



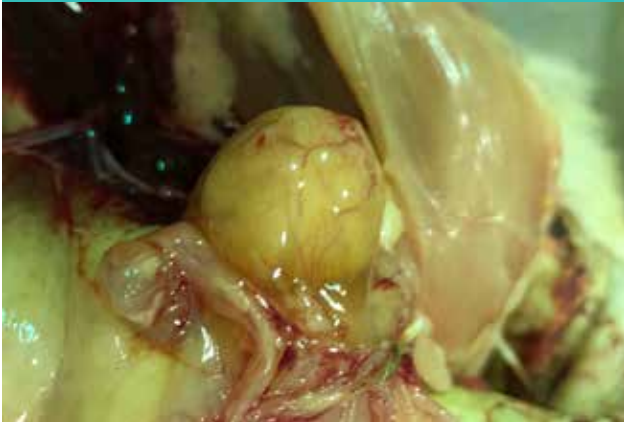
THE VACCINE THAT PAYS IT FORWARD.

VAXXITEK® HVT+IBD provides long-lasting protection against IBD and Marek's disease and, in field conditions, leads to better weight gain, feed conversion ratios, and uniformity.^{1, 16}

TWO MAJOR IMMUNOSUPPRESSIVE DISEASES

Infectious bursal disease and Marek's Disease are two major immunosuppressive diseases affecting poultry worldwide.

INFECTIOUS BURSAL DISEASE



Infectious bursal disease (IBD) or Gumboro is a highly contagious viral infection in chickens.

It is caused by serotype 1 IBD virus that destroys the lymphocytes in the bursa of Fabricius. This leads to immunosuppression and secondary infections. Damage to the bursa can impair the bird's ability to respond to other vaccines or field agents.²

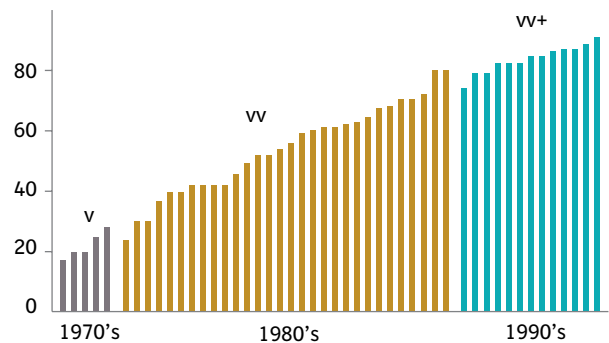
Classical and vvIBD viruses are responsible for most cases of clinical IBD. The disease may appear suddenly and morbidity may reach 100%. Field infections may cause lethargy, muscle hemorrhage, bursitis, and mortality. Some classic and all variant IBD strains are associated with subclinical IBD, which may cause important economic losses due to immunosuppression and decreased performance. This disease occurs mainly, but not exclusively, in chickens under three weeks of age.



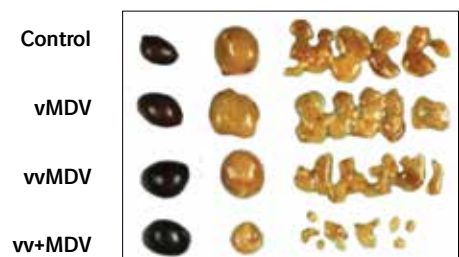
MAREK'S DISEASE

Marek's disease (MD) is a highly contagious herpesvirus infection that can cause rapid-onset lymphoid tumours, paralysis, and immunosuppression due to the malignant transformation of the CD4+ lymphocytes. Clinical signs vary according to the affected tissue. Condemned carcasses and decreased egg production are common consequences. MD may be fatal.

Over the past decades, the MD virus has become increasingly virulent and immunosuppressive and is among the diseases with the highest economic impact in modern poultry production worldwide.³



Infected birds become carriers and shedders of the virus.



v= Virulent vv= Very virulent vv+= Very virulent +
B. W. Calnek

VAXXITEK® HVT + IBD

WHAT IT IS

VAXXITEK® HVT+IBD offers simple, safe, single vaccination for long lasting protection against known classic, variant, and very virulent IBDV strains and Marek's disease.⁴

