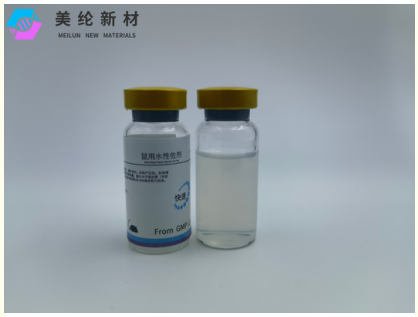
Mouse Rapid Aqueous Adjuvant

Our Product Introduction

Basic Information

- Place of Origin: Wuhan, Hubei, China
- Brand Name: Meilun Materials
- Model Number: SNK
- Minimum Order Quantity: 1 ML
- Packaging Details: 1ml/ bottle，10ml/ bottle
- Payment Terms: L/C, T/T
- Supply Ability: 1T/month



Product Specification

- Highlight: **Mouse Rapid Aqueous Adjuvant**, **Immune adjuvant**, **immunoadjuvant**

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武汉美纶新材料有限公司
WUHAN MEILUN NEW MATERIALS CO., LTD

Our Product Introduction

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Product Description

【Product Name】: Mouse Rapid Aqueous Adjuvant

【Main Ingredients】: Nano water-based adjuvant, polymer materials.

【Characteristics】: White transparent emulsion.

【Function and Purpose】: The reagent itself is a water-soluble adjuvant complex. There is no need for the complicated emulsification process of Freund's adjuvant when in use. The antigen and adjuvant only need to be mixed simply to immunize animals. Can be used via intramuscular or subcutaneous immunization routes. It has good broad-spectrum antibody production, high antibody titers, and high antibody affinity. By reducing the number of immunizations and lowering the antigen dose per immunization, total antigen usage is saved, greatly shortening the antibody production cycle, far superior to industry standards.

【Usage and Dosage】:

1.Calculate the required antigen usage. Dilute the antigen to a final concentration of 2 times with sterile physiological saline or PBS.

2.Thoroughly mix the adjuvant (recommended to mix with a syringe and push several times repeatedly). Under sterile conditions, take out the required amount (per injection of 50 μl) and mix it rapidly with the antigen at a volume ratio of 1:1 (the slight precipitation of the adjuvant after mixing with the antigen is normal; inject as soon as possible).

3.Immunize with multiple subcutaneous or inguinal injections, injecting 100 μl per mouse. (Injection methods can be based on the company's routine operations).

4.Reinforce immunization with the same dose and method on days 10-14 (the timing of the second dose depends on the actual antigen type). Note: Adjuvant and antigen are prepared and used immediately. The injection site is the same as the initial immunization.

5.IgG can be detected on day 14, and ELISA can be performed on a small blood sample on day 21 (these are experimental predictions; actual data conclusions should be based on the actual situation). Antibody titers can reach their peak. Subsequently, whole blood can be collected or antigen shock immunization and splenocyte fusion can be performed according to conventional methods.

6.If the titer is lower than expected on day 21, reinforce immunization with the same dose and method around day 21. Perform titer testing on days 28-35, and generally, antibody titers can reach their peak. Subsequently, whole blood can be collected or antigen shock immunization and splenocyte fusion can be performed according to conventional methods.

【Storage and Shelf Life】: Store at 4-8°C, aseptically remove, shelf life is two years.

【Manufacturer】: Wuhan Melon New Materials Co., Ltd

Product Q&A

Q1: How to choose MelonAntibody series immunization adjuvants?

Our water-soluble MelonAntibody series immunization adjuvants are available for various animals, including: water-based rapid immunization adjuvants for rabbits, mice, alpacas, goats, chickens, and pigs.

Q2: What are the characteristics of the MelonAntibody series immunization adjuvants?

MelonAntibody immunization adjuvant offers several advantages compared to conventional Freund's adjuvant, detailed as follows:

MelonAntibody requires only two immunization shots, whether for monoclonal or polyclonal antibody preparation, reducing the number of immunization shots compared to Freund's adjuvant.

By reducing the number of immunization shots and lowering the antigen dosage per shot, MelonAntibody significantly saves the total antigen dosage. Recommended antigen dosages are as follows: (1) For most protein antigens, 25-50μg per shot is suggested; (2) For highly immunogenic inactivated whole virus, whole bacteria, and virus-like particle antigens, 15-25μg per shot is recommended; (3) For small molecule antigens conjugated with carrier proteins, 50-80μg per shot is advised. Actual dosages should be primarily based on the company's previous data and experience.

MelonAntibody facilitates rapid antibody production with high titers and affinity. In a standard immunization protocol, whether for monoclonal or polyclonal antibody preparation, only two to three shots are required within three weeks, typically achieving ELISA titers (with a cutoff value of 0.1000) of 1:10000-1:10000000 by the fourth to fifth week.

