinese Medicine, China Medical University, Taichung; [5] Department of Chinese Medicine, China Medical University Hospital, Taichung

Conclusion and Discussion



1. CD004 **reprograms Tc17 cells** from **IL-17-producing to IFN-γ-producing** CD8+ T cells, accompanied by **increased T-bet expression**.
2. CD004 **remodels mitochondrial metabolism** in Tc17 cells.
3. Reprogrammed Tc17 cells exhibit **enhanced anti-tumor activity** and **synergize with cisplatin**.
4. Further studies are required to **define the underlying signaling and metabolic mechanisms.**

Reprogram Tc17 cells to enhance its anti-tumor activity and synergy with cisplatin

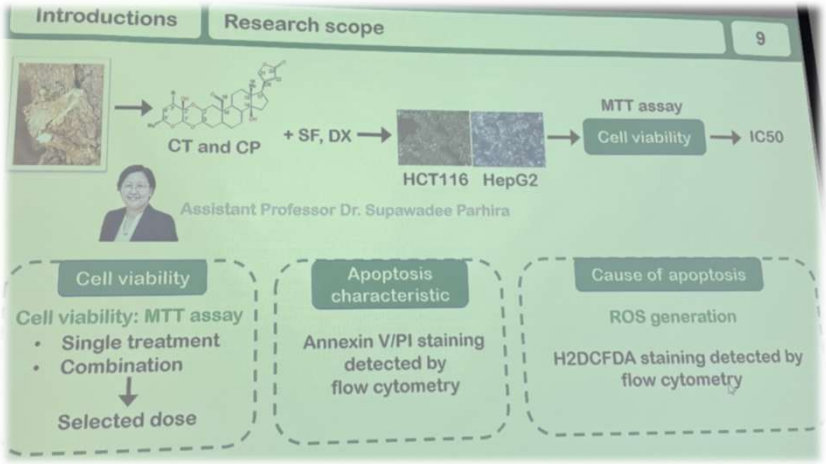
The anticancer effect of calactin and calotropin in HCT116 and HepG2 cells.

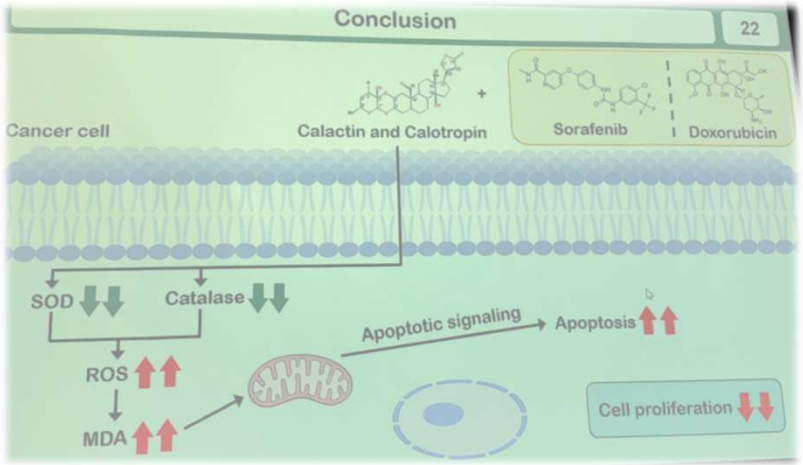
NO-3-25

Pudnumbut Wonglueng [1,2], Supawadee Parhira [2, 3, 4], Dumrongsak Pekthong [2, 4, 5], and Piyarat Srisawang [1, 2*]

[1] Department of Physiology, Faculty of Medical science, Naresuan University, Phitsanulok 65000.
[2] Center of Excellence for Innovation in Chemistry (PERCH-CIC), Faculty of Pharmaceutical Sciences, Naresuan University, Phitsanulok 65000.
[3] Department of Pharmaceutical Technology, Faculty of Pharmaceutical Sciences, Naresuan University, Phitsanulok 65000.
[4] Center of Excellence for Environmental Health and Toxicology, Faculty of Pharmaceutical Sciences, Naresuan University, Phitsanulok 65000.
[5] Department of Pharmacy Practice, Faculty of Pharmaceutical Sciences, Naresuan University, Phitsanulok 65000.

