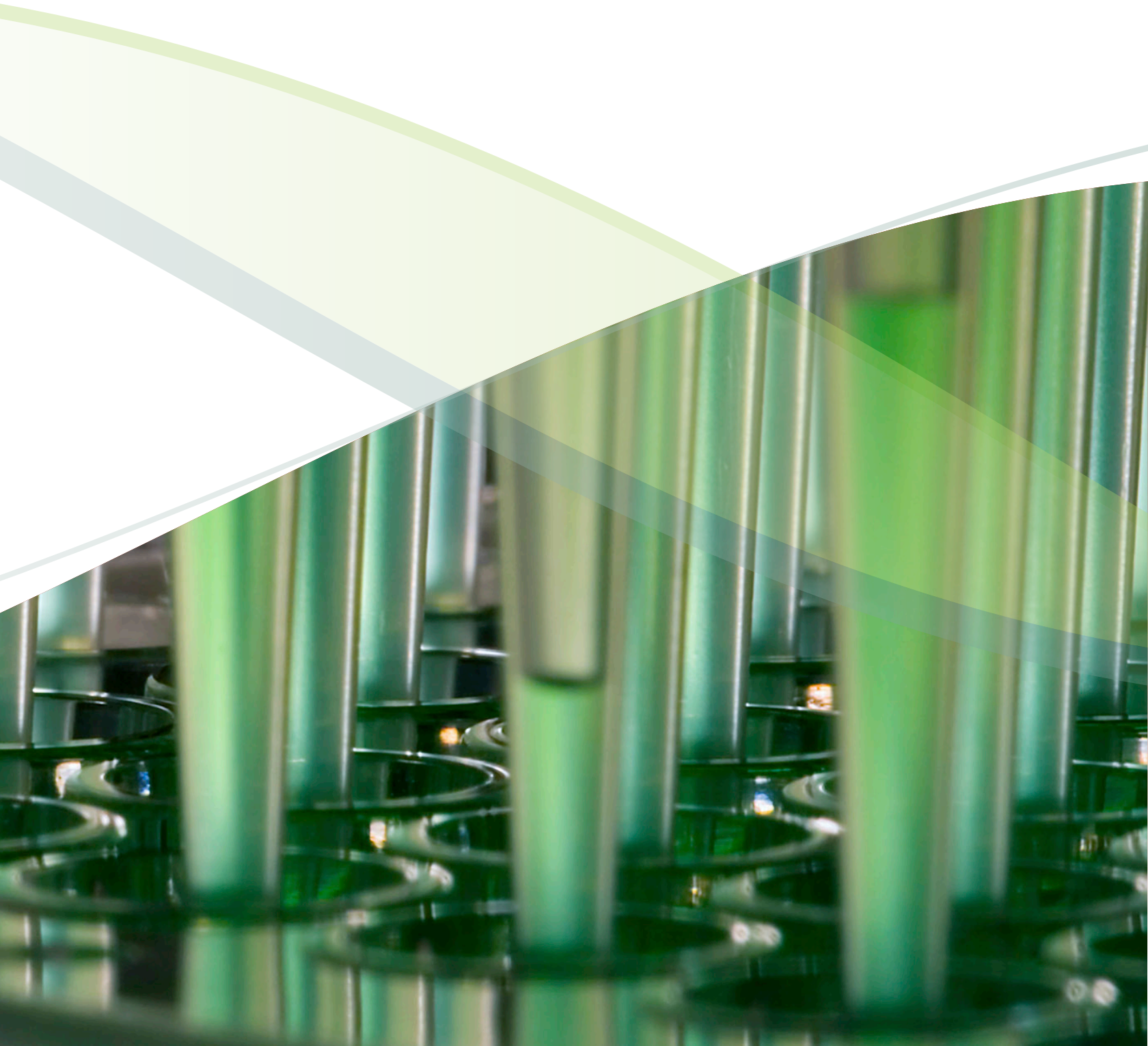




# Quantitative Nucleic Acids



# 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:

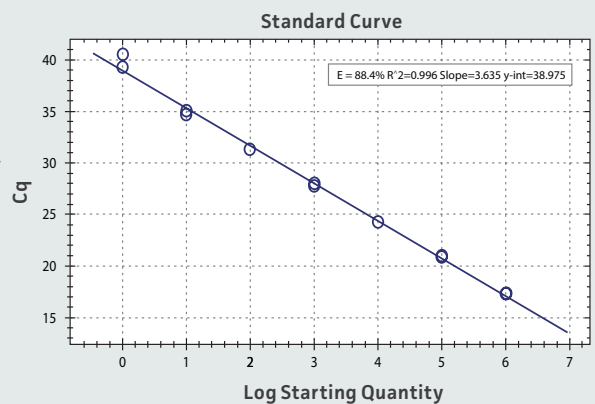
- **Synthetic nucleic acids** – DNA and RNA synthetically manufactured under ISO 13485 guidance to include key target regions from select bacterial and viral strains
- **Genomic nucleic acids** – Whole genome preparations aseptically prepared from minimally passaged ATCC® Genuine Cultures
- **Certified 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](http://www.atcc.org).



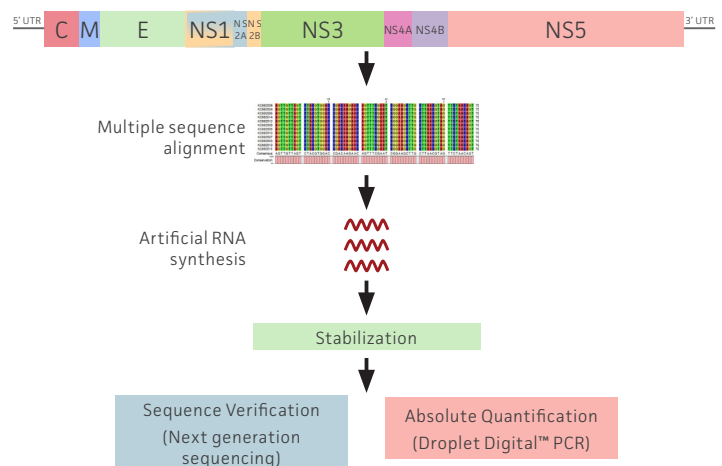
Standard curve generated using the Synthetic Dengue virus (DENV) type 4 molecular standard.

