

遺伝子制御学 (西村 健)

Gene Regulation (NISHIMURA Ken)



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細胞を制御するテクノロジーの開発とその基盤となる遺伝子発現制御の分子機構解析

iPS 細胞誘導や分化誘導のような細胞の運命変換には遺伝子導入技術が多く使われています。我々は、複数の遺伝子を持続発現しつつ除去可能な、独自の「SeVdp ベクター」の特性を活かし、安全で高効率な細胞運命制御技術の開発を進めています。また、細胞の運命変換は分化やがん化などの生命現象とも深く関わっています。この運命変換を本質的に理解するため、転写因子やエピジェネティクス制御因子の機能を中心に、遺伝子発現制御の分子機構解析にも挑んでいます。

Development of Cell Control Technologies and the Underlying Molecular Mechanisms of Gene Regulation

Gene delivery technology is widely used in cell fate conversion, such as iPS cell generation and cell differentiation. Leveraging the characteristics of our unique "SeVdp vector," which can sustainably express multiple genes and be subsequently removed, we are developing safe and highly efficient technologies to control cell fate. Cell fate conversion is also deeply involved in biological phenomena such as differentiation and oncogenesis. To fundamentally understand this fate conversion, we are also analyzing the molecular mechanisms of gene regulation, focusing on the functions of transcription factors and epigenetic regulators.

