

SDA 702B

NETWORKED POLYMER GEL

Long-Acting Aqueous Adjuvant

1. PRODUCT OVERVIEW

SDA 702B is a network-type cross-linked polyacrylamide hydrogel (P/O system) designed to provide the slow-release and antigen encapsulation benefits of water-in-oil (W/O) emulsions while avoiding the irritation, viscosity, and residue associated with oil systems. It contains Carbopol 974P with $\leq 0.5\%$ PLURONIC–mannitol emulsifier and has no animal-derived components. The hydrogel matrix encapsulates antigen, stabilizes its structure, and supports sustained antigen availability. Vaccines formulated with SDA 702B are stable, easy to inject, and exhibit very low reactogenicity. Appearance: clear to slightly bluish opalescent gel-white.

2. VACCINE PREPARATION

Typical antigen-to-adjuvant ratio (by weight): 1 : 4–1 : 9. SDA 702B is fully aqueous and does not require high-shear homogenization. Mixing can be performed at room temperature with moderate stirring. After combining antigen and adjuvant, adjust pH to 6.8–7.2 using NaOH or SDA J-S neutralizing solution to support optimal hydrogel structure. Final vaccine should meet sterility requirements.

3. EMULSION CHARACTERISTICS

System type: aqueous polymer microparticle hydrogel (P/O).

Viscosity (25°C): ~40 mPa·s.

Conductivity: ~18 μ S/cm.

Particle size: <1 μ m.

Stability: ≥ 12 months @ 4°C; ≥ 2 months @ 25°C; ~15 days @ 37°C.

4. IMMUNE RESPONSE

SDA 702B enhances vaccine potency by inducing strong humoral and cellular responses, including elevated IFN- γ and IL-12. The polymer network supports prolonged antigen stimulation and efficient antigen presentation. Recommended for bacterial, viral, mycoplasma, parasitic, and recombinant protein antigens.

5. TARGET SPECIES

Suitable for cattle, camels, pigs, sheep, poultry, and other high-value species. Especially beneficial for swine sensitive to W/O emulsions and for poultry vaccines that require slow-release immune stimulation.

6. POTENCY & TOLERANCE

SDA 702B provides long-lasting protective immunity and is effective for low-immunogenicity antigens. It allows dose reduction without loss of potency and shows minimal injection-site reaction with high field tolerance.

7. SAFETY & REGULATORY

Toxicological evaluations (Berlin test, Oral LD50, IP LD50, eye irritation, skin irritation, pyrogenicity) confirm excellent systemic and local tolerance. All raw materials meet USP/NF or EP compendial specifications.




SDA 702B KEY POINTS

- Network-type polymer hydrogel adjuvant.
- Strong antigen encapsulation + controlled slow release.
- Fully aqueous, low reactivity.
- Antigen ratio 1:4–1:9 (w/w).
- Excellent syringeability and handling.
- Suitable for bacterial, viral, mycoplasma, parasitic, and subunit antigens.
- Long-lasting immunity with high safety margin.

For more information or vaccine formulation guidance:

www.sdabio.com

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SDA 702 – NETWORKED HYDROGEL

Cross-Linked Polymeric Matrix for Antigen Delivery and Depot Effect

1. Product Overview

A Fully aqueous Polymer-based Adjuvant Cross Linking Agent Without High-Dimer Effect. Emulsion Without High shear. Achieves High Stability and Potent Antigen Release Through Superior Persistent Depot Effect.

2. Emulsion Characteristics

- All ingredients are pharmaceutical grade
- Emulsion meets or exceeds stability expectations
- Mixes well with good consistency.

3. Immune Response

Strong Th1 type immunity, Rapid Onset, Optimized IgYs and R₁E₂O₂ titres. Durable Protection. Excellent for Myxoma, PRE, (T₂) Recombinant Antigens.

6. Regulatory & Manufacturing Quality

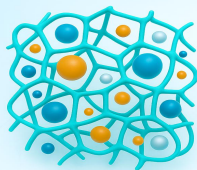
- SDA-702 is manufactured
- USP&C CP grade base ingredients
- USDA EMAM listed
- Suitable for terminal sterilization all tests.

7. Instructions for Use

- Mix ratio 1:4 to 1:4 (20% w/w max)
- Gentle stirring for 15-30 mins
- Emulsion with pH 6.0-7.2
- IM or SC injection


4. Regulatory & Manufacturing Quality

- USP&C CP grade base ingredients
- Suitable for terminal sterilization all tests.



SDA 702B – NETWORKED POLYMERIC GEL ADJUVANT

Cross-Linked Hydrogel Matrix for Antigen Encapsulation and Long-Acting Immunity




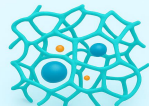
Networked Polymeric Gel Adjuvant

Structure and Mechanism of Action

Cross-Linked Hydrogel Matrix


Formed by interweaving polymer chains and stabilized by a biocompatible cross-linking agent.






Antigen Encapsulation


Antigen molecules are entrapped within the hydrogel matrix, forming a delivery reservoir.






Sustained Antigen Release

A controlled diffusion mechanism allows the antigenic material to be gradually released from the matrix.



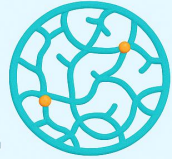


Hydrogel Matrix

Key Features of the Polymeric Gel System

High Water Content


The hydrogel matrix is swollen with a large amount of water.



polymer chain
water

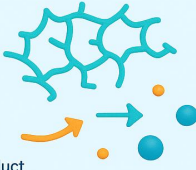
Viscous and Elastic

The gel possesses a viscoelastic nature, enabling it to enhance retention at the injection site.



Biodegradable

Over time, the polymer chains degrade into biocompatible products.

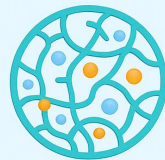


polymer chain
degraded product

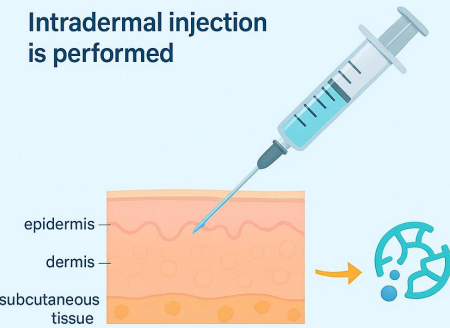
Application

Subcutaneous Drug Delivery

Drug is dispersed in the hydrogel matrix



Intradermal injection is performed



epidermis
dermis
subcutaneous tissue

Therapeutic agent is released over an extended period