

## Non-Immunogenic Components of Vaccines

### Adjuvants:

- Any substance added to a vaccine to enhance the immune response by degree or duration. Adjuvants allow for a reduction in the amount of antigen per dose or the total number of doses needed to achieve immunity. They can also improve the immune response in individuals who are immunocompromised.
- Most adjuvants used in vaccines in Canada are aluminum salts (e.g., aluminum hydroxide, aluminum phosphate, or amorphous aluminum hydroxyphosphate sulfate). Vaccines containing aluminum adjuvants include INFANRIX hexa®, PEDIACEL®, PREVNAR® 13, and ADACEL®.
- Since 2009, vaccines containing newer adjuvants have become available in Canada. These include: ASO3 (AREPANRIX™), ASO4 (CERVARIX®), ASO1<sub>B</sub> (SHINGRIX®) and MF59 (FLUAD®).

### Preservatives:

- Chemicals added to vaccines to prevent serious infections as a result of bacterial or fungal contamination of the vaccine (e.g., thimerosal which is present in only some influenza vaccines; 2-phenoxyethanol in PEDIACEL®).

### Antibiotics: <sup>A</sup>

- Prevent bacterial contamination during viral cell culture (e.g., neomycin in MMR® II; polymyxin B in INFANRIX hexa®).

### Egg or yeast proteins, serum, and amino acids: <sup>A</sup>

- Needed for the growth of viruses and the production of viral antigens.

### Formaldehyde: <sup>A</sup>

- Used to inactivate viruses and protein toxins (e.g., in tetanus, diphtheria, pertussis and polio vaccines). The amount of formaldehyde remaining in a vaccine after the completion of the manufacturing process is less than that found naturally (continually present in the blood, or turned over in a day) in the human body.

### Stabilizers:

- Help protect the vaccine during the manufacturing process i.e., to control acidity (pH); stabilize antigens; and prevent antigens from sticking to the sides of glass vials (e.g., polysorbate 20 and 80, potassium or sodium salts, lactose, human serum albumin, and animal proteins such as gelatin and bovine serum albumin).

For more information regarding the components present in specific vaccines refer to [Part 4 – Biological Products](#) and [Immunogenic Components of Selected Vaccines](#).

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<sup>A</sup> Most of these reagents are removed during the manufacturing process but minute amounts may remain in the final product.