



# QUANTITATIVE NUCLEIC ACIDS



ATCC®

Credible leads to Incredible™

# Skip *in vitro* with ATCC® Genuine Nucleics

The extraction, preparation, and verification of nucleic acids can often require extensive amounts of time, labor, and expense. To save you time and money, ATCC has developed stabilized, quantitative nucleic acids for use in inclusivity/exclusivity testing, establishing limits of detection, and validating or comparing test methods. Our portfolio of quantitative products includes:

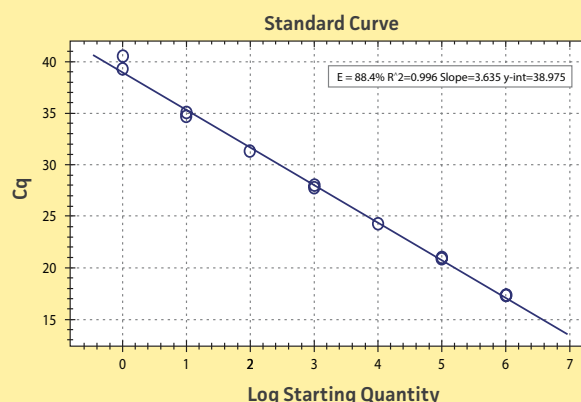
- **Synthetic nucleic acids** – DNA and RNA synthetically manufactured under an ISO 13485 certified process to include key target regions from select bacterial and viral strains
- **Genomic nucleic acids** – Whole genome preparations aseptically prepared from minimally passaged ATCC® Genuine Cultures
- **Certified reference materials** – Genomic DNA produced under an ISO 17034 accredited process to confirm identity, well-defined characteristics, and an established chain of custody

So, skip *in vitro* and let ATCC do the work for you! Trust ATCC Genuine Nucleics for your laboratory's molecular needs, and get your research started today.

## Put ATCC genuine nucleics to work for you

ATCC nucleic acids can be used for assay development, verification, validation, monitoring of day-to-day test variation, and lot-to-lot performance of molecular-based assays. Quantitative formats also allow for the generation of a standard curve to determine microbial load.

To learn more about ATCC nucleic acid research, visit us online at [www.atcc.org/GenuineNucleics](http://www.atcc.org/GenuineNucleics).



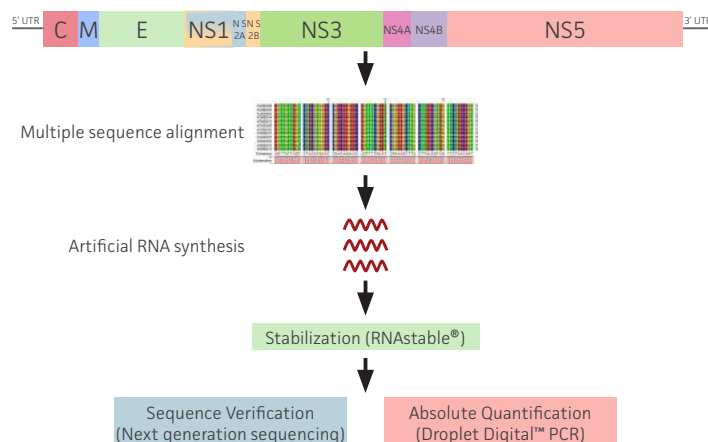
Standard curve generated using the Synthetic Dengue virus (DENV) type 4 molecular standard.

## Synthetic nucleic acids

ATCC performs extensive research on select organisms, and works with collaborators to identify key target regions within the genome that are compatible with primers used in molecular assays. Multiple sequence alignment allows for the development of a consensus sequence that is used to synthetically build the finished product.

- Eliminate the need to culture microorganisms
- Use in a BSL-1 facility
- No shipping restrictions
- Manufactured under ISO 13485
- Quantified using Droplet Digital™ PCR (ddPCR™)

Each preparation is extensively tested to ensure product identity, stability, quantity, and functionality with molecular applications. What's more, each DNA or RNA preparation is stabilized using a DNA- or RNA-based BioMātrica® stabilization matrix (DNAstable®, RNAstable®) to ensure consistent results, run after run.



**TABLE 1.** Quantitative Synthetic Nucleic Acids

ATCC® No.	Organism	Source Information	Research Applications
VR-3249SD™	BK virus	Full length genome of BK virus derived from a plasmid clone	Blood-borne Disease Research
VR-3233SD™	Hepatitis C virus	Fragments from 5'UTR and X-tail region (3'UTR)	Blood-borne Disease Research
VR-3247SD™	Human gammaherpesvirus 4 (Epstein-Barr virus)	Fragments from LMP2, BNRF-1, EBER-1, BAMH1W, EBNA-2, BHRF-1, EBNA-1 Region, BXL-1, BALF-5, and LMP-1	Blood-borne Disease Research
VR-3261SD™	Human herpesvirus 8	Fragments from the minor capsid protein (ORF 26) and the latency-associated nuclear antigen (LANA or ORF 73)	Blood-borne Disease Research