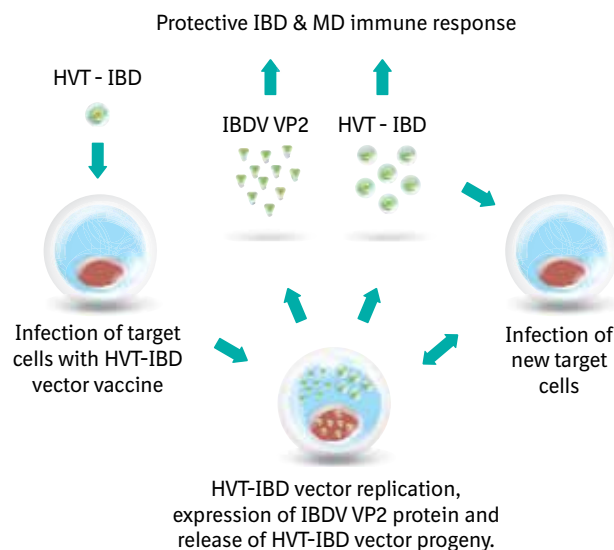
The estimated economic burden of MD may reach US \$1 to \$2 billion annually.⁵

HOW IT WORKS

- One single vaccination to protect against IBD and MD
- Only one hatchery administration in one-day-old chicks or *in ovo*
- Broad protection against most pathotypes of the IBD virus
- Lifelong immunity in broilers: up to 10 weeks duration of immunity
- Early onset of immunity, no immunity gap⁶



MECHANISM OF ACTION

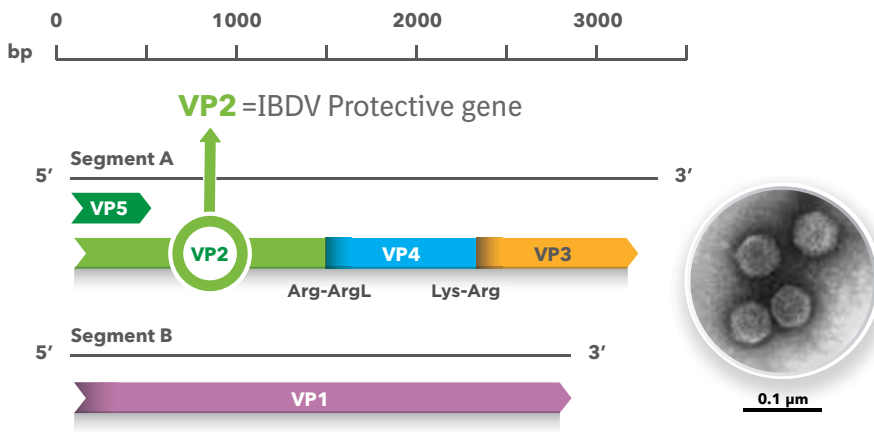


VAXXITEK HVT+IBD starts to colonize targeted lymphocyte populations between one and two weeks of age. During replication, IBD viral VP2 protein is expressed. HVT and VP2 will induce an immune response that will protect chickens against both IBD and MD.⁴

BROAD PROTECTION

PROTECTION AGAINST MOST PATHOTYPES OF IBDV

Variant and classic strains of IBDV share common protective antigens,⁴ especially viral protein 2 (VP2). The immunogenicity of the VP2 antigen is a key feature for obtaining broad protection.



The IBDV genome contains double stranded RNA. VP2 is responsible for the protective immune response.

Most of the amino acid changes between antigenically different IBDV are clustered in the hypervariable region of VP2 which is the region that elicits neutralizing antibodies.

Efficacy against a broad spectrum of IBDV strains.

