



POLIMUN IBD+

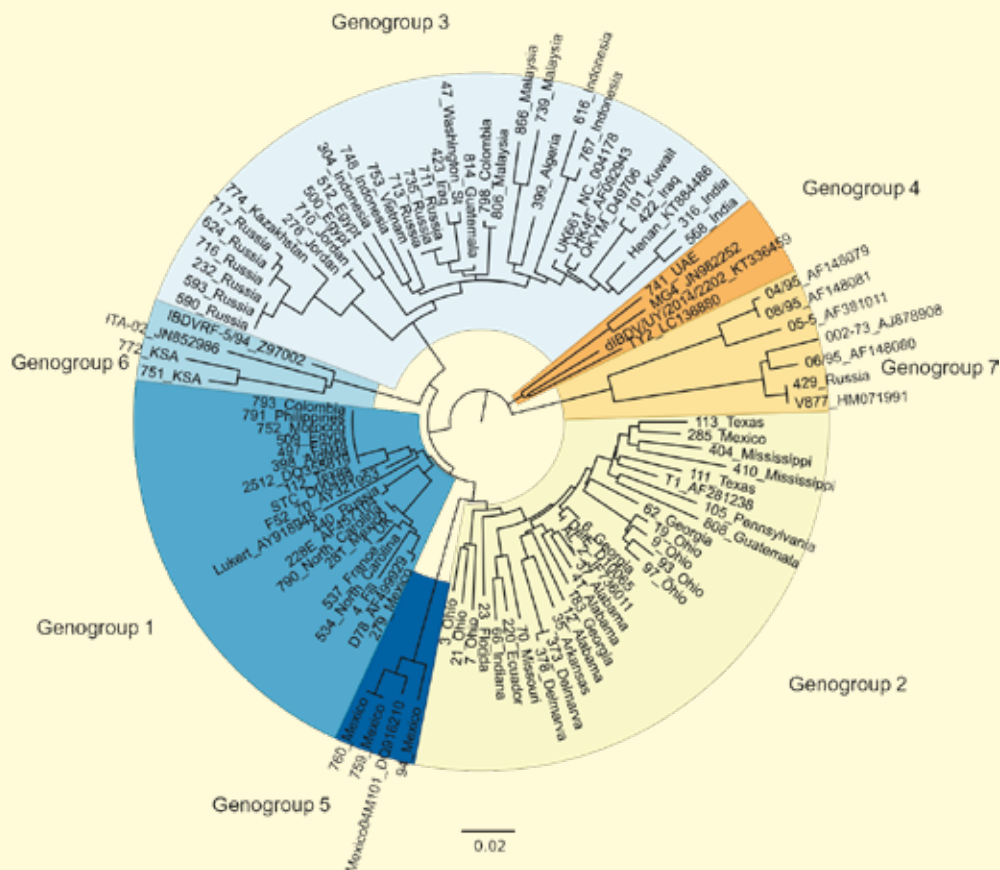
Belongs to POLIMUN GUMBORO vaccines line - a solution for various types of epizootic situation with Infectious Bursal Disease

STRONG RESPONSE TO vvIBD

The vaccine breakthrough titer of 1000 mAb*, combined with rapid colonization of the bursa and high homology with very virulent IBDV, provides early protection against field vvIBD.

*In IDEXX ELISA

CLASSIFICATION OF IBDV ISOLATES BY GENE GROUPS



The classification of Gumboro viruses is based solely on the genogroups identified from phylogenetic analysis of the hvVP2 of strains of the Gumboro disease virus worldwide. 7 major genogroups have been identified.

Genogroup 1 (cvIBDV)

includes classic Gumboro disease viruses.

Genogroup 3 (vvIBDV)

includes very virulent Gumboro viruses isolated from different parts of the world that have been implicated in outbreaks of Gumboro disease worldwide.

IBDV Genogroup 1 (cvIBDV) and Genogroup 3 (vvIBDV)