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ATCC® No.	Organism	Source Information	Research Applications
VR-3237SD™	Sapovirus	Fragments from the RNA-dependent RNA polymerase, VP1, and polyprotein regions.	Digestive System Disease Research
VR-3238SD™	Astrovirus	Fragments from ORF1a, ORF1b, ORF2, and 3' UTR regions	Digestive System Disease Research
PRA-3000SD™	<i>Cyclospora cayetanensis</i>	Full 18S rRNA gene sequence, and full ITS1 and ITS2 sequences	Digestive System Disease Research
PRA-3007SD™	<i>Dientamoeba fragilis</i>	Fragments from the 18S ribosomal RNA, internal transcribed spacer 1 (ITS1), and 5.8S ribosomal RNA regions	Digestive System Disease Research
PRA-3006SD™	<i>Giardia lamblia</i>	Fragments from the 18S ribosomal RNA, beta-giardin, triose-phosphate isomerase, and glutamate dehydrogenase regions.	Digestive System Disease Research
VR-3257SD™	Hepatitis A virus	Fragments from the 5' untranslated region, viral capsid proteins (VP1- 4), self-cleaving peptide 2A, proteinase 3C, and 3D RNA polymerase.	Digestive System Disease Research
VR-3258SD™	Hepatitis E virus	Fragments from the 5' untranslated region, methyl transferase, Y domain, X domain, helicase, RNA-directed RNA polymerase, and open reading frames 2 and 3 (ORF2 and ORF3)	Digestive System Disease Research
VR-3260SD™	Human parechovirus 3	Fragments from the 5'UTR and the viral protein VP1.	Digestive System Disease Research
VR-3255SD™	Murine Norovirus	Fragments from the 5'UTR, NS1/2, NS5, NS6, NS7, Gp1, VF1, GP2, GP3, and 3'UTR	Digestive System Disease Research
VR-3234SD™	Norovirus GI	Fragments from the RNA-dependent RNA polymerase and VP1 regions	Digestive System Disease Research
VR-3235SD™	Norovirus GII	Fragments from the RNA-dependent RNA polymerase, VP1, and VP2 regions	Digestive System Disease Research
VR-3264D™	Human herpesvirus 6	Fragments from U31, U38, U57, U65/U66, U67, U90, and U94 regions	Neurological Disease Research
VR-3265SD™	Human herpesvirus 7	Fragments from U10, U31, U38, U39, U42, and U57 regions	Neurological Disease Research
VR-3270SD™	Monkeypox virus	Fragments from J2L, D14L, F3L, F8L, A27L, A29L, B6R, B7R, and N3R regions	Pox Disease Research
BAA-4000SD™	<i>Coxiella burnetii</i>	Fragments from the com1, icd, transposase (IS1111A), gyrA, and sodB regions	Respiratory Disease Research
VR-3251SD™	Human bocavirus	Fragments from the 5'UTR, NS1, NP1, VP1, VP2, and 3' UTR genes.	Respiratory Disease Research
VR-3262SD™	Human coronavirus strain HKU1	Fragments from from the acidic tandem repeat region, growth factor-like protein, NTPase/helicase domain, RNA-dependent RNA polymerase, spike, and nucleocapsid regions	Respiratory Disease Research
VR-3263SD™	Human coronavirus strain NL63	Fragments from NSP3 (ORF 1A), RdRp (nsp12), NTPase (nsp13), nsp16, spike protein, nucleocapsid, and 3' UTR	Respiratory Disease Research
VR-3250SD™	Human metapneumovirus (hMPV)	Fragments from the N, P, M, F, and L genes	Respiratory Disease Research
VR-3248SD™	Middle East respiratory syndrome coronavirus (MERS-CoV)	Fragments from the ORF1ab, ORF5, upper envelope (upE), ORF8b, nucleocapsid (N) protein gene, and 3' UTR regions	Respiratory Disease Research
VR-3276SD™	Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2)	Fragments from ORF 1ab (including ORF-1b-nsp14 and RdRp), Envelope, and Nucleocapsid regions.	Respiratory Disease Research
VR-3277SD™	Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2)	Fragment from the 5' Glycoprotein (Spike) region	Respiratory Disease Research
VR-3278SD™	Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2)	Fragment from the 3' Glycoprotein (Spike) region	Respiratory Disease Research
VR-3279SD™	Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2)	Fragment from the nsp9 and nsp12 (RdRp) regions.	Respiratory Disease Research
VR-3280SD™	Severe acute respiratory syndrome coronavirus [2003] (SARS-CoV)	Fragment from the nsp9 (RdRp), nsp11 and N regions.	Respiratory Disease Research
BAA-4001SD™	<i>Chlamydia trachomatis</i> LGV Type 1	Fragments from MOMP, 16S rRNA, pmpH, dnaB, putative virulence plasmid integrase regions, and conserved hypothetical virulence plasmid protein	Reproductive Health Research
BAA-4002SD™	<i>Chlamydia trachomatis</i> LGV Type 2	Fragments from MOMP, 16S rRNA, pmpH and dnaB regions	Reproductive Health Research