MelonAntibody preserves the natural conformation of antigens, facilitating the screening and acquisition of monoclonal antibodies targeting conformational antigen epitopes, a critical feature lacking in Freund's adjuvant.

MelonAntibody is water-soluble, eliminating the need for the complex emulsification process required by Freund's adjuvant. Antigen and adjuvant only require simple mixing for animal immunization.

MelonAntibody utilizes the intramuscular immunization route, greatly simplifying the process compared to conventional mouse monoclonal antibody preparation, which may involve paw or splenic immunization.

An important application of MelonAntibody is its convenient use for preparing mouse polyclonal antibodies. Conventional polyclonal antibody preparation often involves rabbits, requiring more immunization shots, larger antigen doses, slower antibody production, and often outsourcing to specialized units due to high technical requirements. With MelonAntibody immunization adjuvant, any laboratory animal personnel can conveniently and rapidly prepare mouse polyclonal antibodies. A standard immunization protocol only requires immunizing five mice, resulting in 1 ml of high-quality mouse polyclonal antibodies after five weeks. (Strongly recommended for preparing mouse polyclonal antibodies using this adjuvant; 1 ml of high-quality mouse polyclonal antibodies is sufficient for the experimental needs of the vast majority of users, including applications such as ELISA, immunoblotting, flow cytometry, immunohistochemistry, and immunoprecipitation.)

Q3: Antigen Solvents

Solvents	Feasibility
PBS,saline	Ok
Contains urea	No effect.Customer feedback indicates urea concentrations can be as high as 6M or above.
Contains Guanidine Hydrochloride	No effect
Contains imidazole	No effect,but it is recommended to immunize after dialysis with PBS.

Q4:Species Suitable for Adjuvants

Species suitability MelonAntibody has been immunized with various species including mice, rats, rabbits, guinea pigs, goats, alpacas, chickens, monkeys, and more, all with good results. The adjuvant itself is a mixture of multiple adjuvants, not a single adjuvant.

Q5: Increasing adjuvant dosage for low antigen concentration

For mouse immunization, it's generally recommended to use 50μl of adjuvant with 50μl of antigen. It's possible to increase the dosage slightly, or administer injections to both legs, totaling 100μl of adjuvant with 100μl of antigen. However, excessively high antigen dosages, such as over 100ug directly injected into mice, are not advisable as they may lead to strong reactions or even fatalities.

Q6: Number of mice immunized with 1ml of adjuvant

Each immunization typically requires 50μl of adjuvant for two injections, so 1ml can immunize approximately 8 mice. The standard procedure involves two injections per mouse, each with 50μl of adjuvant and 50μl of antigen, totaling 100μl per injection. While theoretically 1ml could immunize 10 mice, practical considerations such as damaged syringes or tube adhesion might limit this to around 8 mice.

Q7: Immunization and booster injection methods

The adjuvant and antigen should be mixed thoroughly immediately before immunization. Delaying immunization can cause sedimentation, resulting in uneven distribution of active components and potentially affecting immunization outcomes. For immunization, the recommended injection site for MelonAntibody water adjuvant is the inner side of the hind leg muscles of mice. For booster injections, antigens are typically injected into the abdomen at a dosage of 20-50μg in a volume of 100-200μl, avoiding the liver and bladder.

Q8: Is muscle immunization necessary?

While MelonAntibody adjuvant is optimized for muscle immunization and is primarily intended for such use, it can also be administered subcutaneously. However, intraperitoneal immunization is not recommended.

Q9: Lump formation or leakage after adjuvant use

If lumps or leakage occur, it may be due to previous intraperitoneal or subcutaneous injections, resulting in unfamiliarity with muscle immunization. Clients can try injecting deeper to prevent lump formation. Initial use should involve cleaning the hind legs with alcohol, avoiding the two inner veins, and rotating the needle after injection.

Q10: Can the immunization interval be shortened?

It's generally not recommended to shorten the immunization interval due to potential effects on antibody affinity and potency. However, for serum potency testing, it's feasible to conduct tests 7-10 days after the second immunization, provided that efficacy standards are met. Subsequent booster injections for fusion can then be performed accordingly.

Q11: Can it be used for eukaryotic expression plasmids or whole viruses?

MelonAntibody adjuvant is not suitable for plasmid immunization, but it can be used for proteins and viruses.

Q12: Can it be used for non-protein antigens such as cells or viruses?

MelonAntibody adjuvant has been validated in tens of thousands of antigen immunization experiments, showing effectiveness with a wide range of non-protein antigens including cells, viruses, peptides, polysaccharides, lipids, heavy metals, antibiotics, pesticides, drugs, food safety-related compounds, etc.

