



**AGRO-BIO**  
The Proteomic &  
Immune Response

ISO 9001:2008

BUREAU VERITAS  
Certification



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# Freeze-drying

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EN

Freeze-drying is a method of desiccation vacuum and low-temperature of liquid products beforehand frozen by sublimation\*.

This method of soft desiccation consists in eliminating the water of products by sublimation\*, without altering their fundamental properties. This process allows to sublimate the water while the ions and the not volatile molecules will stay in the form of powder. These last ones can be stored under long-term solid shape or resolubilized in a lower volume.

Lyophilization products enable storage, for long periods, thanks to the lowering of the water activity of the product and thus allows to obtain final products of high quality. The change of state of the product from a frozen state to a dehydrated state, in the absence of a high proportion of liquid water, reduces the possibilities of development of deterioration reactions.

\* Sublimation = the change of state of a substance from a solid to a gas without first becoming liquid.

|                            |   |
|----------------------------|---|
| <b>Application:</b>        | Storage of proteic molecules.   |
| <b>Advantages:</b>         | <ul style="list-style-type: none"> <li>- Long term storage at 2-8°C instead of -20°C,</li> <li>- Reduced storage costs by a weight and volume gain,</li> <li>- Concentration of the active ingredients,</li> <li>- No loss of protein and other components,</li> <li>- Capacity of the product freeze-dried to rehydrate instantly,</li> <li>- Purification of the products by destroying most bacteria.</li> </ul> |
| <b>Proposed packaging:</b> | <ul style="list-style-type: none"> <li>- 4 mL vials containing 0.5 mL to 1mL of product,</li> <li>- 6 mL vials containing 1 mL to 2 mL of product,</li> <li>- 15 mL vials containing 2 mL to 5 mL of product.</li> </ul>  |

**Lyophilization is useful in many areas where the active ingredients with high added value must be kept under optimum conditions.**

Within two weeks following the dispatch of your order you will receive a provisional timetable listing the various stages of your service.

**If you wish more information about Freeze-drying, do not hesitate to contact our Sales representatives.**

Not included in our service:

- Postal charges for shipping of material remainder if need.

Cf. General terms of sale

