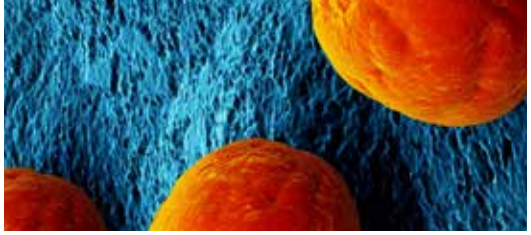
THE ESSENTIALS OF
LIFE SCIENCE RESEARCH
GLOBALLY DELIVERED™



ATCC®

PNEUMOCOCCAL POLYSACCHARIDES

Diseases caused by the bacterium *Streptococcus pneumoniae* are a major global health concern. Millions of people become infected with this pathogen each year, developing serious conditions such as pneumonia, meningitis, and otitis media. The severity of these pneumococcal diseases is primarily attributed to variations in the composition and structure of the capsular antigen.

To aid in the analysis and prevention of pneumococcal disease, ATCC offers 24 types of pneumococcal polysaccharides from various sources. They are the same serotypes found in current commercially available vaccines.

Each polysaccharide is extracted and purified separately making the products specific and useful as antigens in:

- Direct enzyme-linked immunosorbent assays (ELISA)
- Epidemiological studies
- *In vitro* immunological research

ATCC pneumococcal polysaccharides are available in three package sizes and new lots will be provided with a Certificate of Analysis that will include identity by NMR, residual protein, antigenicity, and molecular weight (exclusive for Pfizer products).

ATCC Pneumococcal Polysaccharides by USA and Danish Designations

Pneumococcal Type		Available Volumes (ATCC® No.)			Source	Product Status	Corresponding Strains (ATCC® No.)	PMEN Strains (ATCC® No.)
USA Designation[1]	Danish Designation[2]	2 mg	10 mg	200 mg				
1	1	15-X	161-X	164-X	Merck	Available	6301™ 9163™ 33400™	BAA-1666™ BAA-1654™ BAA-1655™
		10-X	12-X	13-X	Pfizer	Coming soon		
2	2	16-X	165-X	168-X	Merck	Available	6302™	
3	3	17-X	169-X	172-X	Merck	Available	6303™ 10813™	BAA-1657™
		31-X	32-X	33-X	Pfizer	Available		
4	4	18-X	173-X	176-X	Merck	Available	6304™ BAA-334™*	BAA-1664™
		34-X	35-X	36-X	Pfizer	Available		
5	5	57-X	177-X	180-X	Merck	Available	6305™	BAA-341™
		37-X	38-X	41-X	Pfizer	Available		
6	6A	14-X	271-X	280-X	Pfizer	Available	6306™	BAA-659™ BAA-1667™
8	8	20-X	185-X	188-X	Merck	Available	6308™	BAA-1659™
9	9N	21-X	189-X	192-X	Merck	Available	6309™	
12	12F	22-X	193-X	196-X	Merck	Available	6312™	BAA-1660™
14	14	23-X	197-X	200-X	Merck	Available	6314™ 700672™	BAA-340™ BAA-1661™ BAA-1658™ 700677™ 700676™ 700902™
		73-X	74-X	81-X	Pfizer	Available		
17	17F	63-X	201-X	204-X	Merck	Available	6317™	
19	19F	24-X	205-X	208-X	Merck	Available	6319™ 49619™	BAA-657™ 700905™*
		84-X	99-X	101-X	Pfizer	Available		
20	20	65-X	209-X	212-X	Merck	Available	6320™	
22	22F	66-X	213-X	216-X	Merck	Available	6322™	
23	23F	25-X	217-X	220-X	Merck	Available	6323™	51916™ BAA-343™ 700906™ 700669™* BAA-662™
		102-X	103-X	104-X	Pfizer	Available		

1. United States designations chronologically indicate the antigens in order of recognition. 2. The Danish designation uses an alphanumeric system to indicate any known cross-reactivity. The number refers to the sero-capsular antigen group, and the letter represents related serotypes that cannot be distinguished. * Bacterial genome is fully sequenced

