

Glycobiology World Congress

August 10-12, 2015 Philadelphia, USA

Structural studies of vaccine target outer membrane proteins from pathogenic bacteria

Mikio Tanabe

Martin Luther University of Halle-Wittenberg, Germany

Bacterial porins are major outer membrane proteins that function as essential solute transporters such as sugars, ions and wastes between the bacteria and the extracellular environment but also recognized as potential vaccine target. The structural features of porins are also recognized by eukaryotic cell receptors involved in innate and adaptive immunity. We have studied three major porins from pathogenic bacteria, the OmpP2 (P2) from *Haemophilus influenzae*, FomA from *Fusobacterium nucleatum* and PorB from *Neisseria meningitidis*. They have unique solute transport activity with size exclusion limit. I will also present the latest results of our studies of porins in the meeting.

mt@halomem.de

Glycotargeting: Therapeutic benefit of konjacglucomannan for wound healing

Munira Shahbuddin

International Islamic University of Malaysia, Malaysia

Carbohydrates are important in the structure-activity relationship of complex biological processes through their interactions with proteins and other biological entities. Konjacglucomannan (KGM) is a plant heteropolysaccharides of D-mannose and D-glucose have shown great potential in wound healing due to its selective stimulation and inhibition of cellular proliferation, migration and sustain cellular viability in unchanged medium for 20 days. We identified factors such as molecular weight, extraction process and Glu:Man ratio of KGM to affect cellular proliferation of human primary fibroblasts, keratinocytes and adipose stem cells which may be beneficial for smart drug delivery, cell transportation and molecular studies. The effects of KGM molecular structures and polymerization processes in the production of hydrogels were also examined on two dimensional cell culture and tissue engineered (TE) skin where its physicochemical properties stimulated the migration, proliferation and inhibition of the contraction of normal and wounded TE skin without disrupting the formation of dermal-epidermal layer. From our studies, KGM exhibited interesting therapeutic benefit for wound healing and understanding of key elements in the mechanism of actions induced by KGM is very important for scientific applications.

munirashah@iiu.edu.my