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# The 24th iCeMS SEMINAR

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**Wed 26 Aug 2009**  
**16:00-17:30**

Lecturer: **Fuyuhiko Tamanoi, Ph.D.**

Professor, Dept. of Microbio., Immunol. & Molec. Genet.  
Research Director, California NanoSystems Institute  
Director, Signal Transduction and Therapeutics,  
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## **Use of Mesoporous Silica Nanoparticles for Controlled and Targeted Release of Anticancer Drugs**

Venue: 2nd floor Seminar Room (#A207), Main Building  
iCeMS Complex 1, Kyoto University

Mesoporous silica nanoparticles (MSNs) with a diameter of approximately 130 nm and containing more than 1400 pores have been used to develop mechanized nanoparticles suitable for targeted delivery and controlled release of anticancer drugs. These nanoparticles can be easily synthesized by the sol-gel method. Their pore interior can be modified by the addition of azobenzene conferring light sensitive property to expel stored anticancer drugs on command. Nanovalves can be attached to the pore openings to provide controlled release. MSNs with iron oxide core for MRI detection as well as PEI-modified MSNs for the delivery of siRNA have also been synthesized. Use of these novel nanomaterials in cells and in mice will be discussed.

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**Hosted by:** Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University

