

Frequently Asked Questions

Reviewed for accuracy by independent consultants:

Drew A. Vermeire, PhD., PAS, Dipl. ACAN

Roger L. Saltman, DVM, MBA

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What is IgScan™ Antibody Specificity Testing?

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IgScan™ Antibody Specificity Testing is a new Arkion Life Sciences service that measures not only total IgG in milk and colostrum replacers, but also the antibody specificity of that IgG against key early calfhood enteric pathogens. Research shows high total IgG doesn't always mean high disease-specific protection.^{1,2}

This poor specificity can leave calves vulnerable, increasing calf illness, death, veterinary costs, and lost future production. IgScan reports detail IgG specificity, compares it to similar products, and recommends ways—such as adding EggTek® IgY—to optimize antibody protection and improve calf health outcomes.

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Why is antibody specificity important?

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Antibodies are only able to bind to targets they recognize. If an antibody does not recognize a specific bacterium or virus of interest, the antibody cannot bind to it and neutralize it. Antibody specificity measures which pathogens, or antigens, the antibodies in a sample can recognize. This precision is essential for effective supplementation to help prevent calf illness or death.

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Who uses IgScan?

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IgScan was developed as a tool for nutrition companies, veterinarians and nutritionists to understand the IgG antibody specificity in their or their customer's milk replacer or colostrum replacer. Knowing the antibody specificity leads to better choices. Knowledge is power.

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My milk replacer (or colostrum replacer) has IgG. Why should I use IgScan?

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Milk replacers are formulated to provide dairy calves with the nutrients needed for growth, but not necessarily with the IgG needed to provide enteric immunity. In fact, milk replacers and colostrum replacers vary greatly in the amount of IgG as well as the specificity of IgG, which means not all protein sources are the same.

IgG is integral to a healthier – and thus more valuable – calf. In a 2020 study³, calves that received egg powder supplements to support enteric immunity were heavier than the control group and calves supplemented with EggTek-C had lower mortality. According to the study, body weight increased ($P < .05$) on days 42 and 56 in calves fed IgY for an average of 10 pounds per calf.



How does my milk replacer (or colostrum replacer) compare with others?

The best way to know how your milk replacer IgG compares to others is to have it tested using IgScan. Arkion has tested many commonly used products and can provide an IgScan comparison report of how a customer's sample compares with them.

Note: Although all milk replacers have a specified amount of protein, Arkion Life Sciences found a wide variation in IgG levels in milk replacer brands. Additionally, milk replacer companies sometimes modify formulas to minimize costs. So, while the total nutrient value remains the same, the level of IgG can vary from lot to lot.

Additionally, of the many ingredients used in calf milk replacers today, only whey, whey protein concentrate, plasma, and IgY can provide antibodies. Many additives are used to boost the whey-based calf milk replacers. In 50% of milk replacers in the U.S., blood plasma is used to help boost the IgG.

Although rich in total IgG, Arkion's research has shown that EggTek-C has a higher concentration of specific antibodies against enteric pathogens than bovine plasma. While plasma has a higher total antibody concentration, the active vaccination process used to generate EggTek-C produces a product with greater specificity than harvested plasma. This means that plasma may not provide adequate passive immunity during the critical early days of a calf's life. IgY is the only product that provides the appropriate antibody profile to boost intestinal immunity in neonatal calves. The IgScan testing service precisely identifies what supplementation is needed.



What diagnostic technology is used to determine specificity for the IgScan test?

We use an indirect ELISA (Enzyme-Linked Immunosorbent Assay) method to measure antibody specificity in milk replacer or colostrum replacer products. In simpler terms, the test looks for antibody concentrations to certain pathogens. These antigens are then measured to determine the potential gaps in passive immunity for calves.



What antigens are tested for specificity in IgScan?

Initially IgScan will include seven antigens related to early calfhood diseases. (Additional antigens will be added as they become available.)

- Bovine Rotavirus
- Bovine Coronavirus
- *Cryptosporidium* parvum (two antigens)
- *Escherichia coli* K99
- *Salmonella* Dublin
- *Salmonella* Typhimurium



What is the process to use the IgScan Service?

Your IgScan sample kit can be obtained through the egceligy.com website. Complete the online registration form to pay, order your kit and start the process. Follow the instructions for sample collection and mailing. The results will be emailed when the analysis is complete. (Approx. 1 to 2 weeks depending on volume of submissions.)

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Can we test colostrum, blood, whole milk, or only milk replacer?

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The IgScan testing service currently analyzes antibodies in milk replacer and colostrum replacer that are in powder form. Arkion will expand testing to liquid samples in the next few months.

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Is it possible that specific IgG levels may vary between lots of a particular brand of milk replacer?

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Yes. For least-cost formulations, milk replacer ingredients can vary from lot to lot due to price differences in the ingredients used (ingredients such as whey). This inconsistency in formulation can lead to variable IgG levels.

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My client is buying the best quality milk replacer that is available to him. Shouldn't I assume that that milk replacer will also have the highest IgG levels available?

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No, the IgG level is completely dependent on the type and quality of milk proteins used in that milk replacer.

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Does the level of IgG in the intestinal tract really have much effect on gut health?

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Absolutely. We want the highest possible level of antibody that is specific for the pathogen(s) most likely to affect the calf. This will be somewhat farm dependent.

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May I get results on overall IgG levels in my milk replacer or just IgG levels against specific intestinal pathogens?

A

IgScan provides more details than simply total IgG. As part of the test for antibodies against specific pathogens, total IgG is measured. However, keep in mind, that total IgG is less important than the specificity of antibodies within the total IgG.

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Can I get this testing at my state diagnostic lab?

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No, it is only available from Arkion Life Sciences through the EgCel IgY business unit. (Go to: egceligy.com for more information.)

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Once I have the results from the IgScan test, will I be able to get technical support for what to do next in a problem herd of calves?

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Yes, we have both a consulting veterinarian and a consulting nutritionist available to assist you. The Arkion EgCel team is also ready to answer any questions you may have.

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Has this test been certified by an official third party?

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Yes. Arkion Life Sciences has verified the IgScan test protocols and methodology through an independent laboratory for both consistency and accuracy.

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How much does IgScan cost?

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Pricing will vary. However, if you are an EgCel customer, there are significant discounts available based on EgCel purchase volume. Contact Arkion for more information.

References

¹ Saltman, R.L., S.W. Jones, M. Tollefson. 2024. Measuring immunoglobulin G and immunoglobulin G specificity in Milk Replacers. J. Dairy Sci., 107 (Suppl. 1) pg. 253 (Abst 2199)

² Saltman, R.L., S.W. Jones, M. Tollefson. Measuring pathogen specificity of IgG in milk replacers and the potential for supplementing with pathogen-specific IgY, Proc American Assoc Bovine Practitioners, Vol. 59, No. 2, Sept. 2025

³ van Kuijk, Sandra, Ruth Kinkead, Gillian Scoley, Steven Morrison, and Yanming Han. 2021. Effect of immunized egg proteins on the performance and neonatal diarrhoea incidence in newborn calves, J Anim Physiol Anim Nutr. 2021; 00: 1-8