Cardenolide glycoside (強心苷) from *Calotropis gigantean* L. Dryand (牛角瓜)





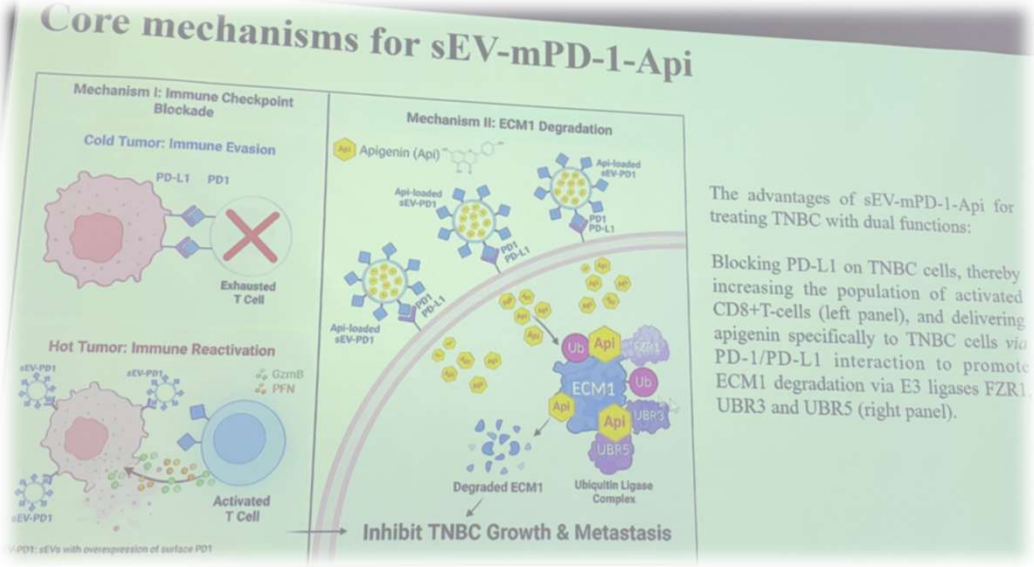
sEV-PD-1-apigenin is a dual-action therapeutic that enhances immune activation and ECM1 degradation in the tumor microenvironment of Triple-negative breast cancer

NO-3-26

Keyang Xu

School of Chinese Medicine, Macau University of Science and Technology

An innovative design of extracellular vesicles overexpressing programmed cell death protein 1 loaded with apigenin, specifically targeting tumors and promoted ECM1 degradation



In summary

Our data suggest that circulating sEVs have elevated ECM1 protein levels, which can enhance BC cancer metastasis and growth *in vivo* and *in vitro*.

Based on this findings, we have screened apigenin, an herbal compound, that significantly reduce ECM1 expression levels in BC. We also developed PD1-engineered sEVs as a drug delivery system to deliver apigenin to BC.

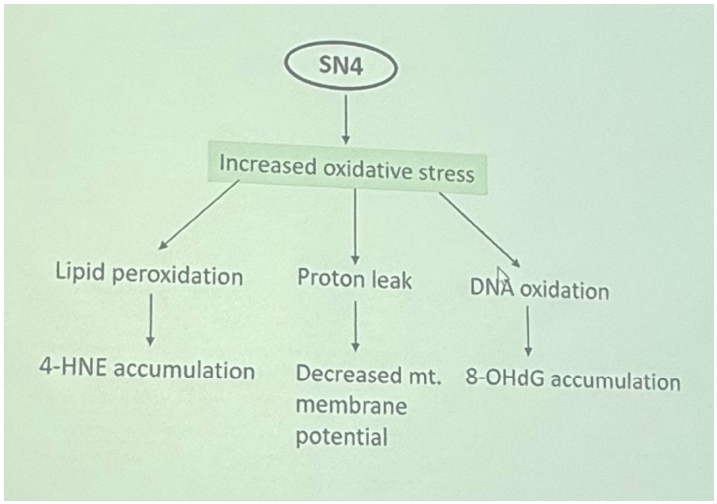
These findings suggest that PD1-engineered sEVs exhibit enhanced BC-targeting capabilities by suppressing ECM1 expression.