Q13: Can it be used for immunization of nucleic acid plasmids or RNA?

Nucleic acid immunization is not suitable for MelonAntibody adjuvant, and lipid nanoparticles can be considered instead.

Q14: Can it be used for vaccine development?

The primary aim of developing MelonAntibody adjuvant components was for human vaccine adjuvants, and they can be used for vaccine development. However, considering the market cost requirements for animal vaccines, clients typically consider them for use in pets or specific animals. Nevertheless, if there is an interest in cooperation to achieve cost reduction and efficiency improvement goals using high-performance water-based adjuvants, the company's capabilities in supply chain cost control and large-scale GMP production lines can likely meet those requirements.

Q15: Suboptimal efficacy after two immunizations

For antigens with weak immunogenicity or when using the product for the first time, efficacy may not improve after two immunizations. In such cases, a third immunization can be administered 14 days after the second one, typically resulting in a significant increase in efficacy. However, a maximum of four immunizations is recommended. If efficacy still doesn't improve after four immunizations, it's advisable to consider re-immunization or antigen modification, especially for small molecule antigens like peptides.

Q16: Absence of splenomegaly despite adequate antibody efficacy

This is normal. Traditional adjuvants containing BCG induce strong immune responses, leading to enlarged spleens due to the presence of many B cells targeting BCG.

Q17: Differences between adjuvants, selection criteria, and possibility of mixing

There are significant differences between rabbit and mouse adjuvants, so mixing them is not recommended. While mouse adjuvants can be mixed with each other, it's generally not advisable unless time constraints necessitate it.

Q18: Why is water-based adjuvant more expensive than Freund's adjuvant?

While the price may appear slightly higher, it saves time costs by:

Reducing the time needed for immunization and subsequent procedures, thus saving on mouse care expenses for a month.

Reducing the required antigen dosage to only 1/5-1/10 of the original amount. The cost of natural antigens can be quite high, with 1mg selling for tens of thousands of dollars.

Q19: Can it be stored at -20°C?

Our adjuvant components are very stable and have been tested at 50°C for one month without any impact. However, they should not be frozen, as freezing can significantly affect immunization efficacy. Typically, they can be stored in a refrigerator at 4°C, preferably near the door but not in the innermost section. Some refrigerators may have poor temperature control, causing temperatures below 0°C in the innermost section.

Q20: Can fast adjuvants be used after immunization with Freund's adjuvant?

Yes, different adjuvants have similar functions, so it's possible to try using different adjuvants interchangeably.

Q21: Can it be used in parallel with aluminum adjuvants?

Yes, they can be used together. Any immunization method can generate both cellular and humoral immune responses.

Q22: Can fast adjuvants be used for booster immunization when the immunogen is cells rather than untreated protein?

The main purpose of booster immunization is to activate spleen cells to a high degree, which greatly influences the ability of hybridoma cells to secrete antibodies after fusion. Therefore, it's recommended to use the immunogen directly for booster immunization. Additionally, immunogens derived from cells often have low efficacy issues and complex compositions. The target epitope protein may not be the dominant immunogen. Previous experiences suggest that similar cell immunization approaches for antibody preparation services have generally failed to meet experimental expectations.

Q23: During the use of antibody preparation, does the adjuvant need to react with the polypeptide in the antigen to form a covalent bond?

In the process of mixing the antibody with the antigen for immunization, aqueous rapid adjuvants usually do not need to react with the polypeptide in the antigen to form a covalent bond. Its mechanism of action is mainly that the hydrophobic end of the polymer molecule in the adjuvant binds to the protein antigen (containing protein-coupled polypeptides or small molecules) through non-covalent bonds, such as hydrophobic interactions, hydrogen bonds, van der Waals forces, etc., to form a complex. This binding method can keep the protein structure unaffected. After injection into the animal, the adjuvant can slowly release the bound antigen, thereby achieving the effect of gradually stimulating the immune system.

Q24: Species suitability

MelonAntibody has been immunized with various species including mice, rats, rabbits, guinea pigs, goats, alpacas, chickens, monkeys, and more, all with good results. The adjuvant itself is a mixture of multiple adjuvants, not a single adjuvant.

Species	Adjuvant type	Antigen dosage(ug)	Antigen volume(ul)	Adjuvant volume(ul)
mice	MelonAntibody-Mouse	5~40ug	50	50
mice, guinea pigs	MelonAntibody-Mouse	20~50ug	70	70
rabbit, chicken	MelonAntibody-Rabbit	50~100ug	100	100
goat, alpaca	MelonAntibody-goat MelonAntibody-alpaca	200~500ug	300~500	300~500
monkey	MelonAntibody-monkey	200ug	200~300	200~300

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