

PRODUCT SPOTLIGHT

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. Currently, it is estimated that pneumococcal diseases result in the death of more than one-million children under five years of age every year, primarily in developing countries. 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 31 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.

Table 1: ATCC Pneumococcal Polysaccharides by USA and Danish Designations

Pneumococcal Type		Available Volumes (ATCC® No.)			Corresponding Strains (ATCC® No.)	PMEN Strains (ATCC® No.)
USA Designation ¹	Danish Designation ²	2 mg	10 mg	200mg		
1	1	<u>10-X</u> TM	<u>12-X</u> TM	<u>13-X</u> TM	6301 TM , 9163 TM , 33400 TM	BAA-1666 TM , BAA-1654 TM , BAA-1655 TM
2	2	<u>500-X</u> TM	<u>501-X</u> TM	<u>502-X</u> TM	6302 TM	
3	3	<u>31-X</u> TM	<u>32-X</u> TM	<u>33-X</u> TM	6303 TM , 10813 TM	BAA-1657 TM
4	4	<u>34-X</u> TM	<u>35-X</u> TM	<u>36-X</u> TM	6304 TM , BAA-334 TM *	BAA-1664 TM
5	5	<u>37-X</u> TM	<u>38-X</u> TM	<u>41-X</u> TM	6305 TM	BAA-341 TM
6	6A	<u>14-X</u> TM	<u>271-X</u> TM	<u>280-X</u> TM	6306 TM	BAA-659 TM , BAA-1667 TM
8	8	<u>503-X</u> TM	<u>504-X</u> TM	<u>505-X</u> TM	6308 TM	BAA-1659 TM
9	9N	<u>506-X</u> TM	<u>507-X</u> TM	<u>508-X</u> TM	6309 TM , BAA-2298 TM	
12	12F	<u>515-X</u> TM	<u>516-X</u> TM	<u>517-X</u> TM	6312 TM	BAA-1660 TM
14	14	<u>73-X</u> TM	<u>74-X</u> TM	<u>81-X</u> TM	6314 TM , 700672 TM	BAA-340 TM , BAA-1661 TM , BAA-1658 TM , 700677 TM , 700676 TM , 700902 TM
17	17F	<u>521-X</u> TM	<u>522-X</u> TM	<u>523-X</u> TM	6317 TM	

¹United States designations chronologically indicate the antigens in order of recognition. ²The 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	200mg		
19	19F	<u>84-X</u> TM	<u>99-X</u> TM	<u>101-X</u> TM	<u>6319</u> TM , <u>49619</u> TM	<u>BAA-657</u> TM , <u>700905</u> ^{TM*}
20	20	<u>524-X</u>	<u>525-X</u>	<u>526-X</u>		
22	22F	<u>527-X</u> TM	<u>528-X</u> TM	<u>529-X</u> TM	<u>6322</u> TM	
23	23F	<u>102-X</u> TM	<u>103-X</u> TM	<u>104-X</u> TM	<u>6323</u> TM , <u>51938</u> TM	<u>51916</u> TM , <u>BAA-343</u> TM , <u>700906</u> TM , <u>700669</u> ^{TM*}
24	24F	<u>551-X</u> TM	<u>552-X</u> TM	<u>553-X</u> TM	<u>6324</u> TM	
25	25F	<u>530-X</u> TM	<u>531-X</u> TM	<u>532-X</u> TM	<u>6325</u> TM	
26	6B	<u>105-X</u> TM	<u>106-X</u> TM	<u>107-X</u> TM	<u>6326</u> TM , <u>BAA-612</u> TM , <u>51937</u> TM	<u>BAA-658</u> TM , <u>700670</u> TM , <u>BAA-342</u> TM , <u>700675</u> TM , <u>700903</u> TM
30	15A	<u>536-X</u> TM	<u>537-X</u> TM	<u>538-X</u> TM	<u>BAA-661</u> TM	
34	10A	<u>509-X</u> TM	<u>510-X</u> TM	<u>511-X</u> TM	<u>8334</u> TM , <u>BAA-2307</u> TM , <u>BAA-2299</u> TM	
43	11A	<u>512-X</u> TM	<u>513-X</u> TM	<u>514-X</u> TM	<u>10343</u> TM	
46	23A	<u>545-X</u> TM	<u>546-X</u> TM	<u>547-X</u> TM	<u>10346</u> TM	
51	7F	<u>108-X</u> TM	<u>281-X</u> TM	<u>284-X</u> TM	<u>10351</u> TM	<u>BAA-1665</u> TM
54	15B	<u>518-X</u> TM	<u>519-X</u> TM	<u>520-X</u> TM	<u>10354</u> TM	<u>BAA-1663</u> TM
56	18C	<u>285-X</u> TM	<u>288-X</u> TM	<u>289-X</u> TM	<u>10356</u> TM	<u>BAA-1662</u> TM
57	19A	<u>301-X</u> TM	<u>302-X</u> TM	<u>304-X</u> TM	<u>10357</u> TM , <u>BAA-475</u> TM	<u>700674</u> TM , <u>700673</u> ^{TM*} , <u>700678</u> TM , <u>700904</u> TM
64	23B	<u>548-X</u> TM	<u>549-X</u> TM	<u>550-X</u> TM	<u>10364</u> TM	
66	35B	<u>539-X</u> TM	<u>540-X</u> TM	<u>541-X</u> TM	<u>10366</u> TM , <u>BAA-660</u> TM	
68	9V	<u>305-X</u> TM	<u>325-X</u> TM	<u>331-X</u> TM	<u>10368</u> TM	<u>700671</u> TM
70	33F	<u>533-X</u> TM	<u>534-X</u> TM	<u>535-X</u> TM	<u>10370</u> TM , <u>BAA-2305</u> TM	
71	38	<u>542-X</u> TM	<u>543-X</u> TM	<u>544-X</u> TM	<u>10371</u> TM	

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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.

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