Freund's Adjuvants

Product Description

The most popular adjuvant for animal immunizations

Catalog #: 356155, 6x10ml
Name: Freunds Complete Adjuvant (FCA)
Water-in-oil emulsion and killed Mycobacterium

Catalog #: 314335, 6x10ml
Name: Freunds Incomplete Adjuvant (FIA)
Water-in-oil emulsion

Introduction
Adjuvants are non-specific stimulators of the immune response. When mixed with an antigen, they help to deposit or sequester the injected material. In addition, they cause a dramatic increase in the resultant antibody response.

Directions for Use

Protocol 1:
FCA and AFI should be kept at room temperature before use. Wear gloves.
FCA is used for initial injections of antigen into animals to enhance the immune response.
FIA is used for further boosts.

Mix equal volumes of immunogen and Freund's adjuvant.
- Final immunogen concentrations of 20-50 µg/100 µl are generally be sufficient to immunize mice, and rats, up 100µg in rabbits and up 0.5-1mg in goats. However, considerable variations of immunogenicity may be observed, and quite different quantity could be found in the literature.
- The quality of mixing is important for favoring reproducible immunization in an animal, between animals, and for each immunization. The principal difficulties result from difference in viscosity/density between the sample and the adjuvant. One efficient operating, is to force the adjuvant/immunogen mixture through a small orifice, a a double hub needle. An other is to agitate violently and thoroughly the mixture + air directly in a syringe. A 10-15min mixture is required for obtaining optimally a thick emulsion. A drop of the emulsion should not disperse if thrown in water. Attention should be payed then to remove the air from the syringe before injection, and operate rapidly.

Inject the emulsion into animal by Sub Cutaneous route, IntraDermal route. ID route does not suit to rodents (mice). Other routes (IntrePerintoneal, or IntraGanglionar ) are not recommanded.

Technical and Scientific Information

- Adjuvant composition
AFC is a Water-in-oil emulsion and killed Mycobacterium, while AFI does not contain Mycobacteria. They are manufactured under controled procedures for reproducible quality, of immunogenic grade.

- Adjuvant effect
Freund adjuvants are mixed to antigens before injection to animals for production of specific antibodies. They stimulates the immunization through numerous factors. One important effect is to elicit an inflammation site and it's ability to improve the presentation of antigen to immuno competent cells. As a result, the immune response if more rapid, strong (higher titer of antibodies), and longer lasting. They were popularized wordly and have become the more

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commonly used adjuvants in any animal ware houses. However, some good practices should be observed for their use (http://www.ccac.ca/french/gui_pol/policies/IMMUNO.HTM) and it should not be used in Horses. FCA elicit effectively several draw backs. Additionnal information could found at http://www.unimelb.edu.au/research/ethics/animal/docs/Policy_No_2_Polyclonals_Feb_2002.rtf

- AFC draw back
  - AFC elicit severe inflammations to animals.
  - Some investigators are highly sensitive to CFA and are at considerable risk of developing an acute hypersensitivity reaction as well as a severe local reaction at the site of injection should accidental inoculation occur. For this reason caution must be exercised in operating.

To avoid these drawbacks, or for specific applications, please inquire for Titer max adjuvants that show very low inflammation.

- 'Adjuvants' and 'Carriers'
  An adjuvant is not the same thing as a carrier protein. Small molecules, haptens, that are often not immunogenic by them selves, nor will not become immunogenic if it is merely added to an adjuvant. However it can become able to elicit an immune response after conjugation to a big molecule, carriers. For such hapten-carrier immunogenic conjugates, the immune response will also be enhanced by adjuvant, as AFC/AFI. That is to say, adjuvant will not render haptens immunogenic, but will increase their immune response.

**Literature**

**Other Information**

**Related / associated products**
- Titer Max adjuvants
- MaxiBind carrier proteins

For in vitro R&D use only

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