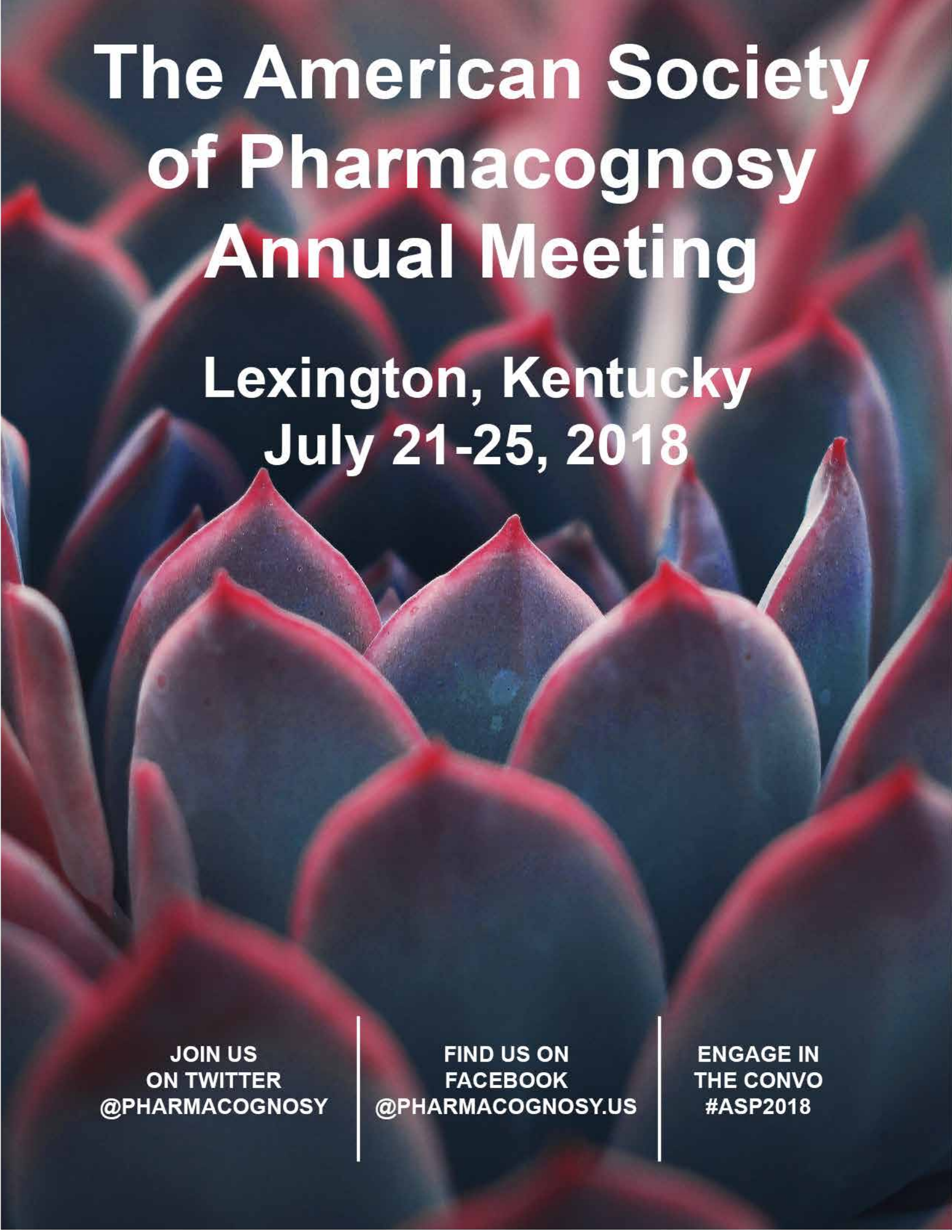
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Oral Presentations

O-01

CHEMICAL INVESTIGATION OF SACCHARIDES OF DENDROBIUM CASSIOPE

Jhih-Jhong Wang[1], Mei-Kuang Lu[2] and Chia-Chuan Chang[1]
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Dendrobium Cassiope (DC), a hybrid of *Dendrobium nobile* (♀) and *D. moniliforme* (♂), is a medicinal herb cultivated in Taiwan. *Dendrobium* shows several bioactivities, such as anti-hyperglycemic, beneficial for cardiovascular diseases, and immunity modulation. The present study utilized centrifugal filtration for rapid purification of the polysaccharides (PSs) of DC. The PSs were purified by DEAE-cellulose column chromatography and characterized by nuclear magnetic resonance spectroscopy (NMR) and monosaccharides composition analysis. The major PS (**DC-PS1**) is an glucomannan with a molecular weight over 3 kDa, and the ratio of Man-Glc is 100 : 12.5, and with partial 2-*O*- and 3-*O*-acetyl groups. The backbone of **DC-PS1** is β-(1→4)-mannose and β-(1→4)-glucose, with 1,6-α-mannosyl branches and β-mannosyl terminals. The molecular weight of **DC-PS1** was estimated to be 3.308 kDa, and the degree of polymerization (DP) is 20, by high performance size exclusion chromatography (HPSEC) and diffusion-ordered NMR (DOSY).

