

Supporting Information

Table S1. The list of oligonucleotide sequences used in the 6-helix tile-tube assembly.

(A) Oligonucleotides for folate conjugation. X: C8-Alkyne-dU.

ODN-1	XAAAACGCTAACGCCACCTTAGATCCAAA
ODN-2	XGGATCTAAAGGACTTCTATCAAAGACGGGACGACTCCGGGAG
ODN-3	XAAACTCCCGGAGTCCGCTGCTGATCAAA
ODN-4	XGATCAGCAGCGCCGTCTGACTGCAGAAATAGGACCCCCAG
ODN-5	XAAACTGGGGGTCTCGAGGGCGAAACAAA
ODN-6	XGTTTCGCCTCGTAGCCTCGCCGCACGACCTGGCTAGCGT

(B) Oligonucleotides for fluorescent dye labeling. Z: Atto488-dUTP or overhang sequence for Atto647 modified oligonucleotide (GGTAGTAATAGGAGAATG).

GGTCGTGCGGACTGTCGAACACCAACGATGCCTGATAGAAGTZ
GCGTGGCAATTGCCATAAATTACATAACGGGCCAGACGZ
TTTCAAGACCAGGCACTTGTATGGCGTAGGGCGGGTTAGCGGZ
CGTTATGTATGCCGCTAACACCTTGCATGACTGAACCTGAACZ
GTCCCGTCTTGGATCCGAAAGCCATAATATATCGAGACGGGZ
TCGAAGTCGTGTTCGAGTTCAAATGTCTATGCGATGCAGCAGZ
GTCATTGCAATAGCTCCCATCATTAAATGTCGTTACAGTAAZ
GCATAGACATTTACTGTAAAACCTTACGTAACCTACAGCCAZ
ATTTCAGGAAATTCAAGCCTATTCACATAGGCGAAGGCTAZ
ATGCCAGGAATGGCTGTAAGTTGCATCATGGGGTCCTCAATZ
TACGTAAGGTCAAACTCATCCCTGAGTGATCCATGACCCTZ
CCCATGATGCAAAGGGCATGGCTTGAAAAATTATGGCAZ

(C) Oligonucleotides for siRNA labeling.

GGCATCGTTGGCGTCTGGCGCACGACTTCGATTCGGATCCA	AGGATGTAGGTGGTAGAG
CGCCCTACGCCAAAAAGATGGGAGCTA	AGGATGTAGGTGGTAGAG
TATATTATGGCCTGCTGCATCTCCTGGCATGGCTGAATTCC	AGGATGTAGGTGGTAGAG
CGACATTAATAAAAAGATGAGTATTG	AGGATGTAGGTGGTAGAG
CTATGTGAATAATTGAGGACCATTGCCACGCTGTCGACAGT	AGGATGTAGGTGGTAGAG
GATCACTCAGGAAAAAAACAAGTGCCAGGATGTAGGTGGTAGAG	

Table S2. Molecular weights of 6 oligonucleotides before and after folate conjugation.

Samples	MW (g/mol)		MW (g/mol) after reaction	
	expected	experimental	expected	experimental
ODN-1	8913	8920,382	9554,64	9547,765
ODN-2	14355	14602,380	14996,64	14992,571
ODN-3	8937	8931,952	9578,64	9574,670
ODN-4	14197	14195,535	14838,64	14842,370
ODN-5	9075	9071,732	9716,64	9710,265
ODN-6	14119	14142,973	14760,64	14759,459
Folate-PEG3-Azide	641,64			