**TABLE 1.** Quantitative Synthetic Nucleic Acids

ATCC® No.	Organism	Source Information	Research Applications
BAA-4003SD™	<i>Chlamydia trachomatis</i> LGV Type 3	Fragments from MOMP, 16S rRNA, <i>pmpH</i> and <i>dnaB</i> regions	Reproductive Health Research
VR-3245SD™	Human immunodeficiency virus 1 (HIV-1)	Fragments from the 5' LTR, <i>gag</i> gene, <i>polgene</i> (including protease, reverse transcriptase, and integrase regions), <i>tat</i> gene, <i>rev</i> gene, and <i>nef</i> gene.	Reproductive Health Research & Blood-borne Disease Research
VR-3259SD™	Human T-cell leukemia virus 2 (HTLV-2)	Proviral genome sequence of HTLV-2 except the long terminal repeats (LTRs)	Reproductive Health Research & Blood-borne Disease Research
VR-3232SD™	Hepatitis B virus	Fragments from the highly conserved precore, core, P, S and X regions	Reproductive Health Research & Blood-borne Disease Research
VR-3266SD™	Human immunodeficiency virus 2 (HIV-2)	Fragments from the envelope (ENV), group specific antigen (GAG) and DNA polymerase (POL) regions	Reproductive Health Research & Blood-borne Disease Research
VR-3240SD™	Human papillomavirus 16	Full length genome of HPV 16 derived from a plasmid clone	Reproductive Health Research
VR-3241SD™	Human papillomavirus 18	Full length genome of HPV 18 derived from a plasmid clone	Reproductive Health Research
VR-3256SD™	Human papillomavirus 31	Full length genome of HPV 31 derived from a plasmid clone	Reproductive Health Research
BAA-2641SD™	<i>Mycoplasma genitalium</i>	Fragments from the 16S gene, <i>mgpA</i> , and <i>gap</i>	Reproductive Health Research
BAA-2642SD™	<i>Treponema pallidum</i>	Fragments from the <i>polA</i> , <i>tpr</i> , 23S gene, <i>arp</i> , 16S gene, <i>flaA</i> , 47kDa protein gene, and <i>bmp</i>	Reproductive Health Research
BAA-4004SD™	<i>Ureaplasma urealyticum</i>	Fragments from 16S rRNA, <i>ureA</i> , intergenic region 1, <i>ureB</i> , intergenic region 2, <i>ureC</i> , <i>ureG</i> , and MBA regions	Reproductive Health Research
PRA-3008SD	<i>Babesia canis</i>	Partial sequence of 18S ribosomal RNA	Vector-borne Disease Research
VR-3246SD™	Chikungunya virus	Fragments from the 5' UTR, nsP1, nsP2, nsP3, nsP4, E2, and E1 genes	Vector-borne Disease Research
VR-3228SD™	Dengue virus type 1	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
VR-3229SD™	Dengue virus type 2	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
VR-3230SD™	Dengue virus type 3	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
VR-3231SD™	Dengue virus type 4	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
VR-3239SD™	Eastern equine encephalitis virus	Fragments from the capsid, NSP1, NSP3, 3' UTR, E1 envelope glycoprotein, and the E2 envelope glycoprotein regions	Vector-borne Disease Research
PRA-3001SD™	<i>Plasmodium malariae</i>	Fragments from the 18S rRNA gene, UTR, cyclooxygenase 1 and 3 (Cox1 & Cox3), and Cytochrome B (Cytb) region	Vector-borne Disease Research
PRA-3004SD™	<i>Plasmodium vivax</i>	Fragments from 18s rRNA, mitochondrial DNA, <i>cox3</i> , <i>cox1</i> , <i>cytB</i> , and Aspartic protease PM4 regions	Vector-borne Disease Research
VR-3273SD™	Powassan virus lineage I	Fragments from the E, NS1, NS5, and 3' UTR regions.	Vector-borne Disease Research
VR-3275SD™	Powassan virus lineage II	Fragments from the E, NS1, NS5, and 3' UTR regions.	Vector-borne Disease Research
VR-3254SD™	Rift Valley fever virus	Fragments from the long, medium, and small genome segments, including the Gn, Nss, and Nsm genes	Vector-borne Disease Research
VR-3236SD™	Saint Louis encephalitis virus	Fragments from the NS1 gene, premembrane, envelope, NS5 gene, and 3' UTR regions	Vector-borne Disease Research
PRA-3012SD™	<i>Trypanosoma cruzi</i>	Fragments from 18S rRNA, Kinetoplast minicircle, and Lathosterol oxidase (TcSC5D) regions, and a full-length satellite sequence.	Vector-borne Disease Research
VR-3274SD™	West Nile virus	Fragments from the 5' UTR, capsid, anchored capsid protein, membrane glycoprotein precursor (prM), Envelope protein (ENV), Nonstructural protein NS1, Nonstructural protein NS2A, Nonstructural protein NS3, RNA-dependent RNA polymerase NS5 and 3' UTR regions.	Vector-borne Disease Research
VR-3253SD™	Yellow fever virus	Fragments from the capsid protein C, Pre-M, Envelope protein, NS1, NS2A, NS3, and NS5 regions.	Vector-borne Disease Research
VR-3252SD™	Zika virus	Fragments from the membrane glycoprotein precursor M, Envelope, NS1, NS2B, NS3, NS4B, and NS5 regions	Vector-borne Disease Research
VR-3268SD™	Lassa virus	Fragments from 5' UTR and glycoprotein regions	Zoonotic Disease Research
VR-3269SD™	Nipah virus	Complete nucleocapsid protein and fragments from the matrix and glycoprotein regions	Zoonotic Disease Research

