List of abbreviations

|  |  |
| --- | --- |
| AIOD-CRISPR | all-in-one double CRISPR/Cas12a |
| ASFV | African swine fever virus |
| CARMEN | combinatorial arrayed reactions for multiplexed evaluation of nucleic acids |
| Cas-DSM | CRISPR/Cas-driven single micromotor |
| CHDC | catalytic hairpin DNA circuits |
| COMET | Cas-CHDC-powered electrochemical RNA-sensing technology |
| CONAN | CRISPR/Cas-only amplification network |
| CRA-LFB | CRISPR/Cas-recombinase-assisted amplification-based LFB |
| CRISPR | clustered regularly interspaced short palindromic repeats |
| CRISPR-MCR | CRISPR-mediated cascade reaction biosensor |
| CRISPR-SPADE | The CRISPR single-pot assay for detecting emerging VOCs |
| crRNA | CRISPR RNA |
| ddPCR | digital droplet PCR |
| DENV | dengue virus |
| DETECTR | DNA endonuclease-targeted CRISPR transporter |
| dsDNA | double-stranded DNA |
| FDA | Food and Drug Administration |
| gFET | graphene field-effect transistor |
| gRNA | guide RNA |
| HBV | hepatitis B virus |
| HDR | Homology Directed Repair |
| HOLMES | one-hour low-cost multipurpose high effective system |
| HPV | Human Papillomavirus |
| HUDSON | heating unextracted samples to eliminate nucleases |
| LAMP | loop-mediated isothermal amplification |
| LFA | lateral ﬂow assay |
| LOD | limit of detection |
| miSHERLOCK | minimum instrument SHERLOCK |
| NASBA | Nucleic Acid Sequence-based Amplification |
| NHEJ | Nonhomologous end joining |
| PAM | Protospacer Adjacent Motif |
| PFS | protospacer flanking sequence |
| POC | Point-of-Care |
| POCT | Point-of-Care Testing |
| qPCR | quantitative PCR |
| RAA | recombinant enzyme-assisted amplification |
| RSV | respiratory syncytial virus |
| ssDNA | single-stranded DNA |
| SERS | Surface-enhanced Raman scattering |
| SHERLOCK | specific high-sensitivity enzymatic reporter unlocking |
| SHINE | Streamline Highlights of Infections to Navigate Epidemics |
| SPEEDi-CRISPR | the solid-phase extraction and enhanced detection assay integrated by CRISPR-Cas12a |
| S-PREP | SHERLOCK Rapid Parasite Extraction Protocol |
| STOP | SHERLOCK One-Pot testing |
| tracrRNA | transactivating CRISPR RNA |
| ZIKV | Zika virus |