## 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 guidance
- 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 proprietary stabilization matrix to ensure consistent results, run after run.



**Table 1: Quantitative Synthetic Nucleic Acids**

ATCC® No.	Organism	Source Information	Research Applications
<a href="#">VR-3249SD™</a>	BK virus	Full length genome of BK virus derived from a plasmid clone	Blood-borne Disease Research
<a href="#">VR-3233SD™</a>	Hepatitis C virus	Fragments from 5'UTR and X-tail region (3'UTR)	Blood-borne Disease Research
<a href="#">VR-3247SD™</a>	Human gammaherpesvirus 4 (Epstein-Barr virus)	Fragments from LMP2, BNRF-1, EBER-1, BAMH1W, EBNA-2, BHRF-1, EBNA-1 Region, BXL1F-1, BALF-5, and LMP-1	Blood-borne Disease Research
<a href="#">VR-3261SD™</a>	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
<a href="#">VR-3237SD™</a>	Sapovirus	Fragments from the RNA-dependent RNA polymerase, VP1, and polyprotein regions.	Digestive System Disease Research
<a href="#">VR-3238SD™</a>	Astrovirus	Fragments from ORF1a, ORF1b, ORF2, and 3' UTR regions	Digestive System Disease Research
<a href="#">PRA-3000SD™</a>	<i>Cyclospora cayetanensis</i>	Full 18S rRNA gene sequence, and full ITS1 and ITS2 sequences	Digestive System Disease Research
<a href="#">PRA-3011SD™</a>	<i>Cryptosporidium hominis</i>	Fragments from 18s rRNA, heat shock protein 70 (hsp70), COWP, GP60, dnaj-like protein, and LIB13 regions	Digestive System Disease Research
<a href="#">PRA-3007SD™</a>	<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
<a href="#">PRA-3006SD™</a>	<i>Giardia lamblia</i>	Fragments from the 18S ribosomal RNA, beta-giardin, triosephosphate isomerase, and glutamate dehydrogenase regions.	Digestive System Disease Research
<a href="#">VR-3257SD™</a>	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
<a href="#">VR-3258SD™</a>	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
<a href="#">VR-3260SD™</a>	Human parechovirus 3	Fragments from the 5'UTR and the viral protein VP1.	Digestive System Disease Research
<a href="#">VR-3255SD™</a>	Murine Norovirus	Fragments from the 5'UTR, NS1/2, NS5, NS6, NS7, Gp1, VF1, GP2, GP3, and 3'UTR	Digestive System Disease Research
<a href="#">VR-3234SD™</a>	Norovirus GI	Fragments from the RNA-dependent RNA polymerase and VP1 regions	Digestive System Disease Research
<a href="#">VR-3235SD™</a>	Norovirus GII	Fragments from the RNA-dependent RNA polymerase, VP1, and VP2 regions	Digestive System Disease Research
<a href="#">VR-3264SD™</a>	Human herpesvirus 6	Fragments from U31, U38, U57, U65/U66, U67, U90, and U94 regions	Neurological Disease Research
<a href="#">VR-3265SD™</a>	Human herpesvirus 7	Fragments from U10, U31, U38, U39, U42, and U57 regions	Neurological Disease Research
<a href="#">BAA-4009SD™</a>	<i>Mycobacterium leprae</i>	Fragments from the RLEP, Ag85B, 16S rRNA, and <i>rpoB</i> regions	Neurological Disease Research
<a href="#">VR-3270SD™</a>	Monkeypox virus	Fragments from J2L, D14L, F3L, F8L, A27L, A29L, B6R, B7R, and N3R regions	Pox Disease Research
<a href="#">BAA-4000SD™</a>	<i>Coxiella burnetii</i>	Fragments from the com1, icd, transposase (IS1111A), gyrA, and sodB regions	Respiratory Disease Research
<a href="#">VR-3251SD™</a>	Human bocavirus	Fragments from the 5'UTR, NS1, NP1, VP1, VP2, and 3' UTR genes.	Respiratory Disease Research
<a href="#">VR-3262SD™</a>	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
<a href="#">VR-3263SD™</a>	Human coronavirus strain NL63	Fragments from NSP3 (ORF 1A), RdRp (nsp12), NTPase (nsp13), nsp16, spike protein, nucleocapsid, and 3' UTR	Respiratory Disease Research
<a href="#">VR-3250SD™</a>	Human metapneumovirus (hMPV)	Fragments from the N, P, M, F, and L genes	Respiratory Disease Research
<a href="#">VR-3248SD™</a>	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
<a href="#">MYA-5006SD™</a>	<i>Pneumocystis jirovecii</i>	Fragments from the mtLSU rRNA, mtSSU rRNA, DHPS, MSG, KEX-1, and Beta-tubulin regions.	Respiratory Disease Research
<a href="#">VR-3276SD™</a>	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
<a href="#">VR-3277SD™</a>	Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2)	Fragment from the 5' Glycoprotein (Spike) region	Respiratory Disease Research
<a href="#">VR-3278SD™</a>	Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2)	Fragment from the 3' Glycoprotein (Spike) region	Respiratory Disease Research
<a href="#">VR-3279SD™</a>	Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2)	Fragment from the nsp9 and nsp12 (RdRp) regions.	Respiratory Disease Research