# Genomic nucleic acids

ATCC genomic nucleic acids are whole genome preparations aseptically prepared from minimally passaged ATCC® Genuine Cultures. Each preparation is supported by stringent quality control testing to ensure product authenticity and functionality, including one or more of the following analyses:

- Agarose gel electrophoresis to ensure integrity
- Spectrophotometry to evaluate purity
- Droplet Digital™ PCR (ddPCR™) to calculate concentration
- PCR to confirm functional activity
- Sequencing and short tandem repeat analyses confirm species identity

Further, each of our products is manufactured under ISO 9001 certified and ISO/IEC 17025 accredited processes, so you can trust your results and reproduce your data – every time.

**TABLE 2.** Quantitative Genomic Nucleic Acids

ATCC® No.	Organism	Source Information	Research Applications
1015DQ™	<i>Aspergillus niger</i>		Agricultural Research
17023DQ™	<i>Rhodobacter sphaeroides</i>		Biotechnology Research
VR-538DQ™	Human herpesvirus 5	Adenoid tissue from 7-year-old female	Blood-related Disease Research
VR-1367DQ™	Human herpesvirus 3 (Varicella-zoster virus)	Vesicular fluid from child with chickenpox; Georgia	Blood-related Disease Research
700532DQ™	<i>Neisseria meningitidis</i>	Patient with meningococcal septicaemia	Blood-related Disease Research
12453DQ™	<i>Proteus mirabilis</i>		Blood-related Disease Research
25285DQ™	<i>Bacteroides fragilis</i>	Appendix abscess	Digestive System Disease Research
50608DQ™	<i>Blastocystis hominis</i>	Isolated 1986	Digestive System Disease Research
700819DQ™	<i>Campylobacter jejuni</i> subsp. <i>jejuni</i>	Human feces	Digestive System Disease Research
750DQ™	<i>Candida tropicalis</i>	Patient with bronchomycosis	Digestive System Disease Research
8090DQ™	<i>Citrobacter freundii</i>		Digestive System Disease Research
43598DQ™	<i>Clostridioides difficile</i>	Human feces, asymptomatic neonate, Belgium	Digestive System Disease Research
BAA-1382DQ™	<i>Clostridioides difficile</i>	Clinical isolate; Switzerland	Digestive System Disease Research
BAA-1870DQ™	<i>Clostridioides difficile</i>		Digestive System Disease Research
13124DQ™	<i>Clostridioides perfringens</i>	Clinical isolate, Switzerland	Digestive System Disease Research
PRA-67DQ™	<i>Cryptosporidium parvum</i>	Animal feces; 2002	Digestive System Disease Research
30459DQ™	<i>Entamoeba histolytica</i>	Colonic biopsy of rectal ulcer from adult human male with amebic dysentery; Mexico City, Mexico, 1967	Digestive System Disease Research
700802DQ™	<i>Enterococcus faecalis</i>	Human blood, patient, St. Louis, Missouri, US, 1987	Digestive System Disease Research
700221DQ™	<i>Enterococcus faecium</i>	Human feces, Connecticut	Digestive System Disease Research
8739DQ™	<i>Escherichia coli</i>	Feces	Digestive System Disease Research
10798DQ™	<i>Escherichia coli</i>	Feces from diphtheria convalescent	Digestive System Disease Research
25922DQ™	<i>Escherichia coli</i> O6	Clinical isolate	Digestive System Disease Research
43895DQ™	<i>Escherichia coli</i> O157:H7	Raw hamburger meat implicated in a hemorrhagic colitis outbreak	Digestive System Disease Research
700926DQ™	<i>Escherichia coli</i>	Derived from parent strain W1485 by acridine orange curing of the F plasmid	Digestive System Disease Research
700928DQ™	<i>Escherichia coli</i>	Human clinical specimen, blood and urine from a women with acute pyelonephritis, Baltimore, Maryland	Digestive System Disease Research
BAA-2192DQ™	<i>Escherichia coli</i> O145:Nonmotile	Human stool, South Dakota, USA	Digestive System Disease Research
BAA-2193DQ™	<i>Escherichia coli</i> O45:H2	Stool, Maine	Digestive System Disease Research
BAA-2196DQ™	<i>Escherichia coli</i> O26:H11	Stool, Michigan	Digestive System Disease Research
BAA-2215DQ™	<i>Escherichia coli</i> O103:H11	Idaho	Digestive System Disease Research
BAA-2219DQ™	<i>Escherichia coli</i> O121:H19	Human stool, Virginia	Digestive System Disease Research
BAA-2326DQ™	<i>Escherichia coli</i> O104:H4	Stool sample from patient with hemolytic uremic syndrome, 2011	Digestive System Disease Research
BAA-2440DQ™	<i>Escherichia coli</i> O111	Human	Digestive System Disease Research
29212DQ™	<i>Enterococcus faecalis</i>	Urine	Digestive System Disease Research

