LabDiet®
ADVANCED PROTOCOL®

PROVEN NUTRITION

for Today's Targeted Research

PRODUCT REFERENCE MANUAL

LABDIET®: *Setting the Standard for Over 100 Years*

1894	Purina Mills founded
1917	Purina Animal Nutrition Center established in Gray Summit, Missouri, USA
1930s	Purina begins investigating the unique dietary needs of lab animals
1942	LabDiet® 5001 Rodent Diet introduced; first diet specifically for laboratory research animals
1960	Complete nutritional information published for all LabDiet® products
1970s	Certified LabDiet® introduced; first to comply with GLP standards
1970s	TestDiet® product line created for specialized custom & purified diet demands
1984	PicoLab® introduced — first irradiated diets for laboratory research animals
1996	Richmond plant achieves industry's first ISO certification, now ISO 9001:2008
1997	A new TestDiet® custom diet facility is built, achieves ISO certification in first year
1998	Micro-Pack™ Portion Control introduced
1999	DentaGuard introduced — first additive to prevent dental calculus for canine and primate specie
2003	**LabDiet® Advanced Protocol® introduced;** First products with Verified Isoflavone content
2004	LabDiet® becomes the first "Titanium" corporate sponsor of The Jackson Laboratory
2006	TestDiet® opens manufacturing site in the United Kingdom
2007	TestDiet® expands tablet production, introduces Primate Enrichment & Health products
2010	LabDiet® products approved for sale in the Peoples Republic of China
2014	TestDiet® expands again; opens new state of the art facility in Richmond, Indiana

ADVANCED PROTOCOL® FROM LABDIET®

We're Advancing With You.

At Purina (PMI®) LabDiet®, there's nothing we value more than the trust of the research community. Cultivated over the years, it's a legacy unmatched in the industry. Today, the legacy continues across the world—with Advanced Protocol.®

First introduced in 2003 and modified in 2014 with customer input, Advanced Protocol® is a proven product line of laboratory animal diet options for specialized and focused research where refined nutrition is important. These products are formulated and designed to give scientists conducting unique animal studies all the advantages of using a proven LabDiet® product in unique, sophisticated *Advanced Research Protocols*.

YOUR WORK IS WORTH IT

As the frontiers of science have advanced, so have we, pioneering such breakthroughs as irradiated diets, portion control feeding, customized TestDiet® products, and more. Through it all, one principle has remained constant: the work of science is too important to risk on hyperbole or diets unproven by science.

The methods of scientific research are always evolving. Changes in recent years have been dramatic, including the advent of new animal models and expanded knowledge of nutrients and non-nutrients. Research has become significantly more precise and targeted. In order to maintain the control you've come to expect from LabDiet®, we recognized that a specialized line of advanced diet options was needed.

LAB RESEARCH COMBINED WITH MARKET RESEARCH

Working in concert with researchers at universities and other leading facilities across the country, scientists at the Purina Animal Nutrition Center began the work over a decade ago that would lead to Advanced Protocol®. They Tested–Investigated–Refined and kept networking with industry leaders to expand the line in 2014. They sought to define key variables, such as nutrient concentrations and the effects of non-nutrients required to optimize animal performance while maintaining study parameters. Only when conclusive results were gathered did we create Advanced Protocol® products. The result is a targeted line that's based, as are all LabDiet® products, on solid science, not whim.

We created Advanced Protocol® to give you advanced dietary options for new directions in today's research. Of the products in the line, the majority are for rodent models. Others are for a variety of research models in use today, including birds, fish, and frogs. For rodent studies requiring diets with exact levels of isoflavones, several products are available with verified concentrations of isoflavones.

Since 1982, when a team led by Richard Palmiter and Ralph Brinster injected modified rat DNA into a fertilized mouse embryo, thousands of transgenic strains have been developed. Transgenic models have enriched the landscape of genetic diversification, which already included crossbreeding, inbreeding, and selection of mutants. Researchers from PMI® have led the way in understanding transgenics' diverse nutritional needs.

No single diet is right for every animal model. For example, if a transgenic strain has been developed on an inbred background, its needs will likely be the same as for that background strain. However, transgenic strains used as models for cancer tumor, cardiovascular disease or estrogen-sensitive studies may need an iso avone Veri ed diet.

Whether your study uses transgenics or not, there's a LabDiet® product that will lead you to results you can believe in every time. A LabDiet® scientist can help you choose—just email info@labdiet.com.

THE NAME YOU TRUST

When you choose LabDiet® Advanced Protocol® products, you get legendary LabDiet® quality through and through. That means:

- **Managed Formulation = Constant Nutrition.®**
  Our exclusive formulation program assures you of constant levels of nutrients in every product you buy. When consistent diets go into your research, precise results are obtained.

- **ISO 9001:2008 certification.**
  Our plant in Richmond, Indiana meets the uncompromising quality management requirements of the International Standards Organization—and has since 1996! Our high standards mean that you have better control over your research.

- **LabDiet® scientists.**
  Partners who can understand your research and help you choose the best product—whether it's an Advanced Protocol® diet or another LabDiet® product—are always just a phone call away.

- **Over 70 years of leadership & discovery.**
  Since 1942, we've supported the best scientific research with the best research-proven animal nutrition products.

What it all means: LabDiet® Advanced Protocol® gives you the same level of confidence that you've always received from LabDiet® products, so your most targeted research will never be compromised by unproven diets.

With LabDiet®, we've always said, "Your work is worth it." With Advanced Protocol®, your work is still worth it. Now more than ever.

Based on research done at Purina Mills and collaborative laboratories, and feedback from our customers, we offer the following guidelines for feeding transgenic rodents:

- If you've had success using a standard LabDiet® product, and for protocols in which estrogen activity does not need to be monitored, we recommend that no changes be made to your feeding regimen. For discussions and details, contact us.

For protocols in which estrogen activity needs to be monitored and managed, refer to our Advanced Protocol® verified rodent diets. There are several diets from which to select.

- For protocols that require intensive, postpartum breeding of mice, PicoLab® 5058, PicoLab® 5V5M, or PicoLab® 5LJ5 are recommended. These products are high-fat diets designed to provide the proper nutrition for challenging breeding pairs. Vacuum-packed options are also available.

- For protocols that require less intensive rodent breeding or animal maintenance, PicoLab® 5053, PicoLab® 5V5R, JL Rat and Mouse/Auto 6F 5K67, JL Rat and Mouse/Irr 6F 5LG4, or Prolab® Isopro® RMH 3000 5P76 works best.

Advanced Protocol® verified rodent diets are formulated for rat and mouse colonies that require management of dietary estrogenic activity. They are manufactured at the LabDiet® ISO 9001:2008 plant in Richmond, Indiana. Each production batch is sampled and analyzed for total isoflavone content*** (genistein, daidzein, and glycitein) prior to release for sale.

Verified rodent diets are formulated to target 10 ppm, 50 ppm or 75 ppm total isoflavones, depending on the product.

If your study requires a diet with controlled, measured, and verified levels of isoflavones, the chart below can help you choose the correct diet or email info@labdiet.com to speak with a nutritionist.

Product Number	Product Name
5K96*	Advanced Protocol® Verified Casein Diet 10 IF
5V5R**	PicoLab® Select Rodent Diet 6F/50 IF
5V5M**	PicoLab® Select Mouse Diet 9F/50 IF
5V75	Verified Rodent Diet Pelleted 75 IF
5V75	Picolab® Verified Rodent Pelleted 75 IF
5V12	Verified Rodent Diet Extruded 75 IF
5V12	PicoLab® Verified Extruded 75 IF

*** TestDiet® custom product**
**** Available as conventional pellets or extruded particle**
***** IF = Total Isoflavone Content**

RODENT FORMULAS

	Advanced Protocol® Certified PicoLab® Rodent 20	Advanced Protocol® Pico-Vac® Rodent Soft Mix[3]	Advanced Protocol® Veri ed Casein Diet 10 IF[3]	Advanced Protocol® Certified Rodent Diet, 18%	Advanced Protocol® PicoLab® High Energy Mouse Diet	Advanced Protocol® PicoLab® Select Rodent 50 IF/6F	Advanced Protocol® PicoLab® Select Mouse 50 IF/9F	Advanced Protocol® Veri ed 75 IF Irradiated	Advanced Protocol® PicoLab® Veri ed 75 IF EXT
PRODUCT CODE NUMBER	**5K75**	**5K92**	**5K96**	5LG3	**5LJ5**	**5V5R**	**5V5M**	**5V75**	**5V12**
NUTRIENTS									
Protein, min %	**20.0**	**20.0**	**19.0**	**18.0**	**17.0**	**18.0**	**18.0**	**20.0**	**20.0**
Crude fat, min %	**4.5**	**9.0**	**4.0**	**3.5**	**11.0**	**5.0**	**8.0**	**4.5**	**4.5**
Crude fiber, max %	**6.0**	**4.0**	**5.0**	**6.0**	**3.0**	**5.0**	**5.0**	**4.0**	**4.0**
CERTIFIED	O			O					
IRRADIATED CAP-SAC™	◎		◎ **BOX**		◎	◎	◎	◎	◎
IRRADIATED VAC-PAC™		◎			◎ 5LP1				
AUTOCLAVABLE								▲	
APPROPRIATE FOR:									
Rats	Q	Q	Q	Q		Q		Q	Q
Mice	Q	Q	Q	Q	Q	Q	Q	Q	Q
Hamsters	Q	Q	Q	Q		Q		Q	
PRODUCT FORM[1]									
Round Pellet: 1/2" round x 3/4" long			Q						
Oval Pellet: 10 x 16 x 25mm	Q			Q	Q	Q**25 lb**	Q**25 lb**	Q	
Extruded Particle						Q**15 lb**	Q**15 lb**	**5V12**	Q
Meal	**s/o**	Q	Q	**s/o**	**s/o**				**s/o**

[1] s/o = special order
[3] Available at TestDiet® at 765.966.1885
Product numbers in italics require a minimum order.
Cap-Sac™ = 25 lb heat-sealed bag; Vac-Pak™ = 6, 5 lb vacuum sealed packages

PRIMATE FORMULAS

	Advanced Protocol® Old World Primate w/ DentaGuard	Advanced Protocol® New World Primate w/ DentaGuard	Advanced Protocol® Callitrichid Diet[2]	Advanced Protocol® Callitrichid High Fiber Diet[2]	TAD Primate Diet*
PRODUCT CODE NUMBER	5LG1	5LG2	**5LK6**	**5LK7**	**5L0P**
NUTRIENTS					
Protein, min %	**20.0**	**20.0**	**8.0**	**8.0**	**17.0**
Crude fat, min %	**5.0**	**9.0**	**2.8**	**1.8**	**13.0**
Crude fiber, max %	**10.0**	**5.5**	**1.0**	**2.0**	**7.0**
PRODUCT FORM					
Peanut Biscuit	Q				Q
Mini Biscuit		Q			
Meal/Powder[3]			Q	Q	

Also available: Transit-Pak™ Primate Diet

[2] **Values on a reconstituted basis**
[3] **Available at TestDiet® at 765.966.1885**
Biscuit sizes:
Peanut Biscuit: 50 x 25 x 31 mm (2" x 1" x 1-1/4")
Mini Biscuit: 6 x 6 x 25 mm (1/4" x 1/4" x 1")
Product numbers in italics require a minimum order.
***TAD – Typical American Diet**

OTHER FORMULAS

	Advanced Protocol® Aquatic Mix Diet[3]	Advanced Protocol® Xenopus Diet	Advanced Protocol® LabDiet® Frog	Advanced Protocol® Fresh Water Turtle	Advanced Protocol® Small Avian Maintenance	Advanced Protocol® Large Avian Maintenance	Advanced Protocol® Insectivore Diet	Advanced Protocol® PicoLab® Natural Sunflower*	Advanced Protocol® High Calcium Cricket[3]	Advanced Protocol® Low Residue Porcine Surgery Mix[3]
PRODUCT CODE NUMBER	**5K93**	**5LF9**	**5LP3**	**5LP4**	**5LP5**	**5LP6**	**5LP7**	**5LP8**	**5LP9**	**594K**
NUTRIENTS										
Protein, min %	**50.0**	**55.0**	**41.0**	**40.0**	**14.5**	**15.0**	**28.0**	**16.0**	**15.0**	**15.0**
Crude fat, min %	**14.0**	**15.0**	**12.0**	**10.0**	**5.0**	**5.0**	**12.0**	**23.0**	**4.0**	**7.5**
Crude fiber, max %	**1.5**	**1.0**	**4.0**	**5.0**	**5.0**	**5.0**	**13.0**	**35.0**	**1.0**	**1.0**
IRRADIATED								◎	◎	
PRODUCT FORM[1]										
Meal/Powder[3]	Q	Q							Q	Q
Extruded Particle			**s/o**	**s/o**	**s/o**	**s/o**	**s/o**			

[1] **s/o = special order**
[3] **Available at TestDiet® at 765.966.1885**
*** 5LP8 Advanced Protocol® PicoLab® Natural Sunflower is an enrichment product, not a complete diet. A variety of additional enrichment products are available, visit www.labdiet.com for additional information.**

CANINE FORMULAS

	Advanced Protocol® Low Residue Canine Surgery Mix[3]	Advanced Protocol® High Density Canine Diet	Advanced Protocol® Certified High Density Canine Diet
PRODUCT CODE NUMBER	**5K94**	**5L18**	**5L66**
NUTRIENTS			
Protein, min %	**16.0**	**27.0**	**27.0**
Crude fat, min %	**8.0**	**16.0**	**16.0**
Crude fiber, max %	**1.0**	**4.0**	**4.0**
CERTIFIED		O**5L66**	O
IRRADIATED		☢	
PRODUCT FORM			
Chunk: 10 x 8mm		Q	Q
Meal/Powder[3]	Q		

[3] **Available at TestDiet® at 765.966.1885**

Standard Diets • Certified Diets • Irradiated Diets
Specialized Diets • Verified Diets

LabDiet®

Your work is worth it.®

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LOFLB11P50188 June 2014