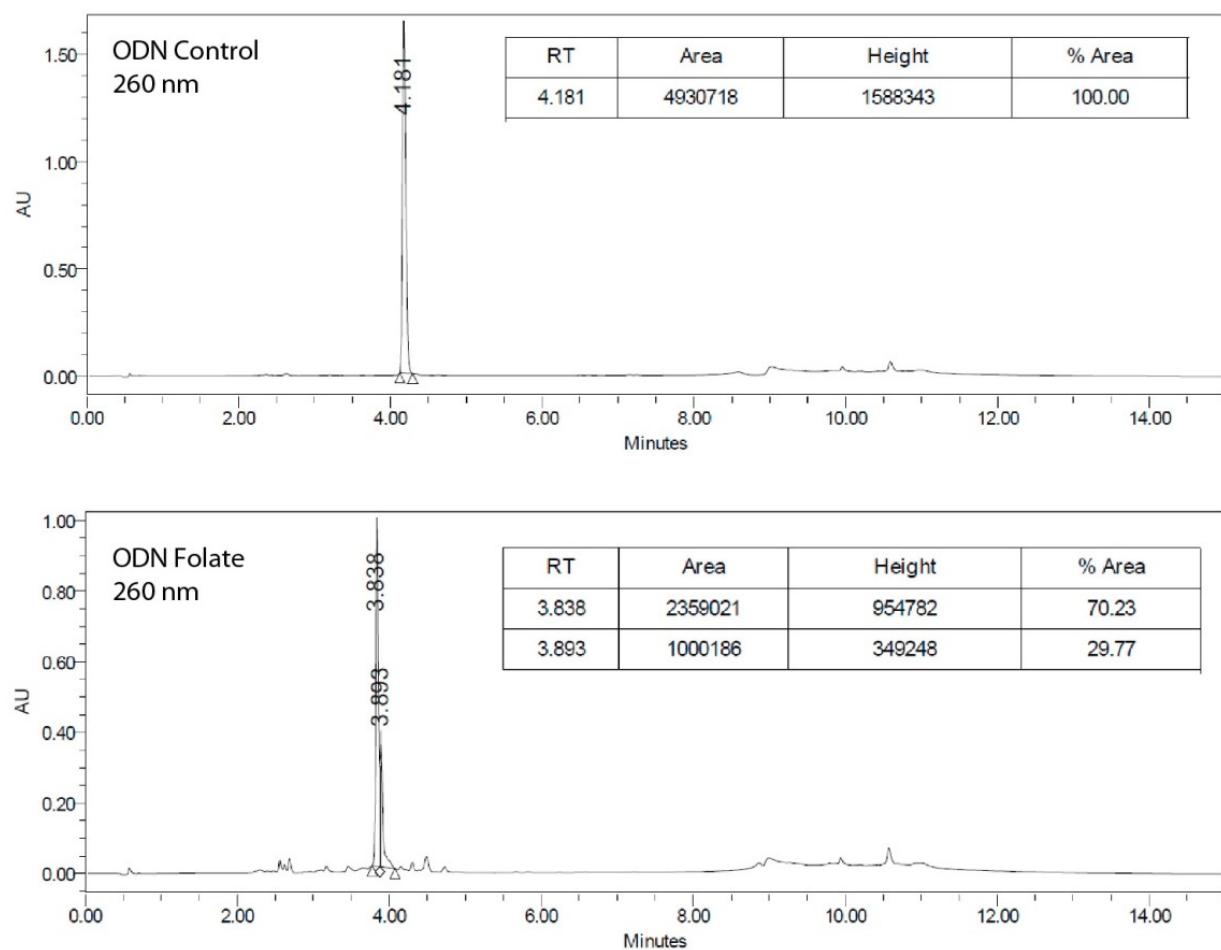


Figure S1. RP-HPLC chromatogram of a single DNA oligonucleotide before (upper chromatogram) and after (bottom chromatogram) folate conjugation.

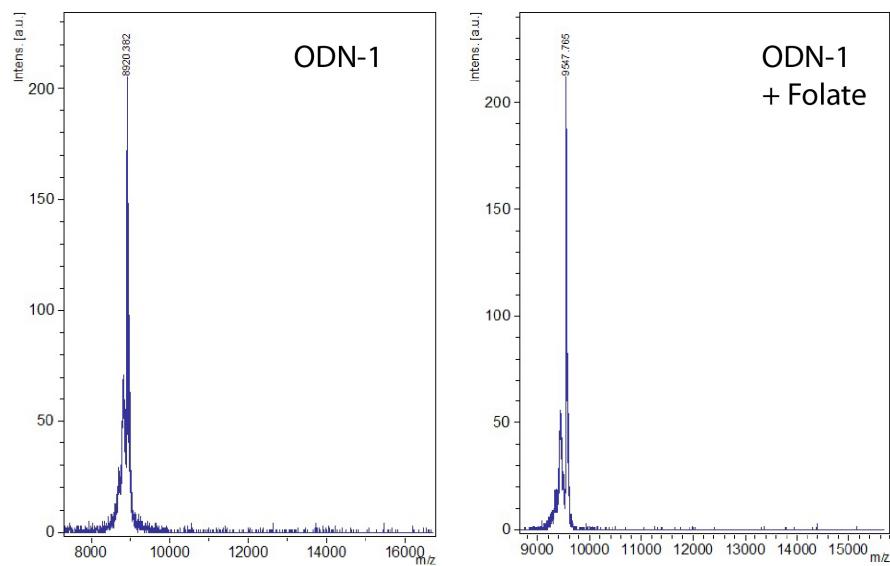


Figure S2. Cont.

