

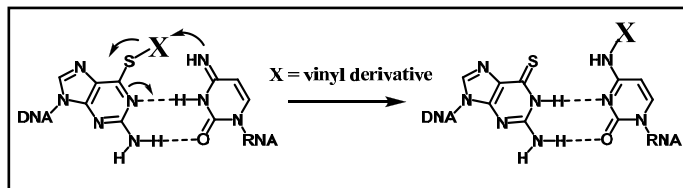
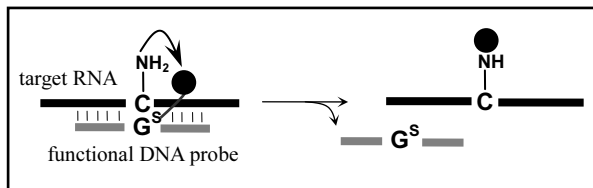
GS4-4 Functionality-transfer reaction to enable site-specific chemical modification of RNA

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Recently, as an important of the machinery of gene expression at RNA level has been widely recognized, the techniques for RNA have been actively developed. It is expected that site-specific modification of RNA would be applied to biological techniques, genetic diagnosis and drugs for genetic disease.

In this study, we have investigated functional DNA probes that transfer a functional group to the amino group of cytosine at a specific site. A new functionality-transfer reaction from a 6-thioguanine vinyl derivative to the amino group of cytosine was designed by MO calculations, and investigated with various derivatives. The transfer reaction proceeded toward cytosine in RNA with base and site specificity^{1),2)}. As an application of this strategy, it was shown that reverse transcription was terminated efficiently and RNA substrates were labeled smoothly.



1) Onizuka, K., Taniguchi, Y., Sasaki, S., *Nucleic Acids Symposium Series*, **2007**, 51, 5-6.

2) Onizuka, K., Taniguchi, Y., Nishioka, T., Sasaki, S., *Nucleic Acids Symposium Series*, **2008**, 52, 367-368.