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USA Designation[1]	Danish Designation[2]	2 mg	10 mg	200 mg				
26	6B	58-X	225-X	228-X	Merck	Available	6326™ BAA-612™	BAA-658™ 700670™ BAA-342™ 700675™ 700903™
		105-X	106-X	107-X	Pfizer	Coming soon		
34	10A	60-X	229-X	232-X	Merck	Available	8334™	
43	11A	61-X	233-X	236-X	Merck	Available	10343™	
51	7F	27-X	237-X	240-X	Merck	Available	10351™	BAA-1665™
		108-X	281-X	284-X	Pfizer	Available		
54	15B	62-X	241-X	244-X	Merck	Available	10354™	BAA-1663™
56	18C	28-X	245-X	248-X	Merck	Available	10356™	BAA-1662™
		285-X	288-X	289-X	Pfizer	Available		
57	19A	64-X	249-X	252-X	Merck	Available	10357™ BAA-475™	700674™ 700673™* 700678™ 700904™
		301-X	302-X	304-X	Pfizer	Coming soon		
68	9V	59-X	253-X	256-X	Merck	Available	10368™	700671™
		305-X	325-X	331-X	Pfizer	Available		
70	33F	67-X	257-X	260-X	Merck	Available	10370™	

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PNEUMOCOCCAL DISEASE

Streptococcus pneumoniae (often called pneumococcus) can infect multiple regions of the body, especially the lungs where it causes pneumonia. More than 1 million children die every year of pneumococcal diseases, primarily in developing countries and from pneumonia. Nasopharyngeal carriage of pneumococcal serotypes is an important aspect of the severity and progression of disease.

There appears to be a relationship between the composition and structure of a pneumococcal strain's capsule and the success of the serotype to become established during nasopharyngeal carriage.[1] Capsular types with higher ratios of charge to carbon may be physically larger making them more resistant to neutrophil clearance. More prevalent pneumococcal serotypes tend to be heavily encapsulated hindering clearance. A solid association has been found between increased carriage and resistance to non-opsonic, neutrophil-mediated killing of specific pneumococcal serotypes. Some serotypes have been associated with specific pneumococcal disease syndromes, others with higher hospitalization rates in children, or mortality in adults.

1. Hausdorff, WP, et al. Lancet Infect. Dis. 5(2): 82-93, 2005.

ADDITIONAL RESOURCES FOR PNEUMOCOCCAL POLYSACCHARIDE RESEARCH

The **Pneumococcal Molecular Epidemiology Network (PMEN)** provides detailed information on strains listed in the preceding table, including typing by Pulsed-field gel electrophoresis (PFGE), multilocus sequencing, and PBP fingerprinting. Data for strains analyzed by PMEN are available online at www.sph.emory.edu/PMEN.

The **NIST Chemistry WebBook** contains IR, mass, electronic/vibrational, and UV/VIS spectra as well as constants of diatomic molecules (spectroscopic data) and ion energetics data drawn from various evaluated sources. The WebBook is available online at www.webbook.nist.gov/chemistry.

The **Spectral Database System (SDBS)**, managed by the National Institute of Materials and Chemical Research in Japan, contains IR, 1H-NMR, 13C-NMR, mass, and ESR spectra of organics. The SDBS is available online at www.sdbs.riodb.aist.go.jp/sdbs/cgi-bin/direct_frame_top.cgi.

The **RCSB Protein Data Bank (PDB)** provides structural analysis and sequence data for *Streptococcus pneumoniae* proteins, including those related to ATCC® BAA-255™ (non-virulent) and ATCC® BAA-334™ (capsular serotype 4) fully genome sequenced strains. PDB is available online at www.rcsb.org/pdb.

See our online catalog at **www.atcc.org/polysaccharides** for a full description of each item.

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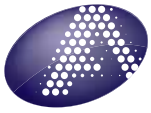

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