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Atelocollagen-mediated local delivery of siRNA *in vivo*

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The application of siRNA *in vivo* always underlies problems regarding the “delivery” methods. These problems have become severe obstacles to RNAi therapy. We have studied and developed siRNA and miRNA delivery systems *in vivo* using atelocollagen. We have already released “*AteloGene*®” which is the siRNA transfection kit based on atelocollagen technology, and has been widely used. Atelocollagen is highly purified type I collagen of bovine dermis, and obtained by protease-treatment to be low in immunogenicity because it is free from telopeptides that could become antigen. In this presentation, we would like to show the effectiveness of atelocollagen as a siRNA carrier *in vivo* by using locally-administered mice bearing luciferase-expressing tumor cells subcutaneously allografted.

First, we established cell lines of mouse melanoma (B16F10) stably-expressing dual-luciferase (Firefly and Renilla). Subcutaneously allografted mice were used as evaluation models of locally administered siRNA (against firefly luciferase). Effectively reduced protein expression of the mice administered with siRNA/atelocollagen was confirmed in a dual-luciferase assay. In addition, we detected a cleavage fragment of the target mRNA by a 5'-RACE experiment. This result provides the direct evidence that target mRNA was cut off *in vivo* in our delivery system.