
Paper ID: 1570943428

Paper Title: A Research on DNA Nanotube Controlled to Open and Close by Ultrasound

Authors: Yukine Tagai, Shoichiro Kanno and Zugui Peng (Tokyo Institute of Technology, Japan); Kenta Shimba (The University of Tokyo, Japan); Yoshitaka Miyamoto (National Center for Child Health and Development, Japan); Tohru Yagi (Tokyo Institute of Technology, Japan)

Email: tagai.y.aa@m.titech.ac.jp

Abstract

Nanotubes are nanostructures that can control the transport of substances through membranes. DNA nanotubes, which are nanotubes composed of DNA, can be designed with predicted structures based on the specificity of the DNA base pairs, allowing the creation of various types of nanotubes. Methods already developed to control the opening and closing of the DNA nanotube lid include DNA strand, heat, and light. We propose ultrasound (US) as a new method of opening and closing control and aim to develop DNA nanotubes controlled by ultrasound (US-DNA nanotubes). In this research, we prepared the main body of US-DNA nanotubes and evaluated the preparation results by electrophoresis and proton transport assay.