**Table 1: Quantitative Synthetic Nucleic Acids**

ATCC® No.	Organism	Source Information	Research Applications
<a href="#">VR-3280SD™</a>	Severe acute respiratory syndrome coronavirus [2003] (SARS-CoV)	Fragment from the nsp9 (RdRp), nsp11 and N regions.	Respiratory Disease Research
<a href="#">BAA-4001SD™</a>	<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
<a href="#">BAA-4002SD™</a>	<i>Chlamydia trachomatis</i> LGV Type 2	Fragments from MOMP, 16S rRNA, pmpH and dnaB regions	Reproductive Health Research
<a href="#">BAA-4003SD™</a>	<i>Chlamydia trachomatis</i> LGV Type 3	Fragments from MOMP, 16S rRNA, pmpH and dnaB regions	Reproductive Health Research
<a href="#">VR-3245SD™</a>	Human immunodeficiency virus 1 (HIV-1)	Fragments from the 5' LTR, gag gene, polgene (including protease, reverse transcriptase, and integrase regions), tat gene, rev gene, and nef gene.	Reproductive Health Research & Blood-borne Disease Research
<a href="#">VR-3259SD™</a>	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
<a href="#">VR-3232SD™</a>	Hepatitis B virus	Fragments from the highly conserved precore, core, P, S and X regions	Reproductive Health Research & Blood-borne Disease Research
<a href="#">VR-3266SD™</a>	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
<a href="#">VR-3240SD™</a>	Human papillomavirus 16	Full length genome of HPV 16 derived from a plasmid clone	Reproductive Health Research
<a href="#">VR-3241SD™</a>	Human papillomavirus 18	Full length genome of HPV 18 derived from a plasmid clone	Reproductive Health Research
<a href="#">VR-3256SD™</a>	Human papillomavirus 31	Full length genome of HPV 31 derived from a plasmid clone	Reproductive Health Research
<a href="#">BAA-2641SD™</a>	<i>Mycoplasma genitalium</i>	Fragments from the 16S gene, mgpA, and gap	Reproductive Health Research
<a href="#">BAA-2642SD™</a>	<i>Treponema pallidum</i>	Fragments from the polA, tpr, 23S gene, arp, 16S gene, flaA, 47kDa protein gene, and bmp	Reproductive Health Research
<a href="#">BAA-4004SD™</a>	<i>Ureaplasma urealyticum</i>	Fragments from 16S rRNA, ureA, intergenic region 1, ureB, intergenic region 2, ureC, ureG, and MBA regions	Reproductive Health Research
<a href="#">PRA-3008SD</a>	<i>Babesia canis</i>	Partial sequence of 18S ribosomal RNA	Vector-borne Disease Research
<a href="#">VR-3272SD™</a>	Bourbon virus	Fragments from the PB1 and NP regions	Vector-borne Disease Research
<a href="#">VR-3246SD™</a>	Chikungunya virus	Fragments from the 5' UTR, nsP1, nsP2, nsP3, nsP4, E2, and E1 genes	Vector-borne Disease Research
<a href="#">VR-3228SD™</a>	Dengue virus type 1	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
<a href="#">VR-3229SD™</a>	Dengue virus type 2	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
<a href="#">VR-3230SD™</a>	Dengue virus type 3	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
<a href="#">VR-3231SD™</a>	Dengue virus type 4	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
<a href="#">VR-3239SD™</a>	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
<a href="#">PRA-3001SD™</a>	<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
<a href="#">PRA-3004SD™</a>	<i>Plasmodium vivax</i>	Fragments from 18s rRNA, mitochondrial DNA, cox3, cox1, cytB, and Aspartic protease PM4 regions	Vector-borne Disease Research
<a href="#">VR-3273SD™</a>	Powassan virus lineage I	Fragments from the E, NS1, NS5, and 3' UTR regions.	Vector-borne Disease Research
<a href="#">VR-3275SD™</a>	Powassan virus lineage II	Fragments from the E, NS1, NS5, and 3' UTR regions.	Vector-borne Disease Research
<a href="#">VR-3254SD™</a>	Rift Valley fever virus	Fragments from the long, medium, and small genome segments, including the Gn, Nss, and Nsm genes	Vector-borne Disease Research
<a href="#">VR-3236SD™</a>	Saint Louis encephalitis virus	Fragments from the NS1 gene, premembrane, envelope, NS5 gene, and 3' UTR regions	Vector-borne Disease Research
<a href="#">PRA-3012SD™</a>	<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
<a href="#">VR-3274SD™</a>	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
<a href="#">VR-3253SD™</a>	Yellow fever virus	Fragments from the capsid protein C, Pre-M, Envelope protein, NS1, NS2A, NS3, and NS5 regions.	Vector-borne Disease Research