**TABLE 2.** Quantitative Genomic Nucleic Acids

ATCC® No.	Organism	Source Information	Research Applications
27766DQ™	<i>Faecalibacterium prausnitzii</i>	Human feces	Digestive System Disease Research
30888DQ™	<i>Giardia intestinalis</i>	Human female, Portland, OR, 1971	Digestive System Disease Research
700392DQ™	<i>Helicobacter pylori</i>	Stomach of a human patient with gastritis; UK	Digestive System Disease Research
VR-930DQ™	Human adenovirus 41	Feces from child with gastroenteritis, Netherlands, 1973	Digestive System Disease Research
VR-1775DQ™	Human Enterovirus 71	Stool sample from 2-month-old male with aseptic meningitis	Digestive System Disease Research
VR-931DQ™	Human mastadenovirus F	Feces, infantile gastroenteritis, Netherlands, 1979	Digestive System Disease Research
BAA-679DQ™	<i>Listeria monocytogenes</i>	Tissue, animal - rabbit, Cambridge United Kingdom, 1924	Digestive System Disease Research
BAA-968D™	<i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i>	Animal feces; Wisconsin, 1990	Digestive System Disease Research
VR-824DQ™	Reovirus 3	Child with diarrhea	Digestive System Disease Research
VR-2018DQ™	Rotavirus A	Diarrhea stool from patient positive for rotavirus	Digestive System Disease Research
700720DQ™	<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Typhimurium	Wild type strain isolated from a natural source; 1948	Digestive System Disease Research
BAA-611DQ™	<i>Streptococcus agalactiae</i>	Clinical specimen, Human	Digestive System Disease Research
PRA-310DQ™	<i>Toxoplasma gondii</i>	Derived from <i>in vivo</i> RH strain ATCC 50174	Digestive System Disease Research
39315DQ™	<i>Vibrio cholerae</i>	Stool from cholera patient, Bangladesh	Digestive System Disease Research
17978DQ™	<i>Acinetobacter baumannii</i>	Fatal meningitis of a 4-month old infant	Epidermal Disease Research
10231DQ™	<i>Candida albicans</i>	Man with bronchomycosis	Epidermal Disease Research
22019DQ™	<i>Candida parapsilosis</i>	Case of sprue, Puerto Rico	Epidermal Disease Research
VR-1432DQ™	Human enterovirus 71	Vesicular fluid from an adult female with hand, foot, and mouth disease, Wuhan, China.	Epidermal Disease Research
VR-1467DQ™	Human herpesvirus 6B	Peripheral blood lymphocytes from a 36 year-old male AIDS patient, Zaire, Africa	Epidermal Disease Research
47085DQ™	<i>Pseudomonas aeruginosa</i>		Epidermal Disease Research
9027DQ™	<i>Pseudomonas aeruginosa</i>	Outer ear infection	Epidermal Disease Research
6538DQ™	<i>Staphylococcus aureus</i>	Human lesion	Epidermal Disease Research
25923DQ™	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	Clinical Isolate	Epidermal Disease Research
29213DQ™	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	Wound	Epidermal Disease Research
43300DQ™	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	Clinical isolate, Kansas	Epidermal Disease Research
700699DQ™	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	Isolated from pus and debrided tissue at surgical incision in sternum of 4 month-old infant; Japan, 1996	Epidermal Disease Research
BAA-1556DQ™	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	Wrist abscess, 36-year-old HIV+ man with history of IV drug use	Epidermal Disease Research
BAA-1717DQ™	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	From adolescent patient with severe sepsis syndrome; Texas Children's Hospital	Epidermal Disease Research
BAA-1718DQ™	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	From a 12-year-old white female with a buttock abscess	Epidermal Disease Research
12228DQ™	<i>Staphylococcus epidermidis</i>		Epidermal Disease Research
19615DQ™	<i>Streptococcus pyogenes</i>	Pharynx of child following episode of sore throat.	Epidermal Disease Research
700294DQ™	<i>Streptococcus pyogenes</i>	Infected wound	Epidermal Disease Research
47011T1-DQ™	<i>Escherichia coli</i> with ATCC 16S Tag 1		Metagenomics Research
BAA-2975T3-DQ™	<i>Staphylococcus aureus</i> with ATCC 16S Tag 3		Metagenomics Research
3624T2-DQ™	<i>Clostridium perfringens</i> with ATCC 16S Tag 2		Metagenomics Research
204508DQ™	<i>Saccharomyces cerevisiae</i>	Wild type strain	Molecular Research
MYA-4941DQ™	<i>Saccharomyces cerevisiae</i>	Parent strain used <i>Saccharomyces cerevisiae</i> BJ5465	Molecular Research
VR-1583DQ™	JC polyomavirus	Brain tumor of owl monkey	Neural Research
43037DQ™	<i>Tannerella forsythia</i>	Human periodontal pocket, Massachusetts, US	Oral Health Research
MYA-646DQ™	<i>Candida dubliniensis</i>	Oral cavity of HIV-infected patient, Dublin, Ireland	Oral Health Research
25586DQ™	<i>Fusobacterium nucleatum</i> subsp. <i>nucleatum</i>	Cervico-facial lesion	Oral Health Research
35405DQ™	<i>Treponema denticola</i>	Human periodontal pocket, Montreal, Canada	Oral Health Research

