

第2回 発生・再生医学セミナー

**Transfer of human artificial Chromosome vectors  
into stem cells**

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【Place】 1F Conference Room, IMEG  
(Institute of Molecular, Embryology and Genetics)

- this seminar is a part of the lecture “Tokuron II” of the course in Developmental Biology and Regenerative Medicine
- このセミナーは発生・再生医学研究者育成コース「発生・再生医学特論 II」の講義として開催されます。

担当： **Stem Cell Biology, Shoen Kume (ex 6620)**

**Abstract :**

「Human chromosome fragments and human artificial chromosomes(HAC) represent feasible gene delivery vectors via microcell-mediated chromosome transfer. The recent emergence of stem cell-based tissue engineering has opened up new avenues for gene and cell therapies. The task now is to develop safe and effective vectors that can deliver therapeutic genes into specific stem cells and maintain long-term regulated expression of these genes. Although the transfer-efficiency needs to be improved, HAC possess several characteristics that are required for gene therapy vectors, including stable episomal maintenance and the capacity for large gene insets. HAC can also carry genomic loci with regulatory elements, which allow for the expression of transgenes in a genetic environment similar to the natural chromosome. My talk summaries the lessons and prospects learned, mainly from recent studies in developing HAC and HAC-mediated gene expression in embryonic and adult stem cells, and in transgenic animals.