<a href="#">VR-3252SD™</a>	Zika virus	Fragments from the membrane glycoprotein precursor M, Envelope, NS1, NS2B, NS3, NS4B, and NS5 regions	Vector-borne Disease Research
<a href="#">VR-3268SD™</a>	Lassa virus	Fragments from 5' UTR and glycoprotein regions	Zoonotic Disease Research
<a href="#">VR-3269SD™</a>	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
<a href="#">1015DQ™</a>	<i>Aspergillus niger</i>		Agricultural Research
<a href="#">177525DQ™</a>	<i>Megasphaera elsdenii</i>		Agricultural Research
<a href="#">9649DQ™</a>	<i>Lactobacillus delbrueckii</i> subsp. <i>delbrueckii</i>	Sour grain mash	Biotechnology Research
<a href="#">17023DQ™</a>	<i>Rhodobacter sphaeroides</i>		Biotechnology Research
<a href="#">VR-538DQ™</a>	Human herpesvirus 5	Adenoid tissue from 7-year-old female	Blood-related Disease Research
<a href="#">VR-1367DQ™</a>	Human herpesvirus 3 (Varicella-zoster virus)	Vesicular fluid from child with chickenpox; Georgia	Blood-related Disease Research
<a href="#">700532DQ™</a>	<i>Neisseria meningitidis</i>	Patient with meningococcal <i>septicaemia</i>	Blood-related Disease Research
<a href="#">12453DQ™</a>	<i>Proteus mirabilis</i>		Blood-related Disease Research
<a href="#">25285DQ™</a>	<i>Bacteroides fragilis</i>	Appendix abscess	Digestive System Disease Research
<a href="#">50608DQ™</a>	<i>Blastocystis hominis</i>	Isolated 1986	Digestive System Disease Research
<a href="#">33559DQ™</a>	<i>Campylobacter coli</i>	Pig feces	Digestive System Disease Research
<a href="#">700819DQ™</a>	<i>Campylobacter jejuni</i> subsp. <i>jejuni</i>	Human feces	Digestive System Disease Research
<a href="#">750DQ™</a>	<i>Candida tropicalis</i>	Patient with bronchomycosis	Digestive System Disease Research
<a href="#">66029DQ™</a>	<i>Candida tropicalis</i>		Digestive System Disease Research
<a href="#">8090DQ™</a>	<i>Citrobacter freundii</i>		Digestive System Disease Research
<a href="#">43598DQ™</a>	<i>Clostridioides difficile</i>	Human feces, asymptomatic neonate, Belgium	Digestive System Disease Research
<a href="#">BAA-1382DQ™</a>	<i>Clostridioides difficile</i>	Clinical isolate; Switzerland	Digestive System Disease Research
<a href="#">BAA-1870DQ™</a>	<i>Clostridioides difficile</i>		Digestive System Disease Research
<a href="#">13124DQ™</a>	<i>Clostridioides perfringens</i>	Clinical isolate, Switzerland	Digestive System Disease Research
<a href="#">PRA-67DQ™</a>	<i>Cryptosporidium parvum</i>	Animal feces; 2002	Digestive System Disease Research
<a href="#">30459DQ™</a>	<i>Entamoeba histolytica</i>	Colonic biopsy of rectal ulcer from adult human male with amebic dysentery; Mexico City, Mexico, 1967	Digestive System Disease Research
<a href="#">700802DQ™</a>	<i>Enterococcus faecalis</i>	Human blood, patient, St. Louis, Missouri, US, 1987	Digestive System Disease Research
<a href="#">700221DQ™</a>	<i>Enterococcus faecium</i>	Human feces, Connecticut	Digestive System Disease Research
<a href="#">8739DQ™</a>	<i>Escherichia coli</i>	Feces	Digestive System Disease Research
<a href="#">11229DQ™</a>	<i>Escherichia coli</i>		Digestive System Disease Research
<a href="#">10798DQ™</a>	<i>Escherichia coli</i>	Feces from diphtheria convalescent	Digestive System Disease Research
<a href="#">25922DQ™</a>	<i>Escherichia coli</i> O6	Clinical isolate	Digestive System Disease Research
<a href="#">43895DQ™</a>	<i>Escherichia coli</i> O157:H7	Raw hamburger meat implicated in a hemorrhagic <i>colitis</i> outbreak	Digestive System Disease Research
<a href="#">700926DQ™</a>	<i>Escherichia coli</i>	Derived from parent strain W1485 by acridine orange curing of the F plasmid	Digestive System Disease Research
<a href="#">700928DQ™</a>	<i>Escherichia coli</i>	Human clinical specimen, blood and urine from a women with acute pyelonephritis, Baltimore, Maryland	Digestive System Disease Research
<a href="#">BAA-2192DQ™</a>	<i>Escherichia coli</i> O145:Nonmotile	Human stool, South Dakota, USA	Digestive System Disease Research
<a href="#">BAA-2193DQ™</a>	<i>Escherichia coli</i> O45:H2	Stool, Maine	Digestive System Disease Research
<a href="#">BAA-2196DQ™</a>	<i>Escherichia coli</i> O26:H11	Stool, Michigan	Digestive System Disease Research
<a href="#">BAA-2215DQ™</a>	<i>Escherichia coli</i> O103:H11	Idaho	Digestive System Disease Research