**TABLE 2.** Quantitative Genomic Nucleic Acids

ATCC® No.	Organism	Source Information	Research Applications
9643DQ™	<i>Aspergillus flavus</i>	Shoe sole, New Guinea	Opportunistic Pathogen Research
MYA-2876DQ™	<i>Candida albicans</i>	Human clinical specimen	Opportunistic Pathogen Research
2001DQ™	<i>Candida glabrata</i>	Feces	Opportunistic Pathogen Research
32196DQ™	<i>Candida krusei</i>	Cabbage frass, Japan	Opportunistic Pathogen Research
34449DQ™	<i>Candida lusitanae</i>	Pig, Portugal	Opportunistic Pathogen Research
13047DQ™	<i>Enterobacter cloacae</i> subsp. <i>cloacae</i>	Spinal fluid	Opportunistic Pathogen Research
29905DQ™	<i>Proteus vulgaris</i>		Opportunistic Pathogen Research
27853DQ™	<i>Pseudomonas aeruginosa</i>	Blood culture	Opportunistic Pathogen Research
1022DQ™	<i>Aspergillus fumigatus</i>	Lung of chicken, Connecticut	Respiratory Disease Research
20542DQ™	<i>Aspergillus terreus</i>		Respiratory Disease Research
VR-1558DQ™	Betacoronavirus 1	Man with cold-like illness	Respiratory Disease Research
4617DQ™	<i>Bordetella bronchiseptica</i>		Respiratory Disease Research
51541DQ™	<i>Bordetella holmesii</i>	Animal blood, Buffalo, New York, USA	Respiratory Disease Research
15311DQ™	<i>Bordetella parapertussis</i>	Whooping cough	Respiratory Disease Research
9797DQ™	<i>Bordetella pertussis</i>		Respiratory Disease Research
BAA-589DQ™	<i>Bordetella pertussis</i>	Human clinical specimen	Respiratory Disease Research
53592DQ™	<i>Chlamydophila pneumoniae</i>	Throat of student with acute pharyngitis, Seattle, WA, 1983	Respiratory Disease Research
VR-1360DQ™	<i>Chlamydophila pneumoniae</i>	Sputum of pneumonia patient, Georgia	Respiratory Disease Research
VR-1826DQ™	Enterovirus 68	Nasal-pharyngeal swab of hospitalized 10-month-old female with pneumonia, California, 1962	Respiratory Disease Research
51907DQ™	<i>Haemophilus influenzae</i>		Respiratory Disease Research
VR-1DQ™	Human adenovirus 1	Adenoid tissue from five-year-old child with hypertrophied tonsils and adenoids, Maryland, 1953	Respiratory Disease Research
VR-1572DQ™	Human adenovirus 4	Throat washings of patient, Fort Leonard Wood, Missouri, 1952-1953	Respiratory Disease Research
VR-7DQ™	Human adenovirus 7	Throat washing from military recruit with pharyngitis, California, 1954	Respiratory Disease Research
VR-740DQ™	Human coronavirus 229E	Nasal and throat swabs from man with upper respiratory illness	Respiratory Disease Research
VR-94DQ™	Human parainfluenza virus 1	Throat swab of 3-year-old boy with acute laryngitis, 1957	Respiratory Disease Research
VR-93DQ™	Human parainfluenza virus 3	One-year-old female with pneumonia, Washington, DC, 1957	Respiratory Disease Research
VR-26DQ™	Human respiratory syncytial virus	17-month-old male with pneumonia, Maryland, 1956	Respiratory Disease Research
VR-955DQ™	Human respiratory syncytial virus	Throat swab from 23-month-old girl with diffuse interstitial pneumonia, Massachusetts, 1977	Respiratory Disease Research
VR-1540DQ™	Human respiratory syncytial virus	Lower respiratory tract of infant with bronchiolitis and bronchopneumonia, Melbourne, Australia, 1961	Respiratory Disease Research
VR-1580DQ™	Human respiratory syncytial virus	Respiratory secretions from child with acute respiratory disease seen at Children's Hospital of the District of Columbia, Washington, DC, 1962.	Respiratory Disease Research
VR-1559DQ™	Human rhinovirus 1A	Naso-pharyngeal washings from patient with mild respiratory illness, Ohio.	Respiratory Disease Research
VR-1645DQ™	Human rhinovirus 1B	Presumed from human throat washings	Respiratory Disease Research
VR-482DQ™	Human rhinovirus 2	Nasal washing from patient with cold	Respiratory Disease Research
VR-1663DQ™	Human rhinovirus 17	Presumed from throat swab from adult with upper respiratory illness, North Carolina, 1959	Respiratory Disease Research
VR-1187DQ™	Human rhinovirus 77		Respiratory Disease Research
VR-95DQ™	Influenza A virus (H1N1)	Patient in Puerto Rico, 1934	Respiratory Disease Research
VR-1469DQ™	Influenza A virus (H1N1)	Patient in Puerto Rico, 1934	Respiratory Disease Research
VR-1736DQ™	Influenza A virus (H1N1)	Nasopharyngeal specimen from a patient positive for Flu A in Virginia, 2009	Respiratory Disease Research
VR-1884DQ™	Influenza A virus (H1N1)	Classical reassortant virus derived from A/California/07/2009 (H1N1)pdm09 and A/Puerto Rico/8/1934 (H1N1)	Respiratory Disease Research



