Notification and Assessment under the *Canadian Environmental Protection Act, 1999* of PROSTVAC-V, F and TBC-FPV **(Q&A summary)**

What is it?

- PROSTVAC-V and PROSTVAC-F are live viral recombinant vaccines which were genetically modified by inserting four human genes associated with activation of immune responses against prostate cancer in two viruses *(Vaccinia* and *Fowlpox).*
- TBC-FPV is a live *Fowlpox virus* vector used in the generation of PROSTVAC-F. Unmodified viruses, from which PROSTVAC-V, F and TBC-FPV are derived, are already naturally-occurring in the Canadian environment.

How is it used?

- PROSTVAC-V, PROSTVAC-F and TBC-FPV were developed for use in Phase 3 clinical trials to treat a form of prostate cancer.
- PROSTVAC-V/F vaccinations have been used in Phase 1 and 2 clinical trials in patients with prostate cancer and no toxicity or negative health effects were observed.

Why did the Government of Canada assess it?

- A micro-organism produced through the application of science and engineering that is not listed on the *Domestic Substances List* (DSL) and that is not subject to federal legislation listed in Schedule 4 of the *Canadian Environmental Protection Act* (CEPA 1999), is considered "new". Before it is manufactured in or imported into Canada, the Government of Canada must assess its potential to harm human health and the environment under the *New Substances Notifications Regulations (Organisms)*, as required by Section 106 of the *Canadian Environmental Protection Act, 1999* (CEPA 1999). PROSTVAC-V, PROSTVAC-F and TBC-FPV are not on the DSL.
- The Government of Canada conducted an assessment of PROSTVAC-V, PROSTVAC-F and TBC-FPV because BN-ImmunoTherapeutics, a pharmaceutical company, submitted a notification of its intention to import these products containing these new micro-organisms into Canada for use in a Phase 3 Trial for treatment of a form of prostate cancer.
- This assessment was conducted under the *New Substances Notifications Regulations (Organisms)*, as required by Section 106 of the *Canadian Environmental Protection Act, 1999* (CEPA 1999).

How is it released to the environment?

- PROSTVAC-V, PROSTVAC-F and TBC-FPV may be introduced into the environment through releases from immunized patients, disposal of unused portions of the vaccine and contact with contaminated material. Nevertheless, widespread environmental releases are not expected because: i) manufacture of the vaccines will occur outside of Canada and will be contained during transportation and storage; ii) all material in contact with the vaccines will be disposed of as infectious medical waste; iii) patients are vaccinated in a clinical site under

controlled conditions and iv) all staff have adequate training that will ensure the containment of the vaccine at every stage of the study.

How are Canadians exposed to it?

- Based on the intended use, the general population in Canada is not expected to be exposed to any significant levels of PROSTVAC-V, PROSTVAC-F and TBC-FPV in the environment.

What are the results of the assessment?

- The Government of Canada has conducted a science-based risk assessment of PROSTVAC-V, PROSTVAC-F and TBC-FPV.
- Risk assessments address potential for harm to the general population in Canada (not including workplace exposures) and the environment.
- *Vaccinia* virus is capable of causing a temporary infection in humans, mainly in susceptible populations. No adverse effects were observed in non-human species including mammals.
- *Fowlpox* virus is mainly known to infect birds such as chickens, turkeys and pigeons but is incapable of replicating or surviving in the human body.
- The live viral vaccines are not manufactured in Canada. They are imported for phase 3 clinical trials and confinement measures are in place to prevent the unintentional spread of PROSTVAC-V, PROSTVAC-F and TBC-FPV from the clinical trial sites.
- PROSTVAC-V, PROSTVAC-F and TBC-FPV are therefore not considered to be harmful to human health or the environment for the intended use, and the Government of Canada has concluded that they are not entering the environment in a quantity or under conditions that constitute a danger to the environment or humans.

What is the Government of Canada doing?

- Although exposure of the general Canadian population and of the Canadian environment to PROSTVAC-V, PROSTVAC-F and TBC-FPV is limited, the Government of Canada acted to ensure that the identified potential risks are reassessed if exposure increases.
- Therefore, the Government of Canada published *Significant New Activity (SNAc)* Notices in the Canada Gazette on November 3, 2012 (SNAC # 666, 667 and 668), which requires that any activity with PROSTVAC-V, PROSTVAC-F and TBC-FPV outside of those described in the assessment be notified to the Government so that the new activity can be reassessed.