Supplementary Table 1: Sequences of Y-shaped DNA nanostructures. Bold font represents the sticky end sequence. Complementary stem sequences are represented in the same color.

Name	Sequence (5'→3')
Y_{A1}	**GCTCGAGC**CAGTGAGGACGGAAGTTTGTCGTAGCATCGCACC
Y_{A2}	**GCTCGAGC**CAACCACGCCTGTCCATTACTTCCGTCCTCACTG
Y_{A3}	**GCTCGAGC**GGTGCGATGCTACGACTTTGGACAGGCGTGGTTG
Y_{A2}_0_FAM	**[FAM]-**CAACCACGCCTGTCCATTACTTCCGTCCTCACTG
Y_{B1}	**CTCGCGAG**AAAGGAACTCTCCGCGTTGACAAAGCCGACACGT
Y_{B2}	**CTCGCGAG**GCCTCTGTGTCGCATCTTCGCGGAGAGTTCCTTT
Y_{B3}	**CTCGCGAG**ACGTGTCGGCTTTGTCTTGATGCGACACAGAGGC
Y_{B2}_0_Alexa405	**[Alexa405]-**GCCTCTGTGTCGCATCTTCGCGGAGAGTTCCTTT
Y_{C1}	**CAGCGCTG**CTGGTTACACTGAGCTTTATGAACCTAGTGTGGC
Y_{C2}	**CAGCGCTG**GCCACACTAGGTTCATTTCGCTTGATACGATGTC
Y_{C3}	**CAGCGCTG**GACATCGTATCAAGCGTTAGCTCAGTGTAACCAG
Y_{C2}_0_Cy3	**[Cy3]-**GCCACACTAGGTTCATTTCGCTTGATACGATGTC

Supplementary Table 2: Sequences of 6-branched DNA linkers. Bold font represents the sticky end sequence. The underlined sequence represents the Toehold sequences. Complementary stem sequences are represented in the same color.

Name	Sequence (5'→3')
L_{AB1}	**GCTCGAGC**CACGACCGACGCCACGCCGAGTTTGGTGGCTTATACAGACGT
L_{AB2}	**GCTCGAGC**ACGTCTGTATAAGCCACCTTTCGGTTCTCTCCAAAGCA
L_{AB3}	**GCTCGAGC**TGCTTTGGAGAGAACCGATTAATGGATTTTTGGA
L_{AB4}	**CTCGCGAG**CCTGCTCCAAAAATCCATTTTTGCGAAATTGATGGCTGC
L_{AB5}	**CTCGCGAG**GCAGCCATCAATTTCGCATTCGGTCACATAACTGGAGA
L_{AB6}	**CTCGCGAG**TCTCCAGTTATGTGACCGTTACTCGGCGTGG
$L^{\dagger}_{AB1}$	**GCTCGAGC**CGGCGCTGTAAATTTGCGTTCCCCGGGCCGGT
$L^{\dagger}_{AB2}$	**GCTCGAGC**CAGACGTCACTCTCCAACTTCGCAAATTTACAGCGCCG
$L^{\dagger}_{AB3}$	**GCTCGAGC**TGAGGGACCCAGGACAGGAGATTGTTGGAGAGTGACGTCTG
$L^{\dagger}_{AB4}$	**CTCGCGAG**GCTGGACTAACGGAACGGTTTCTCCTGTCCTGG
$L^{\dagger}_{AB5}$	**CTCGCGAG**CTCAGAGAGGTGACAGCATTCCGTTCCGTTAGTCCAGC
$L^{\dagger}_{AB6}$	**CTCGCGAG**CGGCGCGACCGGCCCGGGGTTTGCTGTCACCTCTCTGAG
$L^{\dagger}_{AC1}$	**GCTCGAGC**AATGGATTTTTGGAGCAGGTTGGTGGCTTATACAGACGT
$L^{\dagger}_{AC2}$	**GCTCGAGC**ACGTCTGTATAAGCCACCTTTCGGTTCTCTCCAAAGCA
$L^{\dagger}_{AC3}$	**GCTCGAGC**TGCTTTGGAGAGAACCGATTCACGACCGACG
$L^{\dagger}_{AC4}$	**CAGCGCTG**ACTCGGCGTGGCGTCGGTCGTGTTTGCGAAATTGATGGCTGC
$L^{\dagger}_{AC5}$	**CAGCGCTG**GCAGCCATCAATTTCGCATTCGGTCACATAACTGGAGA
$L^{\dagger}_{AC6}$	**CAGCGCTG**TCTCCAGTTATGTGACCGTTCCTGCTCCAAAAA

Supplementary Table 3: Sequences of division triggers and Inhibitor RNAs. T_{AB1}, T_{AB2}, $T^{\dagger}_{AB1}$, $T^{\dagger}_{AB2}$, $T^{\dagger}_{AC1}$, and $T^{\dagger}_{AC2}$ are DNA sequences. $R^{\dagger}_{AB1}$, $R^{\dagger}_{AB2}$, $R^{\dagger}_{AC1}$, and $R^{\dagger}_{AC2}$ are RNA sequences. The underlined sequence represents the Toehold sequences. Here, the sequences of $R^{\dagger}_{AB1}$, $R^{\dagger}_{AB2}$, $R^{\dagger}_{AC1}$, and $R^{\dagger}_{AC2}$ are the same as miR-6875-5p, miR-4634, miR-1246, and miR-1307-3p, respectively.

Name	Sequence (5'→3')
T_{AB1}	AATGGATTTTTGGAGCAGG
T_{AB2}	ACTCGGCGTGGCGTCGGTCGTG
$T^{\dagger}_{AB1}$	TCTCCTGTCCTGGGTCCCTCA
$T^{\dagger}_{AB2}$	CCCCGGGCCGGTCGCGCCG
$R^{\dagger}_{AB1}$	UGAGGGACCCAGGACAGGAGA
$R^{\dagger}_{AB2}$	CGGCGCGACCGGCCCGGGG
$T^{\dagger}_{AC1}$	CCTGCTCCAAAAATCCATT
$T^{\dagger}_{AC2}$	CACGACCGACGCCACGCCGAGT
$R^{\dagger}_{AC1}$	AAUGGAUUUUUGGAGCAGG
$R^{\dagger}_{AC2}$	ACUCGGCGUGGCGUCGGUCGUG