**TABLE 2.** Quantitative Genomic Nucleic Acids

ATCC® No.	Organism	Source Information	Research Applications
VR-1894DQ™	Influenza A virus (H1N1)	Isolated from a human in California, USA on April 9, 2009	Respiratory Disease Research
VR-1882DQ™	Influenza A virus (H3N2)	Human in Wisconsin, USA, on June 7, 2009	Respiratory Disease Research
VR-1804DQ™	Influenza B virus	Human, Florida, 2006	Respiratory Disease Research
VR-1885DQ™	Influenza B virus	Classical reassortant virus derived from B/Wisconsin/1/2010 (Yamagata Lineage) and B/Lee/1940	Respiratory Disease Research
13048DQ™	<i>Klebsiella aerogenes</i>	Sputum	Respiratory Disease Research
BAA-2782DQ™	<i>Klebsiella pneumoniae</i>	Peritoneal fluid	Respiratory Disease Research
700721DQ™	<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i>	Sputum from a 66 year-old man, 1994	Respiratory Disease Research
33152DQ™	<i>Legionella pneumophila</i> subsp. <i>pneumophila</i>	Human lung	Respiratory Disease Research
VR-106DQ™	Mumps virus	Pooled saliva from patients, Massachusetts	Respiratory Disease Research
25420DQ™	<i>Mycobacterium africanum</i>	Expectorate; senegalese with pulmonary TB	Respiratory Disease Research
35734D™	<i>Mycobacterium bovis</i>	Bovine milk	Respiratory Disease Research
BAA-1052DQ™	<i>Mycobacterium talmoniae</i>	Clinical human specimen, July 31, 2000	Respiratory Disease Research
19422DQ™	<i>Mycobacterium microti</i>		Respiratory Disease Research
BAA-688DQ™	<i>Mycobacterium pinnipedii</i>	Clinical animal specimen, Australia, 1986	Respiratory Disease Research
25177DQ™	<i>Mycobacterium tuberculosis</i>		Respiratory Disease Research
25618DQ™	<i>Mycobacterium tuberculosis</i>	Derived from existing strain; New York, 1934	Respiratory Disease Research
700669DQ™	<i>Streptococcus pneumoniae</i>	Hospital, Barcelona, Spain, 1984	Respiratory Disease Research
VR-5DQ™	Human adenovirus 5	Spontaneously degenerating tissue culture of adenoid tissue from a 4-year-old girl with enlarged chronically infected tonsils, Washington DC, 1953	Respiratory Disease Research
VR-92DQ™	Human parainfluenza virus 2	11-month-old female with acute laryngotracheobronchitis, Ohio, 1955	Respiratory Disease Research
VR-283DQ™	Human rhinovirus 16	Throat swab from healthy 2-year-old female, Washington, DC, 1960	Respiratory Disease Research
29342DQ™	<i>Mycoplasma pneumoniae</i>	Patient with pneumonia	Respiratory Disease Research
BAA-55DQ™	<i>Atopobium vaginiae</i>	Vaginal flora from a healthy woman, Sweden, 1998	Reproductive Health Research
VR-901BD™	<i>Chlamydia trachomatis</i> LGV Serovar I	Lymph node from human with LGV	Reproductive Health Research
VR-903D™	<i>Chlamydia trachomatis</i> LGV Serovar III	Lymph node from human with LGV	Reproductive Health Research
VR-902BD™	<i>Chlamydia trachomatis</i> LGV Serovar II	Bubo from human with LGV	Reproductive Health Research
49145DQ™	<i>Gardnerella vaginalis</i>	Clinical isolate	Reproductive Health Research
33940DQ™	<i>Haemophilus ducreyi</i>		Reproductive Health Research
VR-539DQ™	Human Herpesvirus 1	Brain, human, encephalitis	Reproductive Health Research
VR-1493DQ™	Human Herpesvirus 1	Lip lesion of human with cold sore	Reproductive Health Research
VR-540DQ™	Human Herpesvirus 2	Brain of a 50 year old female with multiple sclerosis; Iceland	Reproductive Health Research
VR-734DQ™	Human Herpesvirus 2	Human genital infection	Reproductive Health Research
33820DQ™	<i>Lactobacillus crispatus</i>		Reproductive Health Research
33323DQ™	<i>Lactobacillus gasseri</i>		Reproductive Health Research
55195DQ™	<i>Lactobacillus iners</i>	Patient with bacterial vaginosis	Reproductive Health Research
25258DQ™	<i>Lactobacillus jensenii</i>	Human vaginal discharge	Reproductive Health Research
35241DQ™	<i>Mobiluncus curtisii</i>	Human vagina	Reproductive Health Research
5243DQ™	<i>Mobiluncus mulieris</i>	Human vagina	Reproductive Health Research
3530DQ™	<i>Mycoplasma genitalium</i>	Urethra of male with non-gonococcal urethritis	Reproductive Health Research
23114DQ™	<i>Mycoplasma hominis</i>	Rectal swab	Reproductive Health Research
700825DQ™	<i>Neisseria gonorrhoeae</i>	Male patient with disseminated gonococcal infection; 1983	Reproductive Health Research
29303DQ™	<i>Prevotella bivia</i>	Endometrium	Reproductive Health Research
15305DQ™	<i>Staphylococcus saprophyticus</i> subsp. <i>saprophyticus</i>	Urine	Reproductive Health Research



