Electronic Supplementary Material (ESI) for Analyst.

Fluorescent and electrochemical detection of nuclease activity associated with *Streptococcus pneumoniae* using specific oligonucleotide probes

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Supplementary Information

Table S1. Oligonucleotide sequences used in this study.

Oligo	Name	Sequence (5' to 3')
1	DNA	5'-FAM-TCT-CGT-ACG-TTC-TQ2-3'
2	DNA-Poly A	5'-FAM-AAA-AAA-AAA-AAA-TQ2-3'
3	DNA-Poly T	5'-FAM-TTT-TTT-TTT-TTT-TQ2-3'
4	DNA-Poly C	5'-FAM-CCC-CCC-CCC-CCC-TQ2-3'
5	DNA-Poly G	5'-FAM-mUmUmU-GGG GGG GGG-TQ2-3'
6	RNA	5'-FAM-ucu-cgu-acg-uuc-TQ2-3'
7	RNA-Poly A	5'-FAM-aaa-aaa-aaa-aaa-TQ2-3'
8	RNA-Poly U	5'-FAM-uuu-uuu-uuu-uuu-TQ2-3'
9	RNA-Poly C	5'-FAM-ccc-ccc-ccc-ccc-TQ2-3'
10	RNA-Poly G	5'-FAM-mumumu-ggg-ggg-ggg-TQ2-3'
11	All 2'O-Methyl	5'-FAM-mUmCmU-mCmGmU-mAmCmG-mUmUmC-TQ2-3'
12	RNA-Pyr-2'O-Methyl	5'-FAM-mumcmu-mcgmu-amcg-mumumc-TQ2-3'
13	RNA-Pur-2'O-Methyl	5'-FAM-macu-mgmgu-macmg-mguc-TQ2-3'
14	All 2'Fluoro	5'-FAM-fUfCfU-fCfGfU-fAfCfG-fUfUfC-TQ2-3'
15	RNA-Pyr-2'Fluoro	5'-FAM-fUfCfU-fCgfU-afCg-fUfUfC-TQ2-3'
16	RNA-Pur-2'Fluoro	5'FAM-ucu cfGu fAcfG uuc-TQ2-3'
17	P1 probe	5'-FAM- mUmUmUmU-fUfA-mUmUmUmU- BMN-Q1 -3'
18	P2 probe	5'-FAM- mUmUmUmU-fUfAfU-mUmUmUmU- BMN-Q1 -3'
19	P3 probe	5'-FAM- mUmUmUmU-fUfAfAfU-mUmUmUmU BMN-Q1 -3'
20	Fc-P3 probe	5'-Ferrocen- mUmUmUmU-fUfAfAfU-mUmUmUmU - Thiol -3

Key:
A, C, T, G = DNA
A, c, u, g = RNA
mA, mC, mU, mG = 2'O-Methyl modification
fA, fC, fU, fG = 2'Fluoro modification

Table S2. Verification of clinical samples

Isolate	Sample origin	Verification method
S. pneumoniae CS1	Sputum	VITEK 2
S. pneumoniae CS2	Endotracheal aspirate	VITEK 2
S. pyogenes CS1	Throat	VITEK 2
S. pyogenes CS2	Wound	VITEK 2
S. agalactiae CS1	Blood	VITEK 2
S. agalactiae CS2	Urine	VITEK 2

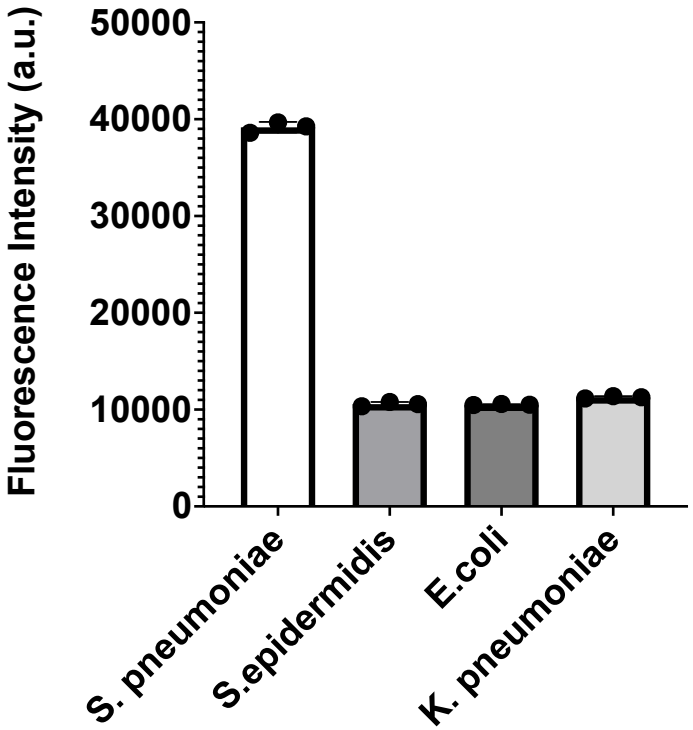

Figure S1. Specificity studies involving other human pathogens. The specific detection of *S. pneumoniae* was assessed using three relevant bacterial controls. All experiments were conducted in triplicate (indicated by dots), and the standard deviation was represented as the error.