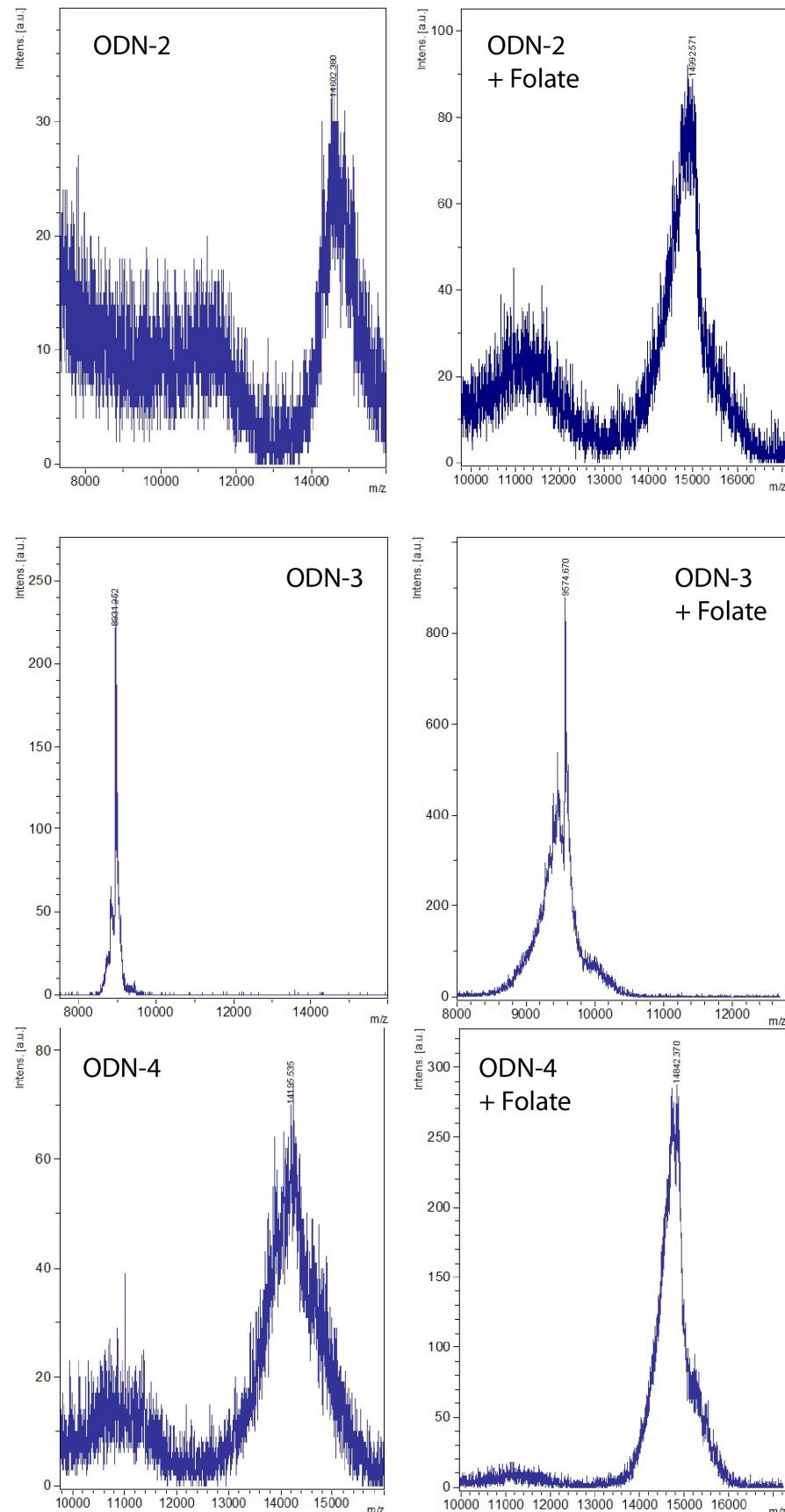


Figure S2. Cont.