**TABLE 2.** Quantitative Genomic Nucleic Acids

ATCC® No.	Organism	Source Information	Research Applications
13813DQ™	<i>Streptococcus agalactiae</i>		Reproductive Health Research
30001DQ™	<i>Trichomonas vaginalis</i>	Vaginal exudate from human with acute vaginitis, 1956	Reproductive Health Research
PRA-302DQ™	<i>Babesia duncani</i>	Human blood, Washington state, 1991	Vector-borne Disease Research
PRA-398DQ™	<i>Babesia microti</i>	Blood, human babesiosis, Nantucket, MA, 1983	Vector-borne Disease Research
35210DQ™	<i>Borrelia burgdorferi</i>	Tick, Ixodes dammini; New York	Vector-borne Disease Research
30012DQ™	<i>Leishmania major</i>	Human, Teheran, Iran, 1949	Vector-borne Disease Research
PRA-405DQ™	<i>Plasmodium falciparum</i>		Vector-borne Disease Research
VR-1838DQ™	Zika virus	Blood of a rhesus monkey that became infected while stationed as a sentinel in forest near Entebbe, Uganda, 1947	Vector-borne Disease Research
VR-1843DQ™	Zika virus	Human serum specimen, Puerto Rico, December 2015	Vector-borne Disease Research
30174D™	<i>Naegleria fowleri</i>	Human spinal fluid; Orlando, FL, 1968	Water Contamination

## Certified reference materials

ATCC Certified Reference Materials (CRMs) are quantified and produced under an ISO 17034 accredited process to confirm identity, well-defined characteristics, and an established chain of custody. These tools are ideal for:

- Establishing assay specificity and sensitivity
- Validating or comparing test methods
- Testing and calibration in ISO/IEC 17025 accredited labs

CRMs offer the highest level of quality assurance, accuracy, and traceability, providing you with complete confidence that your results are reliable and reproducible.

ATCC® No.	Organism	Source Information
qCRM-15531D™	<i>Mycoplasma pneumoniae</i>	Isolated by Hayflick from monkey kidney tissue-culture fluids of the FH strain (Eaton Agent Virus) supplied by C. Liu, who recovered this strain in embryonated eggs from a student with atypical pneumonia
qCRM-17981D™	<i>Mycoplasma hyorhinis</i>	Nasal cavity of pig
qCRM-19610D™	<i>Mycoplasma gallisepticum</i>	Suspension of tracheal and airsac tissues of chickens with chronic respiratory disease
qCRM-19989D™	<i>Mycoplasma fermentans</i>	Ulcerative balanitis
qCRM-23064D™	<i>Mycoplasma salivarium</i>	Saliva
qCRM-23206D™	<i>Acholeplasma laidlawii</i>	Sewage
qCRM-23714D™	<i>Mycoplasma orale</i>	Oropharynx of child, Washington, DC
qCRM-23838D™	<i>Mycoplasma arginine</i>	Mouse brain experimentally infected with scrapies
qCRM-25204D™	<i>Mycoplasma synoviae</i>	Hock joint of chicken
qCRM-27545D™	<i>Mycoplasma hominis</i>	Human blood culture

# CREDIBLE STANDARDS INCREDIBLE RESULTS



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