Diphtheria Antitoxin (equine)

Revision Date: June 30, 2023

Rationale for Update

- Updated to include information about storage and returning product that is unused.

CAUTION: Two Diphtheria Antitoxin products are currently supplied in Alberta, each with different dosing and scheduling recommendations. Providers will receive the product that is readily available in their zone, and will need to refer to the corresponding dosing and scheduling recommendations below.

<table>
<tr><td colspan="3">Please consult the Product Leaflet[1,2] (enclosed with antitoxin) for further information about this product.</td></tr>
<tr><td></td><td colspan="2">Diphtheria Antitoxin (equine)</td></tr>
<tr><td>Manufacturer</td><td>Butantan Institute, Brazil</td><td>VINS Bioproducts Limited, India</td></tr>
<tr><td>Authorization and access</td><td colspan="2">Special authorization and access procedures must be followed.
• The Office of the Chief Medical Officer of Health (OCMOH) must be notified by the fastest means possible of all cases in which diphtheria antitoxin is required.
• Available on a 24-hour basis from Alberta Health by calling OCMOH pager: 780-638-3630. A Special Access Program (SAP) Form is included with the product and must be completed and returned to Alberta Health.
Note: Diphtheria Antitoxin (equine) is stocked in the Provincial Vaccine Depot.</td></tr>
<tr><td>Indications for use of diphtheria antitoxin serum</td><td colspan="2">Treatment of suspected (based on clinical symptoms) or confirmed disease. Bacteriologic confirmation is not required to initiate treatment.[1,2]
Note: Not recommended for prophylaxis of close, immunized or unimmunized contacts of diphtheria cases.[3]
For further information about the disease and reporting requirements refer to: Public Health Notifiable Disease Management Guidelines – Diphtheria.[4]</td></tr>
<tr><td rowspan="3">Dose</td><td colspan="2">The therapeutic dose is determined by the severity of the disease.[1,2]
Follow the dosage as outlined on the Product Leaflet.
This is a treatment product administered under the direction of a physician in an acute care setting.</td></tr>
<tr><td>Butantan Institute, Brazil</td><td>VINS Bioproducts Limited, India</td></tr>
<tr><td>Note: Diphtheria antitoxin is supplied in 10 mL vials containing 10,000 IU per vial. For example the product leaflet recommends 40,000 IU for mild cases and up to a maximum of 100,000 IU for severe cases.[1]</td><td>Note: Diphtheria antitoxin is supplied in 10 mL vials containing 10,000 IU per vial. For example the product leaflet recommends 10,000 – 30,000 IU for mild to moderately severe cases and up to a maximum of 100,000 I U for severe cases.[2]</td></tr>
<tr><td>Route</td><td colspan="2">Refer to the Product Leaflet (enclosed with antitoxin).</td></tr>
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<tr><td>Schedule</td><td colspan="2">Diphtheria antitoxin serum should be administered as soon as possible after clinical diagnosis. Treatment should not await laboratory confirmation of toxigenic C. diphtheriae.</td></tr>
<tr><td></td><td>Butantan Institute, Brazil</td><td>VINS Bioproducts Limited, India</td></tr>
<tr><td></td><td>❖ Skin testing for serum hypersensitivity is recommended before diphtheria antitoxin is administered.[3,5]
• Note: This recommendation differs from the Product Leaflet.
• For hypersensitivity testing and desensitization procedures only, refer to US CDC Use of DAT for Suspected Diphtheria Cases – Protocol, specifically sections 6.3 & 6.4, including Tables 3 & 4.[6]</td><td>❖ Skin testing for serum hypersensitivity is recommended before diphtheria antitoxin is administered.[2,3]
See the Product Leaflet for details.</td></tr>
<tr><td></td><td colspan="2">See also the product information and Appendix 1 and 2 of Public Health Notifiable Disease Management Guidelines – Diphtheria.[4]
Note: Individuals who have recovered from diphtheria should receive the age-appropriate diphtheria-containing vaccine. The vaccine should be administered three to four weeks after diphtheria antitoxin was administered to minimize antigen-antibody antagonism.[5] Diphtheria infection does not necessarily confer immunity.[3,7]</td></tr>
<tr><td>Pregnancy</td><td colspan="2">Pregnancy is not a contraindication to the use of diphtheria antitoxin serum.[2] Intact IgG crosses the placenta from maternal circulation increasingly after 30 weeks.[5]</td></tr>
<tr><td>Lactation</td><td colspan="2">Breastfeeding is not a contraindication to diphtheria antitoxin serum. It is not known if antitoxin antibodies are excreted into breast milk.[5]</td></tr>
<tr><td>Storage</td><td colspan="2">The product must be maintained in strict monitored cold chain until ready for use.
If after receiving the product, a clinician determines that it is not required, the unused product must be shipped back to the Provincial Vaccine Depot, preferably under cold chain with at least twice daily documented storage temperatures. See the shipment package for further details.</td></tr>
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References

[1] Butantan Institute. (2019). Diphtheria Antitoxin (DAT). *Product Leaflet*.

[2] VINS BIOPRODUCTS Limited. Diphtheria Antitoxin I.P./B.P. *Product Leaflet*.

[3] National Advisory Committee on Immunization. (2023). *Canadian Immunization Guide* (Evergreen ed.). Ottawa, ON: Public Health Agency of Canada. www.canada.ca/en/public-health/services/canadian-immunization-guide.html.

[4] Alberta Health. Diphtheria. In *Public Health Notifiable Disease Management Guidelines*. www.alberta.ca/notifiable-disease-guidelines.aspx.

[5] Grabenstein, J. D. (2012). *ImmunoFacts: Vaccines and Immunologic Drugs - 2013*. St. Louis, MO: Wolters Kluwer Health.

[6] Centre for Disease Control and Prevention Protocol. (2022, June 9). *Expanded Access Investigational New Drug (IND) Application Protocol: Use of Diphtheria Antitoxin (DAT) for Possible Diphtheria Cases.* https://www.cdc.gov/diphtheria/downloads/protocol.pdf

[7] American Academy of Pediatrics. (2021). *Red Book: 2021-2024 Report of the Committee on Infectious Diseases* (32nd ed.). Itasca, IL: Author.

