Title: Studies and application of Nanomotor for Single Pore Sensing, Single Fluorescence Imaging, and RNA Nanotechnology

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DsDNA translocation motors are essential for DNA replication, repair, homologous recombination, chromosome segregation, bacterial division, viral DNA packaging, and DNA/RNA transport within cells.

Guo P. et al. PNAS, 1986
Our recent discoveries on the studies of Phi29 DNA Packaging Motor

1. Mechanism of motor action: Revolution without rotation

2. Insertion of the motor channel into membrane for personal medicine and high-throughput dsDNA sequencing.

3. Lead to the emergence of a new field in RNA nanotechnology
Phi29 bacteriophage dsDNA packaging motor

The left-handed channel and the right-handed DNA with anti-parallel conformation supports the revolution, but not the rotation mechanism.

UK's Guo Discovers New Class of Revolving Biomotor
Previously, two types of biomotors had been discovered:

a. Linear Motor  
b. Rotation Motor

Recently, we discovered a third type --- revolution motor: