



Overview and indications for use of Bio-Serv's Nutra-Gel diet for laboratory rodents

Karen M. Froberg-Fejko, LATG, VMD & Jaime Lecker, PhD

Certain animal and protocol conditions, including genetic alteration, post-operative intervention, dehydration and small weanling size, create a requirement for 'special needs' products to ensure animal survival and to encourage reliable research outcomes. Bio-Serv was the first to create a product to meet these special needs. Nutra-Gel is a highly palatable, nutritionally complete food and water gelled diet.

Post-operative care

Rodents have a high metabolic rate, making proper nutrition essential, especially post-operatively. Providing nutritionally complete, palatable diets to recovering animals is critical to rodent survival post-surgery¹. Nutra-Gel provides post-operative hydration and essential nutrients, which are vital for a quick return to a normal metabolic state.

Debilitation and weakness

Rodents are used for a variety of research models, some of which can create a debilitated or weakened condition. These conditions may make it difficult for the rodents to access standard food hoppers or water sippers. Nutra-Gel can be provided at cage level, facilitating access even by weakened rodents. Because Nutra-Gel is nutritionally complete, it meets the rodents' daily water and food requirements.

Weanlings

Weanlings of transgenic mice are often undersized and may require a 'transitioning' diet that is both easy to consume and nutritionally complete. When provided to the dam while she is still nursing, Nutra-Gel has been demonstrated to 'jumpstart' the weanlings' growth and allow for a smooth transition onto a standard rodent diet.

Development of Nutra-Gel

Nutra-Gel was developed several years ago in response to a request from a large government institution to manufacture a gelled 'mush diet' for rodents that required a food and water source at cage level. The institution had been creating the diet internally, in a process that was highly laborious and time consuming. Bio-Serv was able to successfully formulate and manufacture the gelled diet for the institution. Nutra-Gel was then added to our product line because of its success in providing cage-level nutrition with convenience. The popularity of Nutra-Gel diet has increased, especially as the



FIGURE 1 | Grain-based Nutra-Gel packaged in a 500-gram cup. Users can scoop out the desired amount.

positive effects of nutritional intervention in debilitated rodents have been realized over the years.

Formulation and use of Nutra-Gel

Nutra-Gel is a sterile product available in two formulations: a grain-based form and a purified form. The grain-based Nutra-Gel is packaged either as a 500-gram cup (**Fig. 1**), from which a customer can scoop out the needed amount, or as a tray that contains 16 cubes (**Fig. 2**), each weighing approximately 40 grams. Each cube is individually sealed to maintain moisture and sterility. The purified formulation of Nutra-Gel (**Fig. 3**) is made with refined ingredients, so the diet is suitable for estrogen-sensitive models and imaging studies. The bacon flavor is highly palatable to rodents and has the added benefit of acting as an appetite stimulant to animals with poor appetite.

For added convenience and flexibility, both the grain-based and purified formulas are available in a dry mix kit that includes the powdered diet and four trays. The gelled diet is prepared by simply adding hot water to the powdered diet, mixing the ingredients and pouring into the provided trays. One overwhelming benefit of using the kit is that it allows for the incorporation and oral

Bio-Serv, Frenchtown, NJ. Correspondence should be addressed to K.M.F.-F. (kfroberg@bio-serv.com).

ADVERTISING FEATURE



FIGURE 2 | Grain-based Nutra-Gel trays consist of 16 cubes, each weighing approximately 40 grams. Each cube is individually sealed to maintain moisture and sterility.



FIGURE 3 | The purified formulation of Nutra-Gel is made with refined ingredients, so the diet is suitable for estrogen-sensitive models and imaging studies.

delivery of drugs such as antibiotics, anti-inflammatories or test articles. Rodents willingly consume these medications when they are incorporated into a highly palatable, nutritious diet, a preferable alternative to potentially stressful dosing.

When feeding to rodents, Nutra-Gel should be placed directly on the bedding or in the food hopper. Nutra-Gel remains moist in the cage for 24–48 hours, depending on the type of cage system in use. Most mice consume approximately 10–12 grams of Nutra-Gel per day, and rats consume approximately 26–60 grams of Nutra-Gel per day, depending on strain and age.

Economic advantage

Nutra-Gel is easier on budgets because it is more economical per ounce when compared to other commercially available gelled diet products. Our grain-based Nutra-Gel costs approximately 31 cents per ounce. Other commercially available formulas include a 2-ounce cup of hydration form (which is not nutritionally complete) that costs 52 cents per ounce and a nutritionally complete gelled diet form which costs 60 cents per ounce. This represents a savings of nearly 50% per ounce for Nutra-Gel versus the closest comparable product.

Company profile

At Bio-Serv, we help our customers achieve their research goals and provide solutions to challenges as they arise when working with laboratory animals. Our well-trained Professional Staff including a PhD Nutritionist, Veterinarian and National Sales Manager are available and prepared to help you develop a non-stressful treatment plan for your laboratory animal species. Unlike typical feed manufacturers, we do more than just sell products; we partner with our customers to help them achieve their research goals.

For more information on Nutra-Gel or any other Bio-Serv products, please visit our website at bio-serv.com or contact us at 800-996-9908.

1. Animal Research Advisory Committee, Office of Animal Care and Use, NIH Intramural Research Program. *Guidelines for Survival Rodent Surgery* (1999). <http://oacu.od.nih.gov/ARAC/documents/Rodent_Surgery.pdf>

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