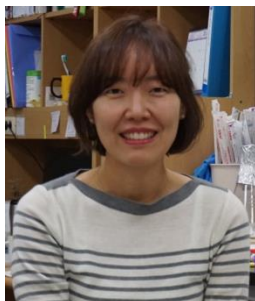




Membrane Protein Structural and Functional Research Lab



Prof. Mi Sun Jin

Education :

1998-2002 : B.S. in Chemical Engineering & Chemistry, Sogang University

2002-2004 : M.S. in Chemistry, KAIST

2004-2008 : Ph.D. in Chemistry, KAIST

Experience :

2014~present : Assistant Professor, School of Life Sciences, GIST

2013~2014 : Research Specialist I in Purdue University

2009~2013 : Postdoctoral Associate in Purdue University

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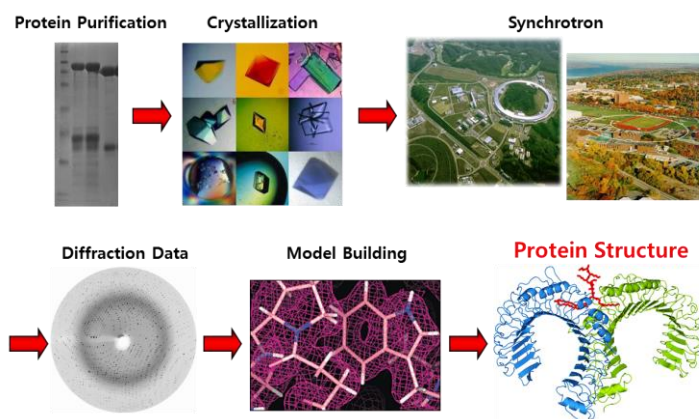
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Research Topics

Glutamate is the major excitatory neurotransmitter in the brain. In a resting neuron, glutamate is stored in the presynaptic vesicles by vesicular glutamate transporters (VGLUTs), and upon stimulation, is released at the synaptic cleft for fast excitatory neurotransmission. VGLUT is a transmembrane SLC17 anion transporter energized by a proton electrochemical gradient. The dysfunction of VGLUTs is linked to a wide variety of neurological diseases such as ADHD, schizophrenia, seizures, and Alzheimer's disease. Therefore, it is important to understand the underlying mechanism of VGLUT at a molecular level. My colleagues and I study to determine the high resolution structures of eukaryotic VGLUTs along the transport cycle, and together with mechanistic studies, establish the mechanism of vesicular transport and storage of the excitatory neurotransmitters.



<Protein Crystal Structure Determination>

■ Selected publications

- [Crystal structure of the multidrug transporter P-glycoprotein from *C. elegans*, *Nature*, 2012.](#)
- [Crystal structure of the TLR1-TLR2 heterodimer induced by binding of a triacylate d lipopeptide, *Cell*, 2007.](#)
- [Recognition of lipopeptide patterns by TLR2-TLR6 heterodimer, *Immunity*, 2009.](#)
- [Structures of the Toll-like Receptor Family and Its Ligand Complexes, *Immunity*, 2008.](#)
- [Crystal structure of mono- and bi-specific diabodies and reduction of their structural flexibility by introduction of disulfide bridges at the Fv interface, *Scientific Reports*, 2016.](#)

PUBMED AUTHOR INFORMATION

<https://www.ncbi.nlm.nih.gov/pubmed/?term=Mi+Sun+Jin>