Overpowering Stress for Targeting Metastatic Prostate Cancer

NO-3-27

*Tarneet Kaur[1,2,3], Wei-Kai Chien[1], Shih-Chuan Hsieh[1], Yu-Chih Yang[1], Yi-Te Lin[1], Yi-Chun Ye[1], Hui-Ming Chen[1,2,3] and Pei-Wen Hsiao[1,2,3]**

Agricultural Biotechnology Research Centre, Academia Sinica, Taipei[1]; Molecular and Biological Agricultural Sciences (MBAS)-TIGP[2]; and Graduate Institute of Biotechnology, National Chung-Hsing University, Taichung[3]



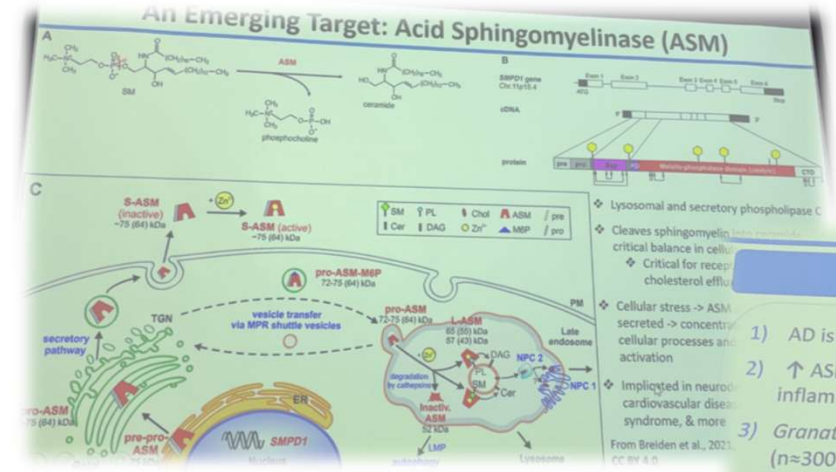
- ✓ SN4, a chemically defined extract, inhibited metastatic PC cells via activating PERK and inducing ER and mitochondria stress along with potentially inducing immunogenic cell death.
- ✓ SN4 reduced tumor growth and improved mouse survival in syngeneic mouse model.

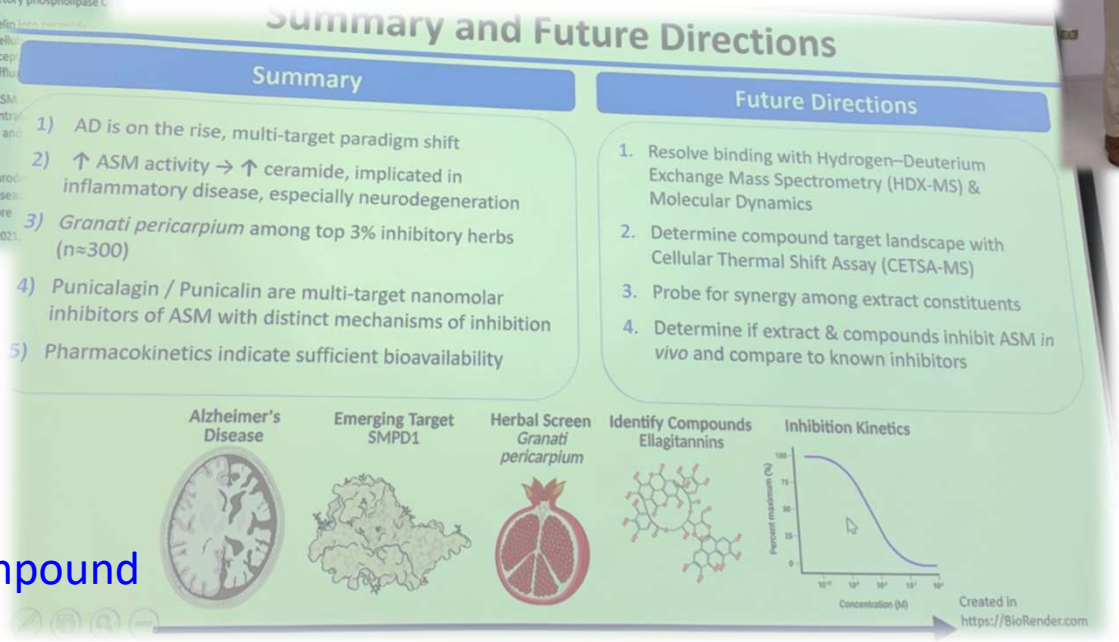
Punicalin and Punicalagin from *Punica granatum* are Nanomolar Inhibitors of Acid Sphingomyelinase with Distinct Mechanisms

