

## **Seabuckthorn Leaf Extract**

Defence Institute of Physiology Allied Sciences, DRDO, India, has prepared a herbal extract possessing a novel immunopotentiating activity. The whole extract from leaves of Seabuckthorn (SBT), is prepared after collection of young and green leaves from hilly regions of western Himalayas, India, during autumn (Ethanobotanical ID: 058/FRL/2002).

The SBT leaf extract has tremendous immunopotentiating activity, where it significantly consistently enhances the safe, stable and efficacious antigen specific response when mixed with minimum amount of antigen and reduced boosters with a long term antibody sustenance. The SBT leaf extract is found to be consistently superior to alternative immunopotentiators when judged collectively by bio-active qualities, manufacturability, syringeability, stability, safety and by immunopotency criteria. This leaf extract has "point-of-use" by simple physical mixing procedure to generate an emulsion that is stable and homogenous, with a reproducible size distribution. SBT leaf extract produced in different batches is stable at 2-8°C for atleast three years. The shelf life in the extract form and as formulation with antigens at 4°C is quite reasonable.

The herbal extract developed by DIPAS is safe, effective and comparable with commercially available immunopotentiators.

The technology is also compatible with the cause of Green Technologies, and is expected to be contributory to a reduction of the global Carbon Footprint.

Four Indian patents have been filed.

### **Benefits of SBT Leaf Extract**

- COMPLETELY HERBAL IN NATURE. Low Cost and easy availability.
- Safely enhances total antibody response in different strains & species using different immunization routes & schedules. Modulates Th1 and Th2 immune response and IL-4 and IFN-gamma cytokines thus useful for both bacterial as well as viral infections. Long term sustenance of antibodies (> 4 months). Absence of haemolytic activity. Reduced number of boosters and antigen requirement. Compatible with different types of antigens.
- Non-immunogenic by itself with no batch variation.
- The technology is also compatible with the cause of Green Technologies, and is expected to be contributory to a reduction of the global Carbon Footprint.

### **Applications of SBT Leaf Extract**

- Enhancing immune response with different types of antigens for various diseases.
- Can be used in animals for raising anti-sera for diagnostic use.
- Production of Monoclonal antibodies.
- Veterinary and Human use.