



**Description**

11 kcal% fat w/sucrose Surwit Diet

**Used in Research**

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**

NON-STOCK- 10 working days

**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 3-6 months.

**Control Diets**

Used as a control diet for D12331

**Formula**

Product #	D12329	
	gm%	kcal%
Protein	16.8	16.4
Carbohydrate	74.3	73.1
Fat	4.8	10.5
	<b>Total kcal/gm</b>	100.0
	4.07	
Ingredient	gm	kcal
Casein, 80 Mesh	228	912
DL-Methionine	2	0
Maltodextrin 10	170	680
Corn Starch	0	0
Sucrose	835	3340
Soybean Oil	25	225
Coconut Oil, Hydrogenated	40	360
Mineral Mix S10001	40	0
Sodium Bicarbonate	10.5	0
Potassium Citrate, 1 H2O	4	0
Vitamin Mix V10001	10	40
Choline Bitartrate	2	0
FD&C Blue Dye #1	0.1	0
<b>Total</b>	<b>1366.6</b>	<b>5557</b>

Professor Richard Surwit designed these diets with us for his diet-induced obesity studies at Duke University.

Diets match 10/27/92 telephone specifications of R. Surwit, Ph. D., Duke University. Formulated by E. A. Ulman, Ph.D., Research Diets, Inc. November 6, 1992.



# REFERENCES

2/15/06

## D12328, D12329, D12330 and D12331

1. Bachman, E.S., et al.  $\beta$ AR signaling required for diet-induced thermogenesis and obesity resistance. *Science*. 297:843-845, 2002.
2. Baffy, G., et al. Obesity-related fatty liver is unchanged in mice deficient for mitochondrial uncoupling protein 2. *Hepatology*. 35:753-761, 2002.
3. Bale, T.L., et al. Corticotropin-releasing factor receptor-2-deficient mice display abnormal homeostatic responses to challenges of increased dietary fat and cold. *Endocrinology*.
4. Brownlow, B., et al. The role of motor activity in diet-induced obesity in C57BL/6J mice. *Physiology & Behavior*. 60:37-41, 1996.
5. Collins, Sheila & Surwit, Richard. Pharmacologic manipulation of ob expression in a dietary model of obesity. *The Journal of Biological Chemistry*. 271:9437-9440, 1996.
6. Collins, S., et al. Genetic variation to diet-induced obesity in the C57BL/6J mouse: physiological and molecular characteristics. *Physiology & Behavior*. 81:243-248, 2004.
7. Fruebis, J., et al. Proteolytic cleavage product of 30-kDa adipocyte complement-related protein increases fatty acid oxidation in muscle and cause weight loss in mice. *PNAS*. 98:2005-2010, 2001.
8. Gimeno, R.E., et al. Targeted deletion of fatty acid transport protein-4 results in early embryonic lethality. *The Journal of Biological Chemistry*. 278:49512-49516, 2003.
9. Guerra, C., et al. Emergence of brown adipocytes in white fat mice is under genetic control. *Journal of Clinical Investigation*. 102:412-420, 1998.
10. Hohmann, J.G., et al. Obesity and endocrine dysfunction in mice with deletions of both neuropeptide Y and galanin. *Molecular and Cellular Biology*. 24:2978-2985, 2004.
11. Ishihara, Y., et al. Effects of diet and time of day on serum and CSF leptin levels in Osborne-Mendel and S5B/PI rats. *Obesity Research*. 12:1067-1076, 2004.
12. Kim, J., et al. Inactivation of fatty acid transport protein 1 prevents fat-induced insulin resistance in skeletal muscle. *The Journal of Clinical Investigation*. 113:756-763, 2004.
13. Lenhard, J., et al. Dietary fat alters HIV protease inhibitor-induced metabolic changes in mice. *Journal of Nutrition*. 130:2361-2366, 2000.
14. Liu, X., et al. Paradoxical resistance to diet-induced obesity in UCP1-deficient mice. *Journal of Clinical Investigation*. 111:399-407, 2003.
15. Morton, N., et al. Novel adipose tissue-mediated resistance to diet-induced visceral obesity in 11 $\beta$ -hydroxysteroid dehydrogenase type 1-deficient mice. *Diabetes*. 53:931-938, 2004.
16. Münzberg, H. Region-specific leptin resistance within the hypothalamus of diet-induced obese mice. *Endocrinology*. 145:4880-4889, 2004.
17. Paterson, J.M., et al. Metabolic syndrome without obesity: hepatic overexpression of 11 $\beta$ -hydroxysteroid dehydrogenase type 1 in transgenic mice. *PNAS*. 101:7088-7093, 2004.
18. Petro, A.E., et al. Fat, carbohydrate, and calories in the development of diabetes and obesity in the C57BL/6J mouse. *Metabolism*. 53:454-457, 2004.
19. Pittner, R.A. Effects of PYY[3-36] in rodent models of diabetes and obesity. *International Journal of Obesity*. 28:963-971, 2004.
20. Prpic, V., et al. Differential Mechanisms and development of leptin resistance in A/J versus C57BL/6J mice during diet-induced obesity. *Endocrinology*. 144:1155-1163, 2002.
21. Prpic, V., et al. Adaptive changes in adipocyte gene expression differ in AKR/J and SWR/J mice during diet induced obesity. *Journal of Nutrition*. 132:3325-3332, 2002.
22. Rossmeisl, M., et al. Variation in type 2 diabetes-related traits in mouse strains susceptible to diet-induced obesity. *Diabetes*. 52:1958-1966, 2003.
23. Surwit, R.S., et al. Diazoxide restores  $\beta$ 3-adrenergic receptor function in diet-induced obesity and diabetes. *Endocrinology*. 141:3630-3637.
24. Surwit, R.S., et al. Diet-induced changes in uncoupling proteins in obesity-prone and obesity-resistant strains of mice. *Proc. Natl. Acad. Sci. USA*. 95:4061-4065, 1998.
25. Szcypka, M.S., et al. Feeding behavior in dopamine-deficient mice. *PNAS*. 96:12138-12143, 1999.
26. Tsai, Yau-Sheng, et al. Hypertension and abnormal fat distribution but not insulin resistance in mice with P465L PPAR $\gamma$ . *The Journal for Clinical Investigation*. 114:241-249, 2004.
27. Tsukiyama-Kohara, Kyoko, et al. Adipose tissue reduction in mice lacking the translational inhibitor 4E-BP1. *Nature Medicine*. 7:1128-1132, 2001.
28. Vigliotta, G., et al. Overexpression of the ped/pea-15 gene causes diabetes by impairing glucose-stimulated insulin secretion in addition to insulin action. *Molecular and Cellular Biology*. 24:5005-5015, 2004.
29. Watson, P.A., et al. Differential regulation of leptin expression and function in A/J/ vs. C57BL/6J mice during diet-induced obesity. *Am. J. Physiol. Endocrinol Metab*. 279:E356-E365, 2000.
30. Williams, T.D., et al. Diet-induced obesity and cardiovascular regulation in C57BL/6J mice. *Clinical and Experimental Pharmacology and Physiology*. 30:769-778, 2003.
31. Yu, X.X., et al. Characterization of a novel UCP5/BMCP1 isoforms and differential regulation of UCP5 and UCP5 expression through dietary or temperature manipulation. *FASEB J*. 14:1611-1618, 2000.
32. Yuan, M., et al. Reversal of obesity- and diet-induced insulin resistance with salicylates or targeted disruption of IKK $\beta$ . *Science*. 293:1673-1677, 2001.
33. Zvonic, Sanjin, et al. The regulation and activation of ciliary neurotrophic factor signaling proteins in adipocytes. *The Journal of Biological Chemistry*. 278:2228-2235, 2003.