

Electronic Supplementary Material

A DNA Aptamer Based Method for Detection of SARS-CoV-2 Nucleocapsid Protein

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Supporting information to DOI: 10.1007/s12250-020-00236-z

CLUSTAL 2.1 multiple sequence alignment

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Sars-N      MSDNGPQSNQRSAPRITFGGPTDSTDNNQNGGRNGARPKQRRPQGLPNNTASWFTALTQH
Sars2-N     MSDNGPQ-NQRNAPRITFGGPDSTGSGNQNGERSGARSKQRRPQGLPNNTASWFTALTQH
***** ***,*****:***,*** * ,***,*****

Sars-N      GKEELRFPRGQVPIINTNSGDDQIGYYRRATRRVRRGGDKMKELSPRWYFYLLGTGPEA
Sars2-N     GKEDLKFPRGQVPIINTNSSPDDQIGYYRRATRRIRGGDKMKDLSRWYFYLLGTGPEA
***:*;***** ,*****:*****:*****:*****

Sars-N      SLPYGANKEGIVVATEGALNTPKDHIGTRPNNAATVLQLPQGTTLPGFYAEGSRGG
Sars2-N     GLPYGANKDGI IIVATEGALNTPKDHIGTRPANNAIIVLQLPQGTTLPGFYAEGSRGG
.*****:**;***** ***** *****

Sars-N      SQASSRSSSRGNSRSTPGSSRGNSPARMASGGETALALLLLDRLNQLESKVSQKGGQ
Sars2-N     SQASSRSSSRNRSSRSTPGSSRGTSARMAGNGGDAALALLLLDRLNQLESKMSQKGGQ
***** , ***** , ***** . ** : *****

Sars-N      QQQQQTVTKKSAEASKKPRKRTATKQYNVTQAFGRRGPEQTQGNFGDQLIRQGTQDYK
Sars2-N     QQQQQTVTKKSAEASKKPRKRTATKAYNVTQAFGRRGPEQTQGNFGDQELIRQGTQDYK
***** *****

Sars-N      HWPQIAQFAPSASAFFGMSRIGMEVTPSGTWLTYHGAIKLDDKDPQFKDNVILLNKHIDA
Sars2-N     HWPQIAQFAPSASAFFGMSRIGMEVTPSGTWLTYTGAIKLDDKDPNFKDQVILLNKHIDA
***** *****:***:*****

Sars-N      YKTFPPTPKKDKKKKDEAQLPQRQKKQPTVLLPAADMDDFSRQLQNSMSGASADST
Sars2-N     YKTFPPTPKKDKKKKADETQALPQRQKKQPTVLLPAADLDDFSKQLQQSMS--SADST
*****:***,* ***** *****:***:***:*** *****

Sars-N      QA
Sars2-N     QA
**

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Fig. S1: The amino acid sequence alignment of N proteins of SARS-CoV and SARS-CoV-2. The GeneBank accession numbers for N protein of SARS-CoV and SARS-CoV-2 are NP_828858.1 and YP_009724397.2, respectively. The alignment was performed by ClustalW software at <https://www.genome.jp/tools-bin/clustalw>.

Table S1. Sequences of DNA aptamers used in this study.

Aptamers	Sequences (5'-3')
N Aptamer 1 (88 nt)	bio-GCAATGGTACGGTACTTCCGGATGCGGAAACTGGCTAATTGGT GAGGCTGGGGCGGTCGTGCAGCAAAAGTGCACGCTACTTTGCTAA
N Aptamer 2 (78 nt)	bio-GCAATGGTACGGTACTTCCGGATGCGGAAACTGGCTAATTGGT GAGGCTGGGGCGGTCGTGCAGCAAAAGTGCACGCT
N Aptamer 3 (57 nt)	bio-GCAATGGTACGGTACTTCCGGATGCGGAAACTGGCTAATTGGT GAGGCTGGGGCGGT
Aptamer n.c. (33 nt)	bio- GCAATGGTACGGTACTTCCGGATGCGGAAACTG