NO-3-31

Trevor J. Bush[1], Wing Lam[1*], Yung-Chi Cheng[1*]

[1]Department of Pharmacology, Yale University, New Haven, CT 06511

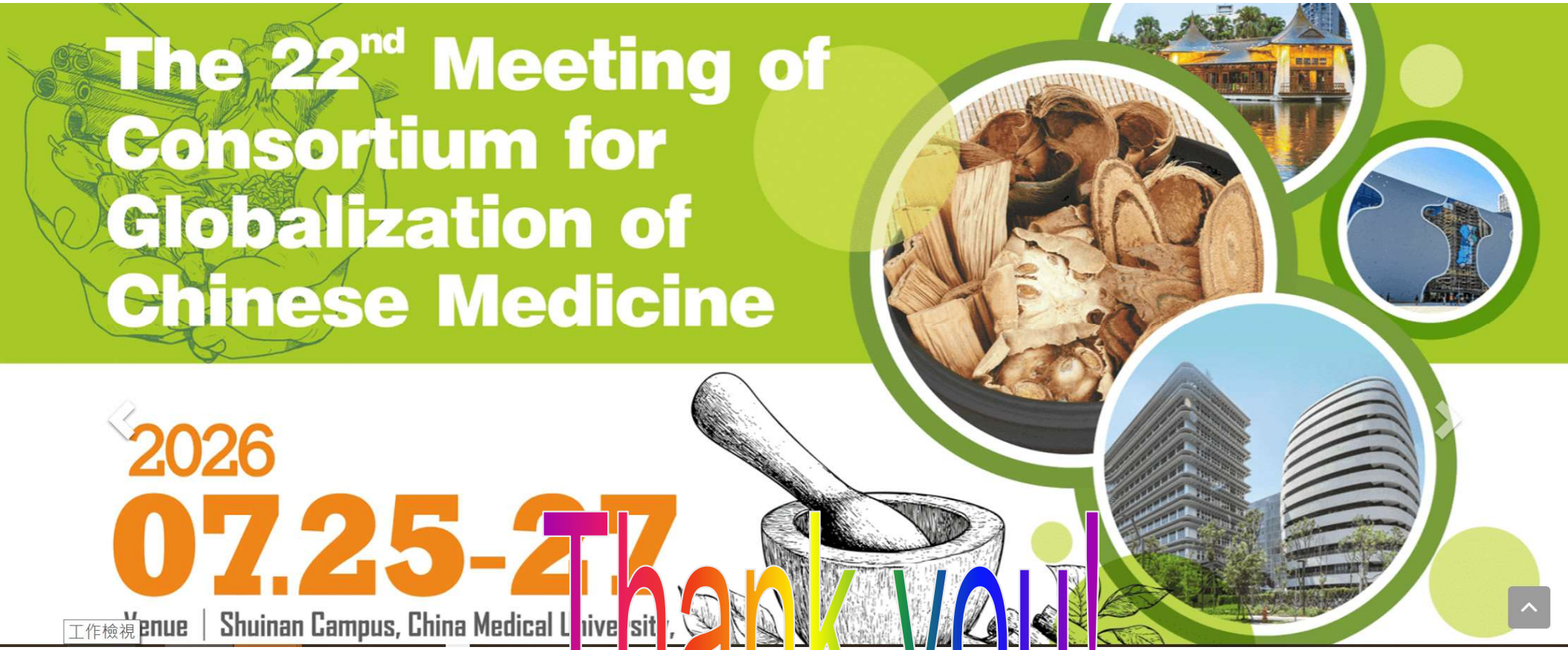




Punicalin (石榴皮鞣素)
Punicalagin (安石榴苷)
Ellagitannin, a type of phenolic compound


Poster
Exhibition
壁報論文展示地
1F 及 6F


Panelist
Panelist
Panelist



工作檢視

中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE