



Product Data - D12492

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Description

Rodent Diet with 60% kcal% fat.

Used in Research

Fatty Liver
Inflammation
Obesity
Diabetes

Packaging

Product is packed in 12.5 kg box.
Each box is identified with the
product name, description, lot
number and expiration date.

Lead Time

IN-STOCK.
Ready for next day shipment.

Gamma-Irradiation

Yes. Add 10 days to delivery time.

Form

Pellet, Powder, Liquid

Shelf Life

Most diets require storage in a cool
dry environment. Stored correctly
they should last 6 months.
Because of the high fat content is
best if kept frozen.

Control Diets

D12450B, D12450J, D12450K

Formula

Product #D12492	gm%	kcal%
Protein	26.2	20
Carbohydrate	26.3	20
Fat	34.9	60
Total kcal/gm	5.24	100

Ingredient	gm	kcal
Casein, 30 Mesh	200	800
L-Cystine	3	12
Corn Starch	0	0
Maltodextrin 10	125	500
Sucrose	68.8	275.2
Cellulose, BW200	50	0
Soybean Oil	25	225
Lard*	245	2205
Mineral Mix S10026	10	0
DiCalcium Phosphate	13	0
Calcium Carbonate	5.5	0
Potassium Citrate, 1 H ₂ O	16.5	0
Vitamin Mix V10001	10	40
Choline Bitartrate	2	0
FD&C Blue Dye #1	0.05	0
Total	773.85	4057

Formulated by E. A. Ulman, Ph.D., Research Diets, Inc., 8/26/98
and 3/11/99.

*Typical analysis of cholesterol in lard = 0.72 mg/gram.
Cholesterol (mg)/4057 kcal = 216.4
Cholesterol (mg)/kg = 279.6

D12450B, D12451, D12492 The "Original High Fat Diets"

- Van Heek M, et al. Diet-induced Obese Mice Develop Peripheral, but not Central Resistance to Leptin. *J. Clin. Invest.* 1997; 99:385-390.
- Taheri S, et al. Distribution and quantification of immunoreactive orexin A in rat tissues. *FEBS Lett.* 1999 Aug 20; 457(1):157-61.
- Nonogaki K, et al. Leptin-independent hyperphagia and type 2 diabetes in mice with a mutated serotonin 5-HT_{2C} receptor gene. *Nature Medicine* 1998; 4:1152-1156.
- El-Haschimi K, et al. Two defects contribute to hypothalamic leptin resistance in mice with diet-induced obesity. *J.Clin.Invest.* 2000; 105:1827-1832.
- Bush EN, et al.(Metabolic Disease Research, Abbott Laboratories) Adiposity, Leptin Resistance, Hyperphagia, Hyperglycemia, Glucose Intolerance and Insulin Resistance in C57BL/6j Mice Fed High Fat Diets.Endocrine SocietyAnnual Meeting 2001, Poster Session.
- Shapiro ME, et al. (Metabolic Disease Research, Abbott Laboratories) Effects of Treatment of C57BL/6j Mice Fed High vs. Low Fat Diets with Metformin or Rosiglitazone on Adiposity, Food Intake, Hyperglycemia and Insulin Resistance. Endocrine Society Annual Meeting 2001, Poster Session.
- Masuzaki H, Paterson J, Shinyama H, Morton NM, Mullins JJ, Seckl JR, Flier JS. A Transgenic Model of Visceral Obesity and the Metabolic Syndrome. *Science.* 2001; 294:2166-2170.
- Razani B, Combs TP, Wang XB, Frank PG, Park DS, Russell RG, Li M, Tang B, Jelicks LA, Scherer PE, Lisanti MP. Caveolin-1 deficient mice are lean, resistant to diet-induced obesity, and show hyper-triglyceridemia with adipocyte abnormalities. *J. Biol. Chem.* 2001; (in press).
- Vallet P, Grujic D, Wade J, Ito M, Zingaretti MC, Soloveva V, Ross SR, Graves RA, Cinti S, Lafontan M, and Lowell BB. Expression of human alpha 2-adrenergic receptors in adipose tissue of beta 3-adrenergic receptor-deficient mice promotes diet-induced obesity. *J.Biol.Chem.* 275: 34797-34802, 2000.
- Vidal-Puig AJ, Grujic D, Zhang CY, Hagen T, Boss O, Ido Y, Szczepanik A, Wade J, Mootha V, Cortright R, Muoio DM, and Lowell BB. Energy metabolism in uncoupling protein 3 gene knockout mice. *J.Biol.Chem.* 275: 16258-16266, 2000.
- Ziotopoulou M, Mantzoros CS, Hileman SM, & Flier JS. Differential expression of hypothalamic neuropeptides in the early phase of diet-induced obesity in mice. *Am. J. Physiol. Endocrinol. Metab.* 279:E383-E845, 2000.
- Scrocchi LA & Drucker DJ. Effects of Aging and a High Fat Diet on Body Weight and Glucose Tolerance in Glucagon-Like Peptide-1 Receptor *-/-* Mice. *Endocrinology* 139:3127- 3132, 1998.
- Ghibaudi L, Cook J, Farley C, Van Heek M, & Hwa J.Fat Intake Affects Adiposity, Comorbidity Factors, and Energy Metabolism of Sprague-Dawley Rats. *Obes. Res.* 10:956-963. 2002
- Dube MG, Beretta E, Dhillon H, Ueno N, Kalra PS & Kalra SP. Central Leptin Gene Therapy Blocks High-Fat Diet-Induced Weight Gain, Hyperleptinemia, and Hyperinsulinemia. *Diabetes* 51:1729-1736, 2001.
- Tang H, Vasselli JR, Wu EX, Boozer CN, & Gallagher D. High-Resolution Magnetic Resonance Imaging Tracks Changes in Organ and Tissue Mass in Obese and Aging Rats. *Am J Physiol (Regulatory Integrative Comp Physiol)* 282:R890-R899, 2002.
- Bowen H, Mitchell TD, & Harris RBS (Dept. of Foods and Nutr, U of Georgia). Method of Leptin Dosing, Strain, and Group Housing Influence Leptin Sensitivity in High-Fat-Fed Weanling Mice. *AJP-Regul Integr Comp Physiol* 284:R87-R100, 2003.
- Harris RBS, Mitchell TD, & Hebert S (Pennington Biomedical Research Center, Baton Rouge, LA). Leptin-Induced Changes in Body Composition in High Fat-Fed Mice. *AJPRegul Integr Comp Physiol* 284:R87-R100, 2003.
- Anini, Y. and Brubaker, P. L. Role of Leptin in the Regulation of Glucagon-Like Peptide-1 Secretion. *Diabetes* 52:252-259, 2003.
- Blüher, S., Responsiveness to Peripherally Administered Melanocortins in Lean and Obese Mice. *Diabetes* 53:82-90, 2004.
- Brunengraber, D. Z., et al. Influence of diet on the modeling of adipose tissue triglycerides during growth. *Am J Physiol Endocrinol Metab* 285: E917-E925, 2003.
- Challis, B. G., et al. Mice lacking pro-opiomelanocortin are sensitive to high-fat feeding but respond normally to the acute anorectic effects of peptide-YY3-36. *PNAS* 101: 13: 4695- 4700, 2004.
- Cohen, A. W., B. Razani, X. B. Wang, T. P. Combs, T. M. Williams, P. E. Scherer, and M. P. Lisanti. Caveolin-1-deficient mice show insulin resistance and defective insulin receptor protein expression in adipose tissue. *Am J Physiol Cell Physiol* 285: C222-C235, 2003.
- Combs, T. P., et al. A Transgenic Mouse with a Deletion in the Collagenous Domain of Adiponectin Displays Elevated Circulating Adiponectin and Improved Insulin Sensitivity. *Endocrinology* 145:367-383, 2004.
- Conarello, S. L., et al. Mice lacking dipeptidyl peptidase IV are protected against obesity and insulin resistance. *PNAS*, 100:11: 6825-6830, 2003.
- Dhar, M. S., et al. Mice Heterozygous for Atp10c, a Putative Amphipath, Represent a Novel Model of Obesity and Type 2 Diabetes. *J. Nutr.* 134: 799-805, 2004.
- El-Haschimi, K., S. D. Dufresne, M. F. Hirshman, J. S. Flier, L. J. Goodyear, and C. Björbæk. Insulin Resistance and Lipodystrophy in Mice Lacking Ribosomal S6 Kinase 2. *Diabetes* 52:1340-1346, 2003.
- Felipe, F, M. L. Bonet, J. Ribot, and A. Palou. Modulation of Resistin Expression by Retinoic Acid and Vitamin A Status. *Diabetes* 53:882-889, 2004.
- Felipe, F, M.L. Bonet, J. Ribot and A. Palou. Up-regulation of muscle uncoupling protein 3 gene expression in mice following high fat diet, dietary vitamin A supplementation and acute retinoic acid-treatment. *International Journal of Obesity* 27: 60-69, 2003.
- Fu, J., et al. Oleylethanolamide regulates feeding and body weight through activation of the nuclear receptor PPAR. *Nature* 425:90-93, 2003.
- Gavrilova, O., et al. Liver Peroxisome Proliferator-activated Receptor Contributes to Hepatic Steatosis, Triglyceride Clearance, and Regulation of Body Fat Mass. *The Journal of Biological Chemistry* 278:36:34268-34276, 2003.
- Haluzik, M., O. Gavrilova and D. LeRoith. Peroxisome Proliferator-Activated Receptor- Deficiency Does Not Alter Insulin Sensitivity in Mice Maintained on Regular or High-Fat Diet: Hyperinsulinemic-Euglycemic Clamp Studies. *Endocrinology* 145:1662-1667, 2004.
- Hancock, A.A. et al. Antiobesity effects of A-331440, a novel non-imidazole histamine H3 receptor antagonist. *European Journal of Pharmacology* 487:183-197, 2004.
- Hennige, A. M., et al. Upregulation of insulin receptor substrate-2 in pancreatic b cells prevents diabetes. *J. Clin. Invest.* 112:1521-1532, 2003.34.
- Hildebrandt, A. L., D. M. Kelly-Sullivan, S. C. Black. Validation of a high-resolution X-ray computed tomography system to measure murine adipose tissue depot mass in situ and longitudinally. *Journal of Pharmacological and Toxicological Methods* 47: 99- 106, 2002.
- Hileman, S. M., D.D. Pierroz, H. Masuzaki, C. Björbæk, K. El-Haschimi, W. A. Banks, and J. S. Flier. Characterization of Short Isoforms of the Leptin Receptor in Rat Cerebral Microvessels and of Brain Uptake of Leptin in Mouse Models of Obesity. *Endocrinology* 143:775-783, 2002.
- Ishii, M., H. Fei, and J. M. Friedman. Targeted disruption of GPR7, the endogenous receptor for neuropeptides B and W, leads to metabolic defects and adult-onset obesity. *PNAS* 100:18:10540-10545, 2003.
- Joseph, J. W., V. Koshkin, C-Y Zhang, J. Wang, B. B. Lowell, C. B. Chan, and M.B. Wheeler. Uncoupling Protein 2 Knockout Mice Have Enhanced Insulin Secretory Capacity After a High-Fat Diet. *Diabetes* 51:3211-3219, 2002.
- Kim, S., et al. Effects of High-Fat, Angiotensinogen (agt) Gene Inactivation, and Targeted Expression to Adipose Tissue on Lipid Metabolism and Renal Gene Expression. *Horm Metab Res* 34:721-725, 2002.
- Kumar, M. V., T. Shimokawa, T. R. Nagy, and M. D. Lane. Differential effects of a centrally acting fatty acid synthase inhibitor in lean and obese mice. *PNAS* 99:4: 1921-1925, 2002.
- Lambert, P. D., et al. Ciliary neurotrophic factor activates leptin-like pathways and reduces body fat, without cachexia or rebound weight gain, even in leptin-resistant obesity. *PNAS* 98:8: 4652-4657, 2001.
- Le Laya, S., et al. Decreased Resistin Expression in Mice with Different Sensitivities to a High-Fat Diet. *Biochemical and Biophysical Research Communications* 289:2:564-567, 2001.