**Table 2: Quantitative Genomic Nucleic Acids**

ATCC® No.	Organism	Source Information	Research Applications
<a href="#">BAA-2219DQ™</a>	<i>Escherichia coli</i> O121:H19	Human stool, Virginia	Digestive System Disease Research
<a href="#">BAA-2326DQ™</a>	<i>Escherichia coli</i> O104:H4	Stool sample from patient with hemolytic uremic syndrome, 2011	Digestive System Disease Research
<a href="#">BAA-2440DQ™</a>	<i>Escherichia coli</i> O111	Human	Digestive System Disease Research
<a href="#">29212DQ™</a>	<i>Enterococcus faecalis</i>	Urine	Digestive System Disease Research
<a href="#">27766DQ™</a>	<i>Faecalibacterium prausnitzii</i>	Human feces	Digestive System Disease Research
<a href="#">30888DQ™</a>	<i>Giardia intestinalis</i>	Human female, Portland, OR, 1971	Digestive System Disease Research
<a href="#">43504DQ™</a>	<i>Helicobacter pylori</i>	Gastric antrum	Digestive System Disease Research
<a href="#">700392DQ™</a>	<i>Helicobacter pylori</i>	Stomach of a human patient with gastritis; UK	Digestive System Disease Research
<a href="#">VR-930DQ™</a>	Human adenovirus 41	Feces from child with gastroenteritis, Netherlands, 1973	Digestive System Disease Research
<a href="#">VR-1775DQ™</a>	Human Enterovirus 71	Stool sample from 2-month-old male with aseptic meningitis	Digestive System Disease Research
<a href="#">VR-931DQ™</a>	Human mastadenovirus F	Feces, infantile gastroenteritis, Netherlands, 1979	Digestive System Disease Research
<a href="#">BAA-679DQ™</a>	<i>Listeria monocytogenes</i>	Tissue, animal - rabbit, Cambridge United Kingdom, 1924	Digestive System Disease Research
<a href="#">25830DQ™</a>	<i>Morganella morganii</i> subsp. <i>morganii</i>	Patient with summer diarrhea	Digestive System Disease Research
<a href="#">BAA-968D™</a>	<i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i>	Animal feces; Wisconsin, 1990	Digestive System Disease Research
<a href="#">VR-824DQ™</a>	Reovirus 3	Child with diarrhea	Digestive System Disease Research
<a href="#">VR-2018DQ™</a>	Rotavirus A	Diarrhea stool from patient positive for rotavirus	Digestive System Disease Research
<a href="#">13311DQ™</a>	<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Typhimurium	Feces, food poisoning	Digestive System Disease Research
<a href="#">700720DQ™</a>	<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Typhimurium	Wild type strain isolated from a natural source; 1948	Digestive System Disease Research
<a href="#">BAA-611DQ™</a>	<i>Streptococcus agalactiae</i>	Clinical specimen, Human	Digestive System Disease Research
<a href="#">PRA-310DQ™</a>	<i>Toxoplasma gondii</i>	Derived from in vivo RH strain ATCC 50174	Digestive System Disease Research
<a href="#">39315DQ™</a>	<i>Vibrio cholerae</i>	Stool from cholera patient, Bangladesh	Digestive System Disease Research
<a href="#">17978DQ™</a>	<i>Acinetobacter baumannii</i>	Fatal meningitis of a 4-month old infant	Epidermal Disease Research
<a href="#">10231DQ™</a>	<i>Candida albicans</i>	Man with bronchomycosis	Epidermal Disease Research
<a href="#">22019DQ™</a>	<i>Candida parapsilosis</i>	Case of sprue, Puerto Rico	Epidermal Disease Research
<a href="#">VR-1432DQ™</a>	Human enterovirus 71	Vesicular fluid from an adult female with hand, foot, and mouth disease, Wuhan, China.	Epidermal Disease Research
<a href="#">VR-1467DQ™</a>	Human herpesvirus 6B	Peripheral blood lymphocytes from a 36 year-old male AIDS patient, Zaire, Africa	Epidermal Disease Research
<a href="#">47085DQ™</a>	<i>Pseudomonas aeruginosa</i>		Epidermal Disease Research
<a href="#">9027DQ™</a>	<i>Pseudomonas aeruginosa</i>	Outer ear infection	Epidermal Disease Research
<a href="#">6538DQ™</a>	<i>Staphylococcus aureus</i>	Human lesion	Epidermal Disease Research
<a href="#">25923DQ™</a>	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	Clinical Isolate	Epidermal Disease Research
<a href="#">29213DQ™</a>	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	Wound	Epidermal Disease Research
<a href="#">43300DQ™</a>	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	Clinical isolate, Kansas	Epidermal Disease Research
<a href="#">700699DQ™</a>	<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
<a href="#">BAA-1556DQ™</a>	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	Wrist abscess, 36-year-old HIV+ man with history of IV drug use	Epidermal Disease Research
<a href="#">BAA-1717DQ™</a>	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	From adolescent patient with severe sepsis syndrome; Texas Children's Hospital	Epidermal Disease Research
<a href="#">BAA-1718DQ™</a>	<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	From a 12-year-old white female with a buttock abscess	Epidermal Disease Research
<a href="#">12228DQ™</a>	<i>Staphylococcus epidermidis</i>		Epidermal Disease Research
<a href="#">19615DQ™</a>	<i>Streptococcus pyogenes</i>	Pharynx of child following episode of sore throat.	Epidermal Disease Research
<a href="#">700294DQ™</a>	<i>Streptococcus pyogenes</i>	Infected wound	Epidermal Disease Research
<a href="#">10240DQ™</a>	<i>Micrococcus luteus</i>	Air	Microbiome Research

