A COMPLETE AND EFFICACIOUS VACCINE

- Protection of breeder sows and their piglets
- Wide antigenic spectrum
- Protection against neonatal diarrhoea caused by E. coli and Clostridium perfringens type C
- Neutralises the Clostridium novyi α toxin responsible for SUDDEN DEATH in lactating sows
- Light and potent

REFERENCES

2. Estudio PE-06-CB-18.
5. Estudio PE-06-09.
7. Estudio PE-06-09.
16. 1983 Feb 26;112 (9): 201-2.
19. Experience a new type of immunity!
The antigen, dendritic cells and macrophages, presenting cells are responsible for capturing the antigen and presenting it to the rest of the immunological system.

**Ginsenosides**
- Attract and stimulate the production and maturation of mononuclear cells, dendritic cells and macrophages.

**MHC class I**
- Immunohistocompatibility I complex

**MHC class II**
- Immunohistocompatibility II complex

**Adaptive Immune Response**
- Efficaciously induces antibody production

**SUISENG®** is the first vaccine marketed that includes this innovative technology: HIPRAMUNE®

HIPRAMUNE®-G is the new adjuvant developed by HIPRA based on saponins extracted from GINSENG: GINSENOSES

The guidelines on the development of new adjuvants play a determining role in the mediation and establishment of a link between the non-specific immune response and the adaptive immune response.

A water-based adjuvant with ginsenosides increases production of antibodies in comparison with conventional water-based adjuvants.

Stimulates production of peripheral mononuclear cells (this cell population is key at the inoculation site of a vaccine for giving a proper immunological response).

Stimulates the maturation of dendritic cells, thereby improving an animal’s antigen presentation process.

Stimulates production of peripheral mononuclear cells (this cell population is key at the inoculation site of a vaccine for giving a proper immunological response).

Immunological studies conducted at the HIPRA R&D Department have demonstrated that HIPRAMUNE®-G: HIPRAMUNE®-G effers to the production of peripheral mononuclear cells, dendritic cells and macrophages.

Stimulates the maturation of dendritic cells, thereby improving an animal’s antigen presentation process.

A water-based adjuvant with ginsenosides increases production of antibodies in comparison with conventional water-based adjuvants.

The combination of a water-based adjuvant (aluminum hydroxide) and ginsenosides modulates the cellular and humoral response, thereby inducing improved protection.

The antigen, dendritic cells and macrophages, presenting cells are responsible for capturing the antigen and presenting it to the rest of the immunological system.

**Light**
- Attract and stimulate the production and maturation of mononuclear cells, dendritic cells and macrophages.

**Potent**
- Stimulates production of peripheral mononuclear cells (this cell population is key at the inoculation site of a vaccine for giving a proper immunological response).

**Light and potent**
- Stimulates the maturation of dendritic cells, thereby improving an animal’s antigen presentation process.

**Stimulates production of peripheral mononuclear cells (this cell population is key at the inoculation site of a vaccine for giving a proper immunological response).**
Thanks to its new generation water-based adjuvant, HIPRAMUNE®:

- **Produces less FEVER**
- **Less ADVERSE REACTIONS**
- **Reduction of LUMPS at the inoculation site**

An experimental study conducted with SUISENG® and the leading vaccines marketed for preventing neonatal diarrhoea assessed their SAFETY. The results demonstrated that SUISENG® was the less reactive vaccine:

**Progress of rectal temperatures in each treatment group**

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**Percentage of animals that showed some general or local signs after administration of the treatments**

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<th>F4ac</th>
<th>F5</th>
<th>LT</th>
<th>F4ab</th>
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*There are significant differences compared to the SUISENG® group.

**Wide protection**

**SUISENG® improved protection against neonatal diarrhoea under experimental conditions**

*In comparison with another water-based combined vaccine against E. coli and Cl. perfringens

**The potency of SUISENG® is demonstrated in a challenge trial with E. coli**

Three groups of 1-day-old piglets were chosen that had properly ingested colostrum and they were challenged with a strain of enteropathogenic E. coli.

**Hyperimmunisation** of the colostrum demonstrated!

Well immunised colostrum in the first week of life is fundamental for reducing the incidence of diarrhoea in the farrowing pen

HIPRA’s R&D services conducted a study in NULLIPAROUS animals to assess quantitatively and qualitatively the production of specific antibodies against the main adhesion factors of the strains of E. coli and the β toxin of Cl. perfringens in the colostrum of sows.

**Hyperimmunisation** of the colostrum demonstrated!

Well immunised colostrum in the first week of life is fundamental for reducing the incidence of diarrhoea in the farrowing pen

**Hyperimmunisation against E. coli**

The findings demonstrate SUISENG®’s capacity for hyperimmunisation of colostrum against neonatal colibacillosis.

**Hyperimmunisation against necrotic enteritis in piglets (Cl. perfringens type C)**

Titres of neutralising antibodies of the type C Cl. perfringens β toxin higher than 5IU/ml of colostrum significantly prevent the mortality caused by necrotic enteritis in litters of piglets.

**Forget about lumps on the neck!**
The complete vaccine: TRIPLE protection

SUISENG® is the only vaccine that prevents neonatal diarrhoea in piglets caused by E. coli and Cl. perfringens type C and neutralises the α toxin of Clostridium novyi responsible for sudden death in sows.

Sudden death of lactating sows caused by Clostridium novyi

Clostridium novyi types A and B is a Gram-positive anaerobic bacterium. Acute infection caused by it is considered the most significant cause of mortality in breeder sows11-18.

Hipra’s R&D Department assessed the capacity to induce serum neutralising antibodies against the α TOXIN of Clostridium novyi in breeder sows vaccinated with SUISENG®.

1. They collected serum from sows vaccinated with SUISENG®, and sows inoculated with physiological serum were maintained as a CONTROL group at the time of farrowing (3 weeks after the 2nd vaccination).
2. These sera were mixed with the purified α TOXIN of Cl. novyi.
3. They were inoculated in mice to assess the mortality induced by the toxin.
4. The findings demonstrated the capacity of the sera of the sows vaccinated with SUISENG® to neutralise α TOXIN.

100% dead
100% alive

TRIPLE protection:

- Neonatal diarrhoea caused by E. coli
- Necrotic enteritis of piglets caused by Cl. perfringens
- Neutralisation of the Cl. Novyi α toxin

SUISENG® protects breeder sows and their piglets.
Revaccination
6 weeks
3 weeks before farrowing. Revaccination: on each subsequent gestation, administer one dose 3 weeks before the expected date of farrowing.

Swine: 2 ml/animal. The basic vaccination scheme consists of two doses: the first dose at approximately 6 weeks before farrowing and a second dose at approximately 3 weeks before farrowing.

ADMINISTRATION ROUTE:
Intramuscular, into the neck muscles.

FARROWING
80% ER25; LT Enterotoxoid of
E. coli ≥ 35% ER25. Toxoid ≥ 50% ER70; F5 fi mbrial adhesin of
Clostridium perfringens type C
≥ 55% ER70; F4ac fi mbrial adhesin of
E. coli ≥ 78% ER70; F5 fi mbrial adhesin of
Clostridium novyi α toxin
≥ 79%

Neutralises the Clostridium novyi α toxin responsible for SUDDEN DEATH in lactating sows

Light and potent

A COMPLETE AND EFFICACIOUS VACCINE

■ Protection of breeder sows and their piglets
■ Wide antigenic spectrum
■ Protection against neonatal diarrhoea caused by E. coli and Clostridium perfringens type C
■ Neutralises the Clostridium novyi α toxin responsible for SUDDEN DEATH in lactating sows

Experience a new type of immunity!