- Li, J., K. Takaishi, W. Cook, S. K. McCorkle, and R. H. Unger. Insig-1 "brakes" lipogenesis in adipocytes and inhibits differentiation of preadipocytes. *PNAS* 100:16:9476-9481, 2003.
- Ludwig, D. S., et al. Melanin-concentrating hormone overexpression in transgenic mice leads to obesity and insulin resistance. *J. Clin. Invest.* 107:379-386, 2001.
- Moon, Y. S., et al. Mice Lacking Paternally Expressed Pref-1/Dlk1 Display Growth Retardation and Accelerated Adiposity. *Molecular And Cellular Biology* 22:15: 5585-5592, 2002.
- Murray, I., A. D. Sniderman, P. J. Havel, and K. Cianflonei. Acylation Stimulating Protein (ASP) Deficiency Alters Postprandial and Adipose Tissue Metabolism in Male Mice. *The Journal Of Biological Chemistry* 274:51:36219-36225, 1999.
- Phan,L. K., F. Lin, C. A. LeDuc, W. K. Chung, and R. L. Leibel. The mouse mahoganoid coat color mutation disrupts a novel C3HC4 RING domain protein. *J. Clin. Invest.* 110:1449-1459, 2002.
- Pierroz, D. D., M. Ziotopoulou, L. Ungsusan, S. Moschos, J. S. Flier, and C. S. Mantzoros. Effects of Acute and Chronic Administration of the Melanocortin Agonist MTII in Mice With Diet-Induced Obesity. *Diabetes* 51:1337-1345, 2002.
- Rosenfeld, C. S., K. M. Grimm, K. A. Livingston, A. M. Brokman, W. E. Lamberson, and R. M. Roberts. Striking variation in the sex ratio of pups born to mice according to whether maternal diet is high in fat or carbohydrate. *PNAS* 100:8:4628-4632, 2003.
- Chirala, S. S., et al. Fatty acid synthesis is essential in embryonic development: Fatty acid synthase null mutants and most of the heterozygotes die in utero. *PNAS* 100:11:6358-6363, 2003.
- Takahashi, N., et al. Divergent Effects of Leptin in Mice Susceptible or Resistant to Obesity. *Horm Metab Res* 34:691-697, 2002.
- Thupari, J. N., L. E. Landree, G. V. Ronnett, and F. P. Kuhajda. C75 increases peripheral energy utilization and fatty acid oxidation in diet-induced obesity. *PNAS* 99:14:9498-9502, 2002.
- Tortoriello, D. V., J. McMinn, and S. C. Chua. Dietary-Induced Obesity and Hypothalamic Infertility in Female DBA/2j Mice. *Endocrinology* 145: 1238-1247, 2004.
- Weisberg, S. P., et al. Obesity is associated with macrophage accumulation in adipose tissue. *J. Clin. Invest.* 112:1796-1808, 2003.
- Xu, H. et al. Chronic inflammation in fat plays a crucial role in the development of obesity related insulin resistance. *J. Clin. Invest.* 112:1821-1830, 2003.
- Yamashita, T., et al. Enhanced insulin sensitivity in mice lacking ganglioside GM3. *PNAS* 100:6:3445-3449, 2003.
- Bagnasco, M., M. G. Dube, A. Katz, P. S. Kalra, and S. P. Kalra. Leptin Expression In Hypothalamic Pvn Reverses Dietary Obesity And Hyperinsulinemia But Stimulates Ghrelin. *Obes Res.* 11:1463-1470, 2003.
- Borowsky, B., et al. Antidepressant, anxiolytic and anorectic effects of a melaninconcentrating hormone-1 receptor antagonist. *Nature Medicine* 8:8:825-830, 2002.
- Chan, C. B., et al. Increased Uncoupling Protein-2 Levels in b-cells Are Associated With Impaired Glucose-Stimulated Insulin Secretion. *Diabetes* 50:1302-1310, 2001.
- Chen, L. and B. L. G. Nyomba. Glucose Intolerance and Resistin Expression in Rat Offspring Exposed to Ethanol in Utero: Modulation by Postnatal High-Fat Diet. *Endocrinology* 144:500-508, 2003.
- Farley, C., J. A. Cook, B. D. Spar, T. M. Austin, and T. J. Kowalski. Meal Pattern Analysis Of Diet-Induced Obesity In Susceptible And Resistant Rats. *Obes Res.* 11:845-851, 2003.
- Gao, J., L. Ghibaudi, M. Van Heek, J. J. Hwa. Characterization of diet-induced obese rats that develop persistent obesity after 6 months of high-fat followed by 1 month of low-fat diet. *Brain Research* 936:87-90, 2002.
- Ogilvie, K. M., R. Saladin, T. R. Nagy, M. S. Urcan, R. A. Heyman, and M. D. Leibowitz. Activation of the Retinoid X Receptor Suppresses Appetite in the Rat. *Endocrinology* 145:565-573, 2004.
- Shklyav, S., et al. Sustained peripheral expression of transgene adiponectin offsets the development of diet-induced obesity in rats. *PNAS* 100:24:14217-14222, 2003.
- Hildebrandt, A. L., D. M. Kelly-Sullivan, S. C. Black. Antiobesity effects of chronic cannabinoid CB1 receptor antagonist treatment in diet-induced obese mice. *European Journal of Pharmacology* 462:125-132, 2003.