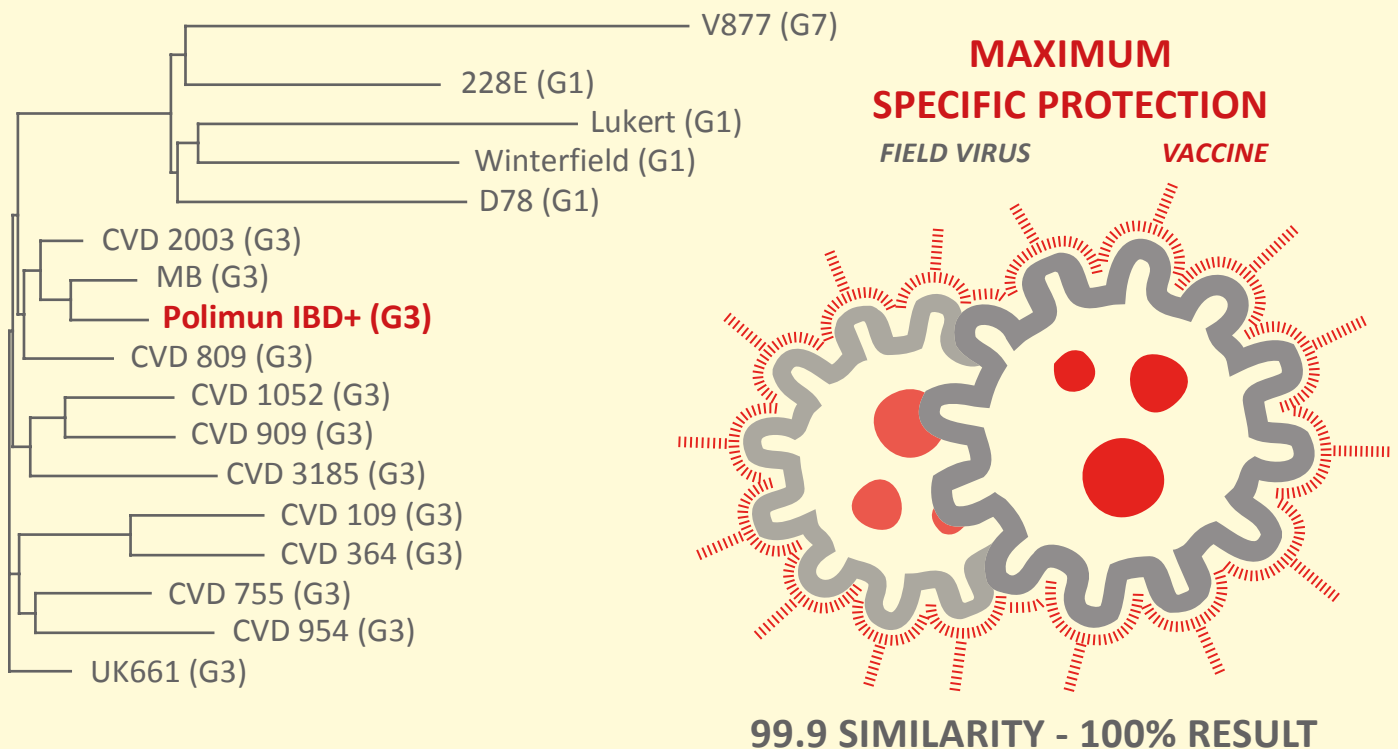
are globally distributed on different continents (Europe, Asia, Africa).

IBDV Genogroup 2, 4, 5, 6, 7

are geographically restricted to separate continents (Australia, New Zealand, Latin America).

The choice of a vaccine is always justified by the epizootic status of the enterprise, knowledge of the specificity of circulating Gumboro disease viruses and the selection of the most homologous vaccines, that guarantee stable Gumboro situation

ANALYSIS OF PHYLOGENETIC RELATIONSHIP OF POLIMUN IBD+ TO FIELD ISOLATES

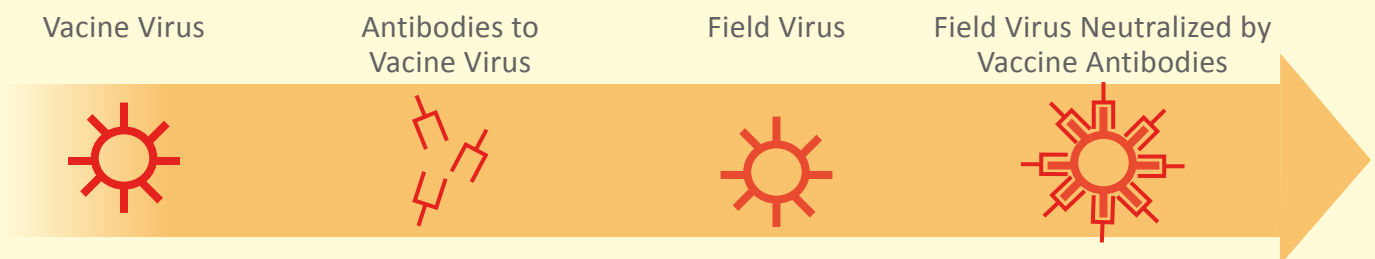


POLIMUN IBD+ improves the epizootic on-farm situation with vvIBD.

The effectiveness of POLIMUN IBD+ is directly related to the high homology of VP2 gene regions of the field isolates and the antigenic profile of vaccine strain.

The structural protein VP2 of the POLIMUN IBD+ vaccine strain is homologous to the field vvIBDV. The homology of the amino acid sequence regions of VP2 253, 284, 314-325 is 100%.

*results of CVD studies, comparing the amino acid sequences of conservative regions of the VP2 protein of the POLIMUN IBD+ vaccine strain and very virulent field isolates of the Gumboro disease virus.



POLIMUN IBD+ forms a highly specific post-vaccination immune response to circulating vvIBDV and ensures the stability of the situation with IBD

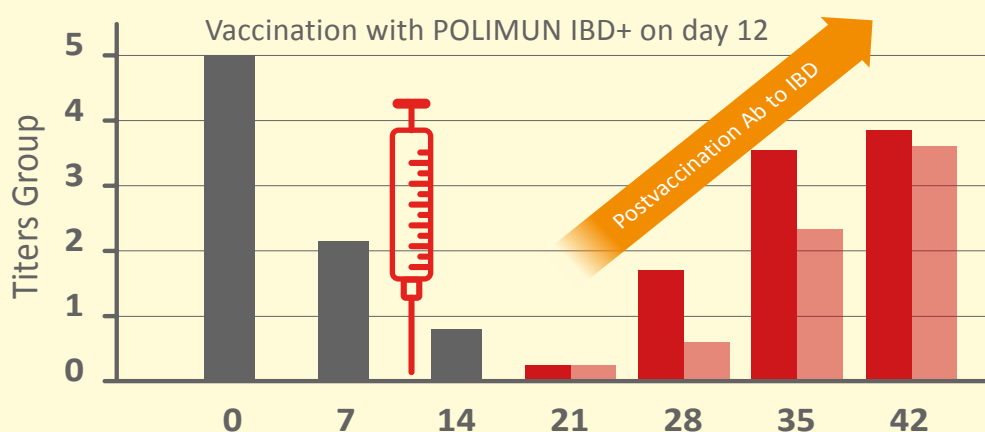
POLIMUN IBD+ forms early and persistent immunity protecting birds from clinical and subclinical IBD.

The POLIMUN IBD+ vaccine virus is detected in the bursa of Fabricius on the 3rd day after vaccination.

IBD vaccine virus detection results after vaccination of 12-day-old broilers with POLIMUN IBD+, Ukraine, 2013

Days of life	IBD vaccine virus detection
day 12 - vaccination of birds with POLIMUN IBD+	
15	is present
18	is present
21	is present
25	is present
28	is present
35	is present
42	is present

Development of antibodies in vaccinated and non-vaccinated groups housed together, Ukraine, 2013



Maternal antibodies



Antibodies to IBD
in vaccinated chicks



Antibodies to IBD
in control group

POLIMUN IBD+ has a transmissible activity - it quickly spreads horizontally among a poultry flock, forming group immunity



POLIMUN GUMBORO Vaccines Line for any type of epizootic situation

The aim of vaccination is to protect the chickens from disease before they can be infected with field Gumboro virus.

The choice of a vaccine is based on knowledge of epizootic situation of each farm

In conditions of imminent threat of vvIBDV infection, the use of the POLIMUN IBD+ vaccine is justified; in the absence of a threat, it is possible to switch back to the intermediate vaccines like POLIMUN IBD after 3-5 consecutive «hot» cycles of POLIMUN IBD+.

Tentative time of poultry vaccination

Vaccine type	Broilers		Layers	
	from breeders vaccinated with live vaccine	from breeders vaccinated with inactivated vaccine	from breeders vaccinated with live vaccine	from breeders vaccinated with inactivated vaccine
POLIMUN IBD Light	10-14 days	14-17 days	14-21 days	21-28 days
POLIMUN IBD	from 10 day	10-14 days	10-14 days	14-28 days
POLIMUN IBD+	from 10 day	10-13 days	from 10 day	12-17 days

Expected levels of post-vaccination antibodies after POLIMUN GUMBORO line application, assessed using ELISA diagnostic kits

Vaccine type	IDEXX		BioChek	
	expected titer 35-45 days	suspicion of infection	expected titer 35-45 days	suspicion of infection
POLIMUN IBD Light	1 000-4 000	6 000 & more	6 000 – 12 000	14 000 & more
POLIMUN IBD	1 000-4 000	6 000 & more	6 000 – 12 000	14 000 & more
POLIMUN IBD+	1 000-4 000	6 000 & more	6 000 – 12 000	16 000 & more



POLIMUN IBD Light

500

low viral pressure



POLIMUN IBD

800

unstable situation,
transition from hot
to medium



POLIMUN IBD +

1000

region with
predisposing factors
for a very virulent virus

GENERAL RECOMMENDATIONS:

Calculation of the vaccination day

Choosing the right time to vaccinate chickens depends primarily on:

- level of maternal antibodies in the chickens
- breakthrough titer of vaccine
- virulence of the field virus.