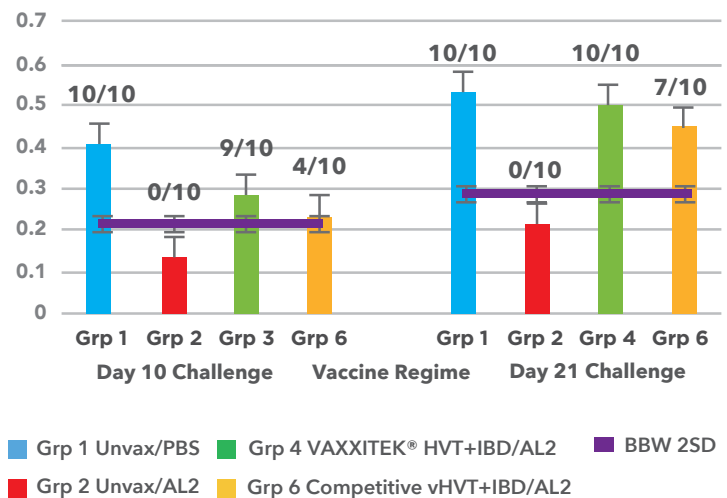
BURSA PROTECTION

Live vaccination has been extensively evaluated using classical, very virulent⁷ and variants strains of IBD.⁸ The ability of the bursa to recover more efficiently with VAXXITEK® HVT+IBD was proven by lower histologic scores obtained in a study of maternal antibody-negative chickens vaccinated and then challenged with AL2 IBDV strain.^{9,10}

In the controlled, comparative study, birds challenged with AL2 and vaccinated with VAXXITEK HVT+IBD compared to birds vaccinated with a competitive vHVT+IBD, VAXXITEK HVT+IBD showed improved vaccine performance of 90% and 100% protection at D10 and 21 compared to competitive which showed 40% and 70% respectively.¹¹

Furthermore, VAXXITEK HVT+IBD showed good protection against bursa damage evidenced by the mild to minimal bursa depletion scores for each of the challenge periods D10 and 21, compared to the competitive which showed mild to moderate damage at D10 challenge.¹¹

Bursa to Body Weight Ratio: Number Protected/Total of Vaccinated/Challenged, Non-Vaccinated/Challenged and Non-Vaccinated/Non-Challenged Controls Study¹¹



EARLY ONSET OF IMMUNITY

VAXXITEK® HVT+IBD provides the advantages of safe, early protection against Marek's disease and IBD, even in the presence of respective maternally-derived antibodies (MDA).⁴

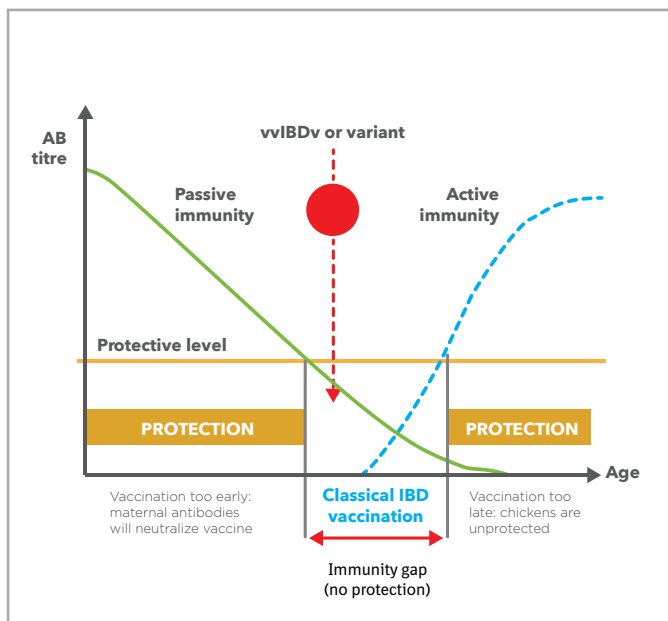
NO IMMUNITY GAP

Early protection is needed to avoid the immunity gap,⁶ defined as the lack of protection between the decay of passive immunity from maternal antibodies and the rise of active immunity induced by vaccination.

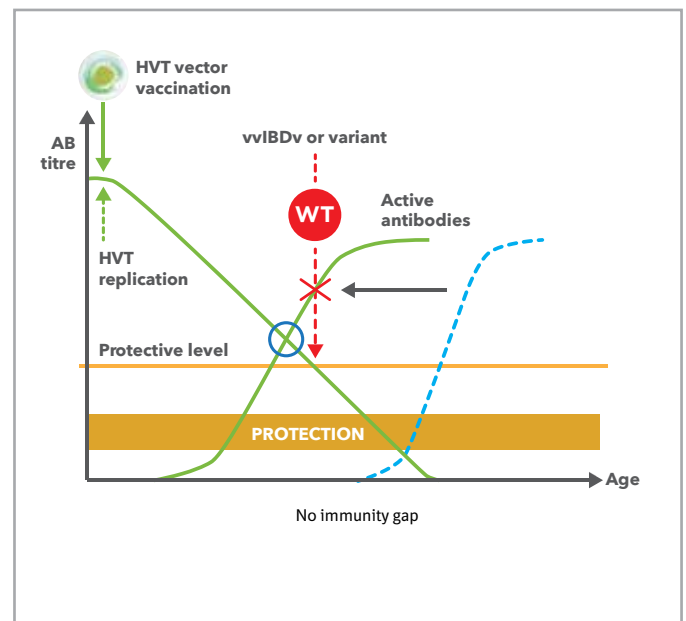
VAXXITEK HVT+IBD can be given at the hatchery to achieve early protection and avoid the immunity gap.⁶