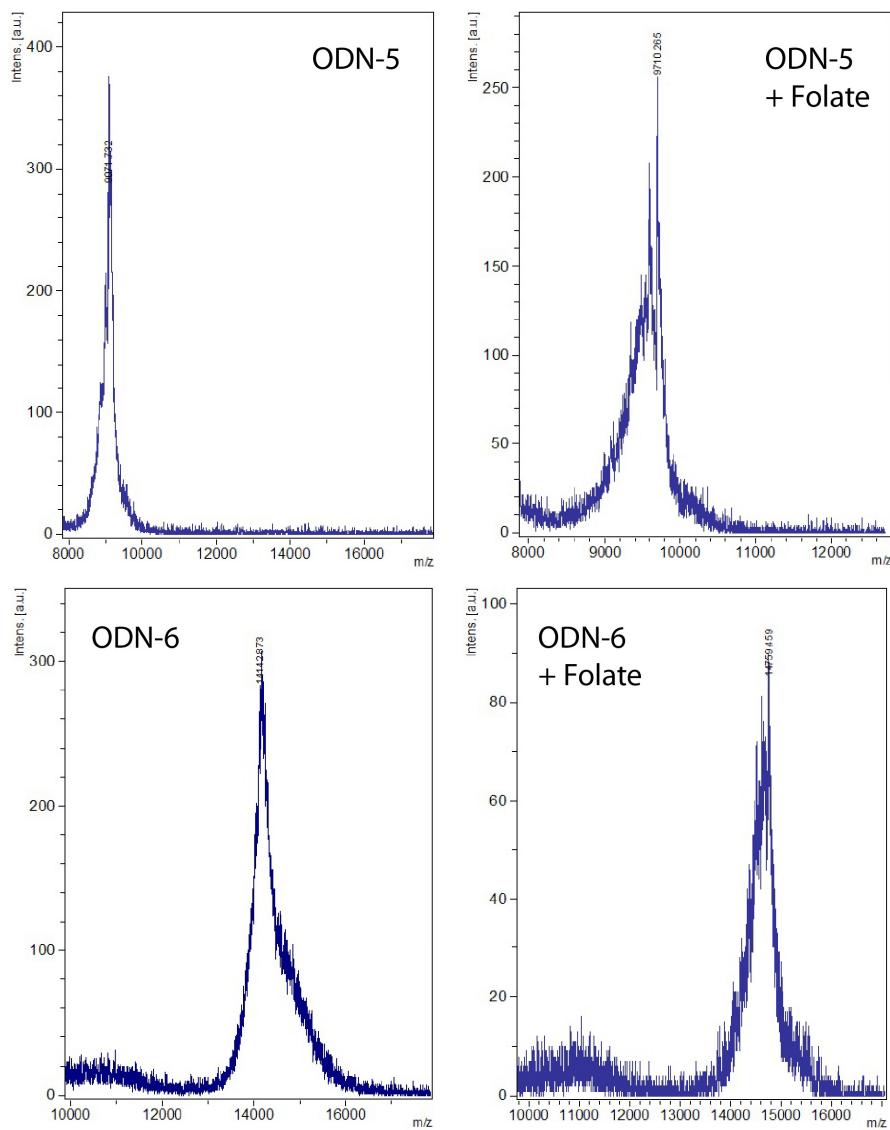


Figure S2. Mass spectrometry analysis of 6 oligonucleotides before and after folate conjugation.

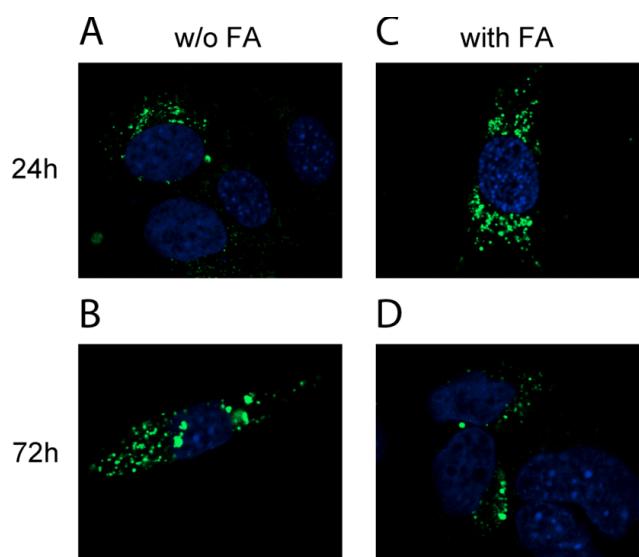


Figure S3. Endosomal uptake of unmodified (**a,b**) and folate-modified (**c,d**) DNA nanotubes after 24 h and 72 h of incubation.

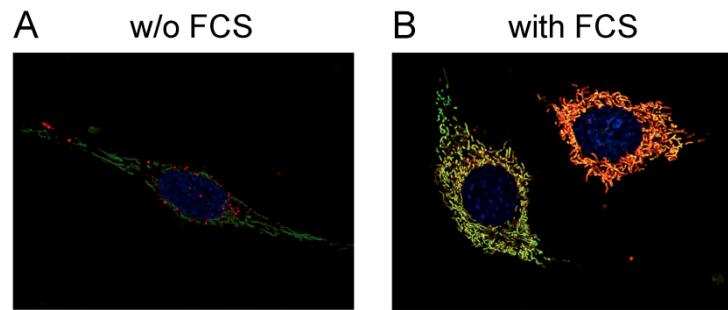


Figure S4. Mitochondrial colocalization of the mitochondrial dye Mito-tracker green (shown in green) and DNA nanotubes coupled to Atto 647 (shown in Red) after culture medium **(a)** without FCS and **(b)** with FCS.

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