Checklist for drinking water vaccination control

Optimal time frame for the entire poultry vaccination procedure is 1.5-2 hours.

The vaccine solution should be drunk no later than 75-90 minutes and no earlier than 45-60 minutes after lowering the drinking lines.

The optimal amount of working solution for vaccination of poultry

The most accurate calculation is based on the age of the bird and the coefficient.

$N \text{ (liters)} = \text{bird age (days)} \times \text{number of birds (thousand heads)} \times \text{coefficient}$,
where the conversion factor for laying hens is always 1, and for broilers - 1.5-2.0, depending on the weight of the bird and the ambient temperature that affects water consumption.

The time for formation of thirst in the bird before vaccination

The optimal time for thirst formation is usually about 1.5 - 2 hours before vaccination, provided there is free access to feed.

Determination of the exact time and frequency of vaccination should be carried out using serological tests (ELISA, IDEXX, Deventer's formula)

Drainage of water supply system

Before vaccinating birds, flush the drinker lines in the poultry house with high pressure.

Stabilization of working vaccine solution

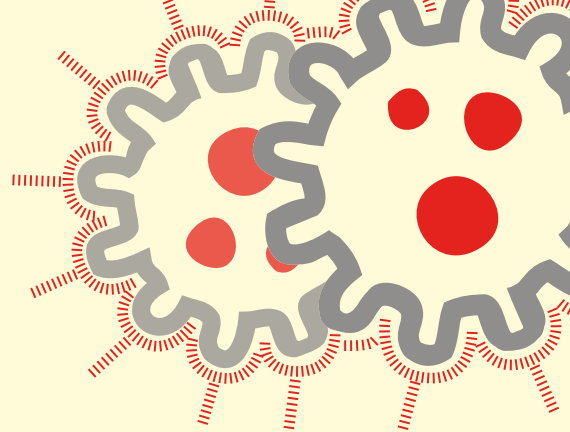
It is recommended to use special products with stabilizing dyes, such as INDIGO Max.

Control of technology and quality of vaccination

Quality of vaccination can be monitored using dyes-indicators of vaccination by the degree of blue staining of the mucous membranes of the oral cavity and crop of chickens.

Laboratory control

Continuous serological monitoring allows to control the epizootic situation of the disease, analyze the quality of vaccination, evaluate post-vaccination immunity (antibody production rate, their level and homogeneity)



The POLIMUN GUMBORO line of vaccines provides antigenic diversity and the ability to respond with the right vaccines, corresponding to epizootic situations of any complexity



POLIMUN ND Hitchner B1 — Newcastle Disease

POLIMUN ND Hitchner B1 + IB H120 — Newcastle Disease, Infectious Bronchitis

POLIMUN ND CLON 124 — Newcastle Disease

POLIMUN ND CLON 124 + IB H120 — Newcastle Disease, Infectious Bronchitis

POLIMUN LA-SOTA — Newcastle Disease

POLIMUN IB H120 — Infectious Bronchitis

POLIMUN IB MULTI — Infectious Bronchitis

POLIMUN IB VAR2 — Infectious Bronchitis

POLIMUN IBD Light — Gumboro Disease, target titer 500

POLIMUN IBD — Gumboro Disease, target titer 800

POLIMUN IBD+ — Gumboro Disease, target titer 1000

POLIMUN AE+POX — Avian Encephalomyelitis and Fowl Pox

POLIMUN AE — Avian Encephalomyelitis

POLIMUN POX — Fowl Pox

POLIMUN REO 1133 — Infectious Arthritis (Tenosynovitis)

INDIGO MAX — remedy for water preparation and control over the vaccine application process

Inactivated

POLIMUN ND IB EDS — Newcastle Disease, Infectious Bronchitis, Egg Drop Syndrome

POLIMUN ND inac — Newcastle Disease

POLIMUN ND + IB inac — Newcastle Disease, Infectious Bronchitis

POLIMUN REO 1133 inac — Infectious Arthritis (Tenosynovitis)

POLIMUN SALMO — Salmonellosis