Immune protection against classic, variant and vvIBD has been demonstrated from 14 days of age.¹²

The onset of immunity against MD has been shown from 4 days of age.



The immunity gap between waning of passive immunity and the onset of active immunity. During this period, birds are unprotected against IBD virus infection.



VAXXITEK HVT+IBD is administered to one-day-old chicks or *in ovo*, providing an early onset active immunity that is not neutralized by the maternal antibodies.

OPTIMAL GROWTH PERFORMANCES

ESTABLISHING AN IMMUNE FOUNDATION

In addition to environmental factors, immunosuppression can be caused by stressors including viral diseases such as IBD and MD. Immunosuppression leads to poor disease resistance, increased treatment costs and mortality.¹³ Even in the absence of clinical signs, birds may show decreased performance, poor feed conversion, and loss of carcass quality, all leading to economic loss.

Early vaccination against the main viral immunosuppressive diseases, infectious bursal disease (IBD) and Marek's disease, will lay the basis of the immune foundation.¹⁴

KEY BENEFITS

- **Viability**¹⁵
- **Improved flock uniformity**¹⁶
- **Economic benefits**^{17,18}
- **Increased daily weight**¹⁹
- **Bursal protection**⁶
- **Lower cost of meat production**^{17,18}
- **Decreased feed conversion**¹⁷
- **Fewer carcass condemnations**^{13,16}
- **Decreased medication costs**²⁰
- **Decreased condemnation rates**¹⁷

COMPATIBILITY

VACCINE COMPATIBILITIES/ INCOMPATIBILITIES AT THE HATCHERY

Approved for co-administration with Boehringer Ingelheim vaccines:

- ✓ SB-1 strain^{15,21}
- ✓ Rispens strain vaccines²⁰
- ✓ PREVEXXION® RN^{23,24}
- ✓ ND and IB live vaccines (spray application)²⁵

Not approved for co-administration with:

Any HVT or vHVT vaccine, alone or in combination with other vaccines.

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More than 65+ to 90 scientific papers published to date have shown that VAXXITEK® HVT+IBD provides long-lasting protection against IBD and MD in one single vaccination.



VAXXITEK® HVT+IBD SUMMARY



ONE INJECTION.
MULTIPLE BENEFITS.
PEACE OF MIND.

VAXXITEK® HVT+IBD technology ensures proper gene expression and provides for your flock against IBD and Marek's disease backed by a trusted partner for service and support that helps move your business into the future.

PERFORMANCE BENEFITS & ROI

As demonstrated in field conditions, healthier birds lead to better weight gain, feed conversion ratios, uniformity, and more.^{1,16}

CONVENIENCE & RELIABILITY

Just one shot in a controlled hatchery environment gives early, accurate, and consistent protection.⁴

BURSAL PROTECTION

VAXXITEK HVT+IBD stimulates immunity without the damage to the bursa that can occur with conventional modified-live virus vaccines.⁶

PROVEN RESULTS

The numbers tell it all. 130 billions of birds have been protected with VAXXITEK HVT+IBD worldwide.

LIFELONG IMMUNITY IN BROILERS

One single vaccine dose provides lifelong immunity—up to 10 weeks duration.⁴

BROAD PROTECTION

Highly effective protection in birds against several different strains of IBD including classical, variant, and very virulent IBD (vvIBD) viruses.⁴

STRONG OVERALL IMMUNITY

The immune foundation of the birds is laid at the hatchery, allowing a tailor-made vaccination program according to the type of bird and the disease risk.¹⁴

BACKED BY SCIENCE

We support our vaccination services and poultry health programs with strong evidence: published research and trials conducted by Boehringer Ingelheim veterinary experts and field technicians.