O-02

TRITERPENOID SAPONINS FROM THE ROOTS OF GLYCYRRHIZA GLABRA

Qingyao Shou[1], Ping Jiao[1], Mei Hong[1], Qi Jia[1], Indra Prakash[2], Sangphyo Hong[2], Bin Wang[2], Gil Ma[2], Allison Bechman[2]*
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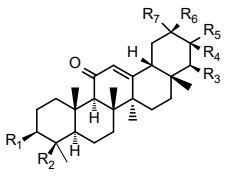
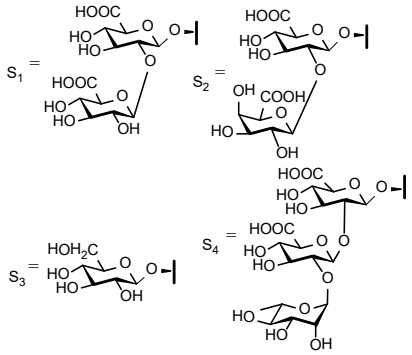
With a rising consumer demand for reduced-sugar in food and beverages, the discovery of natural low-/zero- calorie sugar alternatives brings more attention to global food industries and researchers. Licorice, the root of *Glycyrrhiza* species is one of the oldest and well-known sweet materials in the world. Its extract is widely used as a flavor in foods, beverages, and dietary supplements. Glycyrrhizin as one of the major metabolites obtained from Licorice, is up to 50 times as sweet as sucrose, and is approved as a natural sweetener and/or flavor in many countries. Except for glycyrrhizin, several other triterpene saponins from Licorice plants were identified sweet. This drove us to look deep into glycyrrhizin analogs from *G. glabra*. With the strategy of the LC/MS guided mining, ten new oleanane-type triterpenoid saponins (Glabasaponin A-J) were isolated from the roots of *G. glabra* together with a known compound Macedonoside A. The structures of the compounds **1**–**10 (**Figure 1) were determined based on 1D and 2D NMR, as well as the accurate molecular weight from QTOF-MS data analyses, and the sugar residues were identified by gas chromatography after hydrolysis.



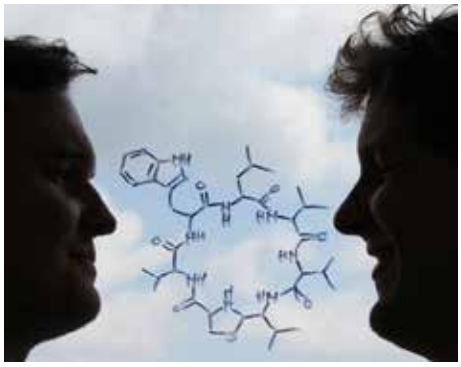
	R_1	R_2	R_3	R_4	R_5	R_6	R_7
1	S_1	CH_2OH	H	OH	H	CH_3	COOH
2	S_1	CH_2OH	H	H	OH	CH_3	COOH
3	S_2	CH_2OH	H	H	OH	CH_3	COOH
4	S_2	CH_3	H	H	OH	CH_3	COOH
5	S_1	CH_3	H	S_3	H	CH_3	CH_2OH
6	S_1	CH_3	H	S_3	H	CH_2OH	CH_3
7	S_2	CH_3	H	S_3	H	CH_3	CH_2OH
8	S_4	CH_3	H	S_3	H	CH_3	CH_2OH
9	S_4	CH_3	S_3	H	H	CH_3	CH_2OH
10	S_4	CH_3	H	S_3	H	CH_2OH	CH_3
11	S_1	CH_3	H	H	OH	CH_3	COOH



O-03

LUGDUNIN – A NEW ANTIBIOTIC FROM OUR NOSE: STRUCTURE, CHEMICAL SYNTHESIS AND BIOACTIVITY

Nadine A. Schilling[1], Martin C. Konnerth[1], Alexander Zipperer[2], Hubert Kalbacher[3], Anne Berscheid[2], Heike Brötz-Oesterhelt[2], Andreas Peschel[2], Bernhard Krismer[2], Stephanie Grond[1]
[1]Institute of Organic Chemistry, [2]Interfaculty Institute for Microbiology and Infection Medicine Tübingen (IMIT), [3]Interfaculty Institute of Biochemistry, Eberhard Karls Universität Tübingen, Germany



A *Staphylococcus lugdunensis* isolate from the human nose produces a compound with strong bactericidal activity against multi-resistant *Staphylococcus aureus*. Structure elucidation by NMR, high resolution mass spectrometry and chemical reactions revealed the hydrophobic cyclic heptapeptide, named lugdunin. Peptide synthesis was especially customized to form the thiazolidine heterocycle. The thiazolidine ring – for the first time in a cyclopeptide – and a tryptophan are crucial for full biological activity. With manifold products from our synthesis, SAR (structure activity relationship)-studies revealed nature's architectural concept of the antibacterial agent. We discuss that we have not observed resistance development yet, and present our current hypotheses of mechanisms underlying the structure-activity relationships.

O-04

DISCOVERY OF A NEW POLYKETIDE VIA CO-TREATMENT WITH AN EPIGENETIC MODIFIER AND OSMOTIC STRESS

Hope Ada Igboeli, Douglas Marchbank, Hebelin Correa, Russell Kerr. Department of Chemistry, University of Prince Edward Island

Genomic analysis of several filamentous fungi has revealed the presence of "silent" biosynthetic pathways which encode for unknown natural products. The number of these silent biosynthetic gene clusters often greatly outnumbers the number of commonly expressed natural products. This insight has fuelled the development of new strategies for natural products discovery in fungi to optimize their biosynthetic potential. Herein we de-