Product Information

Pertussis toxin
from Bordetella pertussis

Catalog Number P7208
Storage Temperature 2–8 °C

CAS RN 70323-44-3
Synonyms: Islet Activating Protein, Pertussigen,
Leukocytosis-Promoting Factor, Lymphocytosis
Promoting Factor, Histamine-Sensitizing Factor,
Pertussis Exotoxin, PTX, and PT

Product Description
Pertussis toxin is a protein isolated from the Gram-
negative coccobacillus, Bordetella pertussis. The toxin
is released in an inactive form. When the pertussis toxin
B oligomer binds to the cell membrane, the S1 subunit
of its A protomer becomes activated, perhaps through
the action of glutathione and ATP.

Pertussis toxin causes potentiation of insulin secretion
from mammalian pancreatic islets,1,2 catalyzes the
ADP-ribosylation of the protein present in cell
membrane preparations from human red blood cells,3
promotion of leukocytosis activity and agglutination
activity,4 promotion of lipolysis on adipocytes,5 inhibition
of epinephrine induced hyperglycemia,6 inhibition of
histamine release.7 Pertussin toxin adjuvant activity is
associated with enhanced cytokine production.8

Molecular mass:9 –117 kDa (ultracentrifugation)
Pertussis toxin consists of 5 subunits combined in a
1:1:1:2:1 ratio, with the following molecular masses:10

\[
\begin{align*}
S1 &= 26,017 \text{ Da} \\
S2 &= 21,839 \text{ Da} \\
S3 &= 21,751 \text{ Da} \\
S4 &= 12,061 \text{ Da} \\
S5 &= 11,747 \text{ Da}
\end{align*}
\]

This product is supplied as a lyophilized powder. When
reconstituted with 500 µl of water each vial will contain
0.05 M sodium phosphate, pH 7.2, with 0.5 M sodium
chloride.

This preparation migrates as five distinct bands, as
described in the literature,9 when run on polyacrylamide
SDS-urea gels.

Precautions and Disclaimer
This product is for R&D use only, not for drug,
household, or other uses. Please consult the Material
Safety Data Sheet for information regarding hazards
and safe handling practices. Pertussis toxin is a potent
neurotoxin, considered a biohazard, and should be
handled with care.

Preparation Instructions
This pertussis toxin product has not been preactivated
with ATP. Preincubate pertussis toxin in the presence
of 1–5 mM ATP and 1–5 mM DTT for in vitro use with
cell membranes. Preincubation with ATP and DTT is
not recommended for use with intact cells or in vivo
use.11,12

Storage/Stability
After reconstitution of the lyophilized powder with water,
bovine serum albumin at a concentration of 1–5 mg/ml
may be added as a stabilizer. The resulting suspension
should be made uniform by gentle mixing prior to use.
DO NOT STERILIZE BY FILTRATION, as this will
result in loss of material. DO NOT FREEZE!!! Under
sterile conditions this solution remains active for at least
6 months at 4 °C. Solutions at pH 7.0, were reported to
remain active up to 50 °C for 15 minutes.13

References
1. Sumi, T. and Michio, U., Endocrinology, 97, 352
   (1975).
3. Sekura, R.D. et al., J. Biol. Chem., 258, 14647-
   14651 (1983).
   765 (1976).
   (1999).