

Supplementary Information

Bio-SCAN V2: A CRISPR/dCas9-Based Lateral Flow Assay for Rapid Detection of Theophylline

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Supplementary Tables

Supplementary Table 1. Oligonucleotide sequences for ligRNA template production.

Group	Sequence (5'–3')
T7-F	TTCTAATACGACTCACTATAGG
ligRNA1-1	TTCTAATACGACTCACTATAGGGTACGCAGAAGGGAGCAGAGGGTTTCAGAGCTATGCTGGAAACAGCATAGCAAGTTGAAATAAGGGTG
ligRNA1-2	AAAAAAGCACCGACTCGGTGCCGTCGCTGCCAAGGGCCTTTCGGCTGGTATCGCGTATACGGGACACCTTATTTCAACTTGC
ligRNA1-R	AAAAAAGCACCGACTCGGT
ligRNA2-1	TTCTAATACGACTCACTATAGGGTACGCAGAAGGGAGCAGAGGGTTTTAGAGCTAGAAATAGCAAGTTAAAATAAGGCTAGTCCGTTATCAACTTGAA
ligRNA2-2	CTAAAACCTGCCAAGGGCATCAAGACGATGCTGGTATGTTTTAGAGCTAGAAATAAAAAGCACCGACTCGGTGCCACTTTTTCAAGTTGATAACGGACTAGC
ligRNA2-R	CTAAAACCTGCCAAGGGCATC
ligRNA3-1	TTCTAATACGACTCACTATAGGGTACGCAGAAGGGAGCAGAGGGTTTCAGAGCTATGCTGGAAACAGCATAGCAAGTTGAAATAAGGCTAGTCCGTTATCAACTTGAAAAAGTGGCACCGAGTCGGTGCTTTTTCCTC
ligRNA3-2	CACCGACTCCTGCCAAGGGCATCAAGACGATGCTGGTATCGAGTCGGTGCTTTTGAGGAAAAAGCACCGACTCGG
ligRNA3-R	CACCGACTCCTGCCAAGGG
ligRNA4-1	TTCTAATACGACTCACTATAGGGTACGCAGAAGGGAGCAGAGGGTTTCAGAGCTATGCTGGAAACAGCATAGCAAGTTGAAATAAGGCTAGTCCGTTATCAACTTGAAAAAGTGGCACCGAGTCGGTGCTTTTTCCTC
ligRNA4-2	CACCGACTCGCTGCCAAGGGCATCAAGACGATGCTGGTATCCGAGTCGGTGCTTTTGTAGGAAAAAGCACCGACTCGGTGCCAC
ligRNA4-R	CACCGACTCGCTGCCAAGGG

Supplementary Table 2. Oligonucleotide sequences for FAM-labeled amplicon production and *in vitro* Cas9 target cleavage.

Group	Sequence (5'–3')
Target-F-FAM	/56FAM/CAACTTCCTCAAGGAACAACATTGCCAAAA
Target-F-2	ACCGAAGAGCTACCAGACG
Target-R	ATTCTAGCAGGAGAAGTTCCCCTACT
TheoPCR-template	ATTGGCACCCGCAATCCTGCTAACAATGCTGCAATCGTGCTACAACTTCCTCA AGGAACAACATTGCCAAAAGGCTTCTACGCAGAAGGGAGCAGAGGCGGCAG TCAAGCCTCTTCTCGTTCCTCATCACGTAGTCGCAACAGTTCAAGAAATTCAA CTCCAGGCAGCAGTAGGGGAACTTCTCCTGCTAGAATGGCTGGCAATGGCGG TGATGCTGCTCTTGCTTTGCTGCTGCTTGACAGATTGAACCAGCTTGAGAGCA AAATGTCTGGTAAAGGCCAACAACAAGGCCAACTGTCACTAAGAAAT CTGCTGCTGAGGCTTCTAAGAAGCCTCGGCAAAAACGTAAGTCCACTAAAGC ATACAATGTAACACAAGCTTTCGGCAGACGTGGTCCAGAACAACCCAAGGA AATTTGGGGACCAGGAATAATCAGACAAGGAAGTATTACAAACATTGGC CGCAAATTGCACAATTTGCCCCCAGCGCTTCAGCGTTCTTCGGAATGTCGCGC ATTGGCATGGAAGTCACACCTTCGGGAACGTGGTTGACCTACACAGGTGCCA TCAAATTGGATGACAAAGATCCAAATTTCAAAGATCAAGTCATTTTGCTGAA TAAGCATATTGACGCATACAAAACATTCCCACCAACAGAGCC

Supplementary Table 3. Sequences of ligRNAs used in this study.

Group	Sequence (5'–3')
ligRNA1	UACGCAGAAGGGAGCAGAGGGUUUCAGAGCUAUGCUGGAAACAGCAUAGC AAGUUGAAAUAAGGGUGUCCCGUAUACGCCGAUACCAGCCGAAAGGCCCU UGGCAGCGACGGCACCGAGUCGGUGCUUUUUU
ligRNA2	UACGCAGAAGGGAGCAGAGGGUUUAGAGCUAGAAAUAGCAAGUUAAAAU AAGGCUAGUCCGUUAUCAACUUGAAAAAGUGGCACCGAGUCGGUGCUUUU UAUUUCUAGCUCUAAAACAUACCAGCAUCGUCUUGAUGCCCUUGGCAGGU UUUAG
ligRNA3	UACGCAGAAGGGAGCAGAGGGUUUCAGAGCUAUGCUGGAAACAGCAUAGC AAGUUGAAAUAAGGCUAGUCCGUUAUCAACUUGAAAAAGUGGCACCGAGU CGGUGCUUUUCCUCUAAAAGCACCGACUCGAUACCAGCAUCGUCUUGAU GCCCUUGGCAGGAGUCGGUG
ligRNA4	UACGCAGAAGGGAGCAGAGGGUUUCAGAGCUAUGCUGGAAACAGCAUAGC AAGUUGAAAUAAGGCUAGUCCGUUAUCAACUUGAAAAAGUGGCACCGAGU CGGUGCUUUUCCUCUAAAAGCACCGACUCGGAUACCAGCAUCGUCUUGA UGCCCUUGGCAGCGAGUCGGUG