**Table 2: Quantitative Genomic Nucleic Acids**

ATCC® No.	Organism	Source Information	Research Applications
<a href="#">47011T1-DQ™</a>	<i>Escherichia coli</i> with ATCC 16S Tag 1		Metagenomics Research
<a href="#">BAA-2975T3-DQ™</a>	<i>Staphylococcus aureus</i> with ATCC 16S Tag 3		Metagenomics Research
<a href="#">3624T2-DQ™</a>	<i>Clostridium perfringens</i> with ATCC 16S Tag 2		Metagenomics Research
<a href="#">204508DQ™</a>	<i>Saccharomyces cerevisiae</i>	Wild type strain	Molecular Research
<a href="#">MYA-4941DQ™</a>	<i>Saccharomyces cerevisiae</i>	Parent strain used <i>Saccharomyces cerevisiae</i> BJ5465	Molecular Research
<a href="#">VR-1583DQ™</a>	JC polyomavirus	Brain tumor of owl monkey	Neural Research
<a href="#">MYA-646DQ™</a>	<i>Candida dubliniensis</i>	Oral cavity of HIV-infected patient, Dublin, Ireland	Oral Health Research
<a href="#">43037DQ™</a>	<i>Eubacterium nodatum</i>	Subgingival region of mouth	Oral Health Research
<a href="#">25586DQ™</a>	<i>Fusobacterium nucleatum</i> subsp. <i>nucleatum</i>	Cervico-facial lesion	Oral Health Research
<a href="#">43037DQ™</a>	<i>Tannerella forsythia</i>	Human periodontal pocket, Massachusetts, US	Oral Health Research
<a href="#">35405DQ™</a>	<i>Treponema denticola</i>	Human periodontal pocket, Montreal, Canada	Oral Health Research
<a href="#">9643DQ™</a>	<i>Aspergillus flavus</i>	Shoe sole, New Guinea	Opportunistic Pathogen Research
<a href="#">19146DQ™</a>	<i>Brevundimonas diminuta</i>	Contaminant in culture of <i>Bacillus cereus</i>	Opportunistic Pathogen Research
<a href="#">MYA-2876DQ™</a>	<i>Candida albicans</i>	Human clinical specimen	Opportunistic Pathogen Research
<a href="#">2001DQ™</a>	<i>Candida glabrata</i>	Feces	Opportunistic Pathogen Research
<a href="#">32196DQ™</a>	<i>Candida krusei</i>	Cabbage frass, Japan	Opportunistic Pathogen Research
<a href="#">34449DQ™</a>	<i>Candida lusitanae</i>	Pig, Portugal	Opportunistic Pathogen Research
<a href="#">13047DQ™</a>	<i>Enterobacter cloacae</i> subsp. <i>cloacae</i>	Spinal fluid	Opportunistic Pathogen Research
<a href="#">29905DQ™</a>	<i>Proteus vulgaris</i>		Opportunistic Pathogen Research
<a href="#">29914DQ™</a>	<i>Providencia stuartii</i>		Opportunistic Pathogen Research
<a href="#">15442DQ™</a>	<i>Pseudomonas aeruginosa</i>		Opportunistic Pathogen Research
<a href="#">27853DQ™</a>	<i>Pseudomonas aeruginosa</i>	Blood culture	Opportunistic Pathogen Research
<a href="#">BAA-2793DQ™</a>	<i>Pseudomonas aeruginosa</i>	Urine from a 26-year-old female, Chile, 2014	Opportunistic Pathogen Research
<a href="#">7830DQ™</a>	<i>Lactobacillus leichmannii</i>		Probiotic Research
<a href="#">8014DQ™</a>	<i>Lactobacillus plantarum</i>		Probiotic Research
<a href="#">6633DQ™</a>	<i>Bacillus spizizenii</i>		Quality Control
<a href="#">11437DQ™</a>	<i>Clostridium sporogenes</i>	Cotton plant	Quality Control
<a href="#">10541DQ™</a>	<i>Enterococcus hirae</i>		Quality Control
<a href="#">1022DQ™</a>	<i>Aspergillus fumigatus</i>	Lung of chicken, Connecticut	Respiratory Disease Research
<a href="#">20542DQ™</a>	<i>Aspergillus terreus</i>		Respiratory Disease Research
<a href="#">VR-1558DQ™</a>	Betacoronavirus 1	Man with cold-like illness	Respiratory Disease Research
<a href="#">4617DQ™</a>	<i>Bordetella bronchiseptica</i>		Respiratory Disease Research
<a href="#">51541DQ™</a>	<i>Bordetella holmesii</i>	Animal blood, Buffalo, New York, USA	Respiratory Disease Research
<a href="#">15311DQ™</a>	<i>Bordetella parapertussis</i>	Whooping cough	Respiratory Disease Research
<a href="#">9797DQ™</a>	<i>Bordetella pertussis</i>		Respiratory Disease Research
<a href="#">BAA-589DQ™</a>	<i>Bordetella pertussis</i>	Human clinical specimen	Respiratory Disease Research
<a href="#">25416DQ™</a>	<i>Burkholderia cepacia</i>	Plant-derived foodstuff - onion, <i>Allium cepa</i>	Respiratory Disease Research
<a href="#">53592DQ™</a>	<i>Chlamydophila pneumoniae</i>	Throat of student with acute pharyngitis, Seattle, WA, 1983	Respiratory Disease Research
<a href="#">VR-1360DQ™</a>	<i>Chlamydophila pneumoniae</i>	Sputum of pneumonia patient, Georgia	Respiratory Disease Research
<a href="#">VR-1826DQ™</a>	Enterovirus 68	Nasal-pharyngeal swab of hospitalized 10-month-old female with pneumonia, California, 1962	Respiratory Disease Research
<a href="#">51907DQ™</a>	<i>Haemophilus influenzae</i>		Respiratory Disease Research
<a href="#">VR-1DQ™</a>	Human adenovirus 1	Adenoid tissue from five-year-old child with hypertrophied tonsils and adenoids, Maryland, 1953	Respiratory Disease Research
<a href="#">VR-846DQ™</a>	Human adenovirus 2	Spontaneously degenerating tissue culture of adenoid tissue from 7-year-old girl with hypertrophied tonsils and adenoids,	Respiratory Disease Research
<a href="#">VR-3DQ™</a>	Human adenovirus 3	Nasal washings from an adult with a common cold, 1953, Maryland	Respiratory Disease Research

**Table 2: Quantitative Genomic Nucleic Acids**

ATCC® No.	Organism	Source Information	Research Applications
<a href="#">VR-1572DQ™</a>	Human adenovirus 4	Throat washings of patient, Fort Leonard Wood, Missouri, 1952-1953	Respiratory Disease Research
<a href="#">VR-7DQ™</a>	Human adenovirus 7	Throat washing from military recruit with pharyngitis, California, 1954	Respiratory Disease Research
<a href="#">VR-740DQ™</a>	Human coronavirus 229E	Nasal and throat swabs from man with upper respiratory illness	Respiratory Disease Research
<a href="#">VR-94DQ™</a>	Human parainfluenza virus 1	Throat swab of 3-year-old boy with acute laryngitis, 1957	Respiratory Disease Research
<a href="#">VR-93DQ™</a>	Human parainfluenza virus 3	One-year-old female with pneumonia, Washington, DC, 1957	Respiratory Disease Research
<a href="#">VR-26DQ™</a>	Human respiratory syncytial virus	17-month-old male with pneumonia, Maryland, 1956	Respiratory Disease Research
<a href="#">VR-955DQ™</a>	Human respiratory syncytial virus	Throat swab from 23-month-old girl with diffuse interstitial pneumonia, Massachusetts, 1977	Respiratory Disease Research
<a href="#">VR-1540DQ™</a>	Human respiratory syncytial virus	Lower respiratory tract of infant with bronchiolitis and bronchopneumonia, Melbourne, Australia, 1961	Respiratory Disease Research
<a href="#">VR-1580DQ™</a>	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
<a href="#">VR-1559DQ™</a>	Human rhinovirus 1A	Naso-pharyngeal washings from patient with mild respiratory illness, Ohio.	Respiratory Disease Research
<a href="#">VR-1645DQ™</a>	Human rhinovirus 1B	Presumed from human throat washings	Respiratory Disease Research
<a href="#">VR-482DQ™</a>	Human rhinovirus 2	Nasal washing from patient with cold	Respiratory Disease Research
<a href="#">VR-284DQ™</a>	Human rhinovirus 14	Throat swab from young adult with upper respiratory illness.	Respiratory Disease Research
<a href="#">VR-1663DQ™</a>	Human rhinovirus 17	Presumed from throat swab from adult with upper respiratory illness, North Carolina, 1959	Respiratory Disease Research
<a href="#">VR-1187DQ™</a>	Human rhinovirus 77		Respiratory Disease Research
<a href="#">VR-95DQ™</a>	Influenza A virus (H1N1)	Patient in Puerto Rico, 1934	Respiratory Disease Research
<a href="#">VR-1469DQ™</a>	Influenza A virus (H1N1)	Patient in Puerto Rico, 1934	Respiratory Disease Research
<a href="#">VR-1736DQ™</a>	Influenza A virus (H1N1)	Nasopharyngeal specimen from a patient positive for Flu A in Virginia, 2009	Respiratory Disease Research
<a href="#">VR-1884DQ™</a>	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
<a href="#">VR-1893DQ™</a>	Influenza A virus (H1N1)	Human in Florida, USA on October 31, 2006	Respiratory Disease Research
<a href="#">VR-1894DQ™</a>	Influenza A virus (H1N1)	Human in California, USA on April 9, 2009	Respiratory Disease Research
<a href="#">VR-1882DQ™</a>	Influenza A virus (H3N2)	Human in Wisconsin, USA, on June 7, 2009	Respiratory Disease Research
<a href="#">VR-101DQ™</a>	Influenza B virus	Patient in New York, 1940	Respiratory Disease Research
<a href="#">VR-823DQ™</a>	Influenza B virus	Not known	Respiratory Disease Research
<a href="#">VR-1804DQ™</a>	Influenza B virus	Human, Florida, 2006	Respiratory Disease Research
<a href="#">VR-1883DQ™</a>	Influenza B virus	Human in Wisconsin, USA on February 20, 2010.	Respiratory Disease Research
<a href="#">VR-1885DQ™</a>	Influenza B virus	Classical reassortant virus derived from B/Wisconsin/1/2010 (Yamagata Lineage) and B/Lee/1940	Respiratory Disease Research
<a href="#">13048DQ™</a>	<i>Klebsiella aerogenes</i>	Sputum	Respiratory Disease Research
<a href="#">BAA-1705DQ™</a>	<i>Klebsiella pneumoniae</i>	Urine from a 42-year-old human male; 2007 CAP Survey	Respiratory Disease Research
<a href="#">BAA-2782DQ™</a>	<i>Klebsiella pneumoniae</i>	Peritoneal fluid	Respiratory Disease Research
<a href="#">13883DQ™</a>	<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i>		Respiratory Disease Research
<a href="#">700721DQ™</a>	<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i>	Sputum from a 66 year-old man, 1994	Respiratory Disease Research
<a href="#">700603DQ™</a>	<i>Klebsiella quasipneumoniae</i>	Urine from a hospitalized patient, Virginia	Respiratory Disease Research
<a href="#">33152DQ™</a>	<i>Legionella pneumophila</i> subsp. <i>pneumophila</i>	Human lung	Respiratory Disease Research
<a href="#">25238DQ™</a>	<i>Moraxella catarrhalis</i>		Respiratory Disease Research
<a href="#">VR-106DQ™</a>	Mumps virus	Pooled saliva from patients, Massachusetts	Respiratory Disease Research
<a href="#">25420DQ™</a>	<i>Mycobacterium africanum</i>	Expectorate; senegalese with pulmonary TB	Respiratory Disease Research
<a href="#">35734D™</a>	<i>Mycobacterium bovis</i>	Bovine milk	Respiratory Disease Research



**Table 2: Quantitative Genomic Nucleic Acids**

ATCC® No.	Organism	Source Information	Research Applications
<a href="#">BAA-1052DQ™</a>	<i>Mycobacterium talmoniae</i>	Clinical human specimen, July 31, 2000	Respiratory Disease Research
<a href="#">19422DQ™</a>	<i>Mycobacterium microti</i>		Respiratory Disease Research
<a href="#">BAA-688DQ™</a>	<i>Mycobacterium pinnipedii</i>	Clinical animal specimen, Australia, 1986	Respiratory Disease Research
<a href="#">25177DQ™</a>	<i>Mycobacterium tuberculosis</i>		Respiratory Disease Research
<a href="#">25618DQ™</a>	<i>Mycobacterium tuberculosis</i>	Derived from existing strain; New York, 1934	Respiratory Disease Research
<a href="#">VR-907DQ™</a>	Sendai virus	Early history of this Helsinki laboratory strain is not clear	Respiratory Disease Research
<a href="#">700669DQ™</a>	<i>Streptococcus pneumoniae</i>	Hospital, Barcelona, Spain, 1984	Respiratory Disease Research
<a href="#">VR-5DQ™</a>	Human adenovirus 5	Spontaneously degenerating tissue culture of adenoid tissue from a 4-year-old girl with chronically infected tonsils	Respiratory Disease Research
<a href="#">VR-92DQ™</a>	Human parainfluenza virus 2	11-month-old female with acute laryngotracheobronchitis, Ohio, 1955	Respiratory Disease Research
<a href="#">VR-283DQ™</a>	Human rhinovirus 16	Throat swab from healthy 2-year-old female, Washington, DC, 1960	Respiratory Disease Research
<a href="#">29342DQ™</a>	<i>Mycoplasma pneumoniae</i>	Patient with pneumonia	Respiratory Disease Research
<a href="#">BAA-55DQ™</a>	<i>Atopobium vaginae</i>	Vaginal flora from a healthy woman, Sweden, 1998	Reproductive Health Research
<a href="#">VR-901BD™</a>	<i>Chlamydia trachomatis</i> LGV Serovar I	Lymph node from human with LGV	Reproductive Health Research
<a href="#">VR-903D™</a>	<i>Chlamydia trachomatis</i> LGV Serovar III	Lymph node from human with LGV	Reproductive Health Research
<a href="#">VR-902BD™</a>	<i>Chlamydia trachomatis</i> LGV Serovar II	Bubo from human with LGV	Reproductive Health Research
<a href="#">VR-885DQ™</a>	<i>Chlamydia trachomatis</i> Serovar D	Human cervix, asymptomatic	Reproductive Health Research
<a href="#">14019DQ™</a>	<i>Gardnerella vaginalis</i>	Vaginal secretions	Reproductive Health Research
<a href="#">49145DQ™</a>	<i>Gardnerella vaginalis</i>	Clinical isolate	Reproductive Health Research
<a href="#">33940DQ™</a>	<i>Haemophilus ducreyi</i>		Reproductive Health Research
<a href="#">VR-539DQ™</a>	Human Herpesvirus 1	Brain, human, encephalitis	Reproductive Health Research
<a href="#">VR-1493DQ™</a>	Human Herpesvirus 1	Lip lesion of human with cold sore	Reproductive Health Research
<a href="#">VR-540DQ™</a>	Human Herpesvirus 2	Brain of a 50 year old female with multiple sclerosis; Iceland	Reproductive Health Research
<a href="#">VR-734DQ™</a>	Human Herpesvirus 2	Human genital infection	Reproductive Health Research
<a href="#">33820DQ™</a>	<i>Lactobacillus crispatus</i>		Reproductive Health Research
<a href="#">33323DQ™</a>	<i>Lactobacillus gasseri</i>		Reproductive Health Research
<a href="#">55195DQ™</a>	<i>Lactobacillus iners</i>	Patient with bacterial vaginosis	Reproductive Health Research
<a href="#">25258DQ™</a>	<i>Lactobacillus jensenii</i>	Human vaginal discharge	Reproductive Health Research
<a href="#">35241DQ™</a>	<i>Mobiluncus curtisii</i>	Human vagina	Reproductive Health Research
<a href="#">5243DQ™</a>	<i>Mobiluncus mulieris</i>	Human vagina	Reproductive Health Research
<a href="#">3530DQ™</a>	<i>Mycoplasma genitalium</i>	Urethra of male with non-gonococcal urethritis	Reproductive Health Research
<a href="#">23114DQ™</a>	<i>Mycoplasma hominis</i>	Rectal swab	Reproductive Health Research
<a href="#">700825DQ™</a>	<i>Neisseria gonorrhoeae</i>	Male patient with disseminated gonococcal infection; 1983	Reproductive Health Research
<a href="#">29303DQ™</a>	<i>Prevotella bivia</i>	Endometrium	Reproductive Health Research
<a href="#">15305DQ™</a>	<i>Staphylococcus saprophyticus</i> subsp. <i>saprophyticus</i>	Urine	Reproductive Health Research
<a href="#">13813DQ™</a>	<i>Streptococcus agalactiae</i>		Reproductive Health Research
<a href="#">30001DQ™</a>	<i>Trichomonas vaginalis</i>	Vaginal exudate from human with acute vaginitis, 1956	Reproductive Health Research
<a href="#">PRA-302DQ™</a>	<i>Babesia duncani</i>	Human blood, Washington state, 1991	Vector-borne Disease Research
<a href="#">PRA-398DQ™</a>	<i>Babesia microti</i>	Blood, human babesiosis, Nantucket, MA, 1983	Vector-borne Disease Research
<a href="#">35210DQ™</a>	<i>Borrelia burgdorferi</i>	Tick, Ixodes dammini; New York	Vector-borne Disease Research
<a href="#">30012DQ™</a>	<i>Leishmania major</i>	Human, Teheran, Iran, 1949	Vector-borne Disease Research
<a href="#">PRA-405DQ™</a>	<i>Plasmodium falciparum</i>		Vector-borne Disease Research
<a href="#">30266DQ™</a>	<i>Trypanosoma cruzi</i>	Triatoma infestans, Chile, 1945	Vector-borne Disease Research
<a href="#">VR-1838DQ™</a>	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
<a href="#">VR-1843DQ™</a>	Zika virus	Human serum specimen, Puerto Rico, December 2015	Vector-borne Disease Research

**Table 2: Quantitative Genomic Nucleic Acids**

ATCC® No.	Organism	Source Information	Research Applications
<a href="#">15597-B1DQ™</a>	<i>Escherichia coli</i> bacteriophage MS2		Water Contamination
<a href="#">30174D™</a>	<i>Naegleria fowleri</i>	Human spinal fluid; Orlando, FL, 1968	Water Contamination

## CERTIFIED REFERENCE MATERIALS

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- 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
<a href="#">qCRM-15531D™</a>	<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
<a href="#">qCRM-17981D™</a>	<i>Mycoplasma hyorhinis</i>	Nasal cavity of pig
<a href="#">qCRM-19610D™</a>	<i>Mycoplasma gallisepticum</i>	Suspension of tracheal and airsac tissues of chickens with chronic respiratory disease
<a href="#">qCRM-19989D™</a>	<i>Mycoplasma fermentans</i>	Ulcerative balanitis
<a href="#">qCRM-23064D™</a>	<i>Mycoplasma salivarium</i>	Saliva
<a href="#">qCRM-23206D™</a>	<i>Acholeplasma laidlawii</i>	Sewage
<a href="#">qCRM-23714D™</a>	<i>Mycoplasma orale</i>	Oropharynx of child, Washington, DC
<a href="#">qCRM-23838D™</a>	<i>Mycoplasma arginine</i>	Mouse brain experimentally infected with scrapies
<a href="#">qCRM-25204D™</a>	<i>Mycoplasma synoviae</i>	Hock joint of chicken
<a href="#">qCRM-27545D™</a>	<i>Mycoplasma hominis</i>	Human blood culture







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