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## TECHNICAL INFORMATION

Catalog Number: 960253, 960254  
**4% Protein Diet**

**Note:** Protein Test Diets do not contain sufficient Methionine at the 8, 12, and 20% levels. Supplementation with Methionine will greatly increase the health of the animal. See Low Renal Load Diet, catalog # 960330 and #960331 for 8% protein and the Low Protein Maintenance Diet, catalog # 960367 and # 960368 for the 12% protein level. See the AIN-76A diet for a similar diet with 20% protein.

Typically provides 3.75 kcal/gm diet.

### Composition:

Ingredient	Amount
Casein Purified High Nitrogen	4.59771%
Corn Starch	15.00000%
Sucrose	63.10345%
Corn Oil	4.95403%
Alphacel, Non-nutritive bulk	7.34481%
AIN-76 Mineral Mix	4.00000%
Calcium Phosphate Dibasic	500.00 gm/kg mix
Sodium Chloride	74.00 gm/kg mix
Potassium Citrate Monohydrate	220.00 gm/kg mix
Potassium Sulfate	52.00 gm/kg mix
Magnesium Oxide	24.00 gm/kg mix

Manganese Carbonate (43-48% Mn)	3.50 gm/kg mix
Ferric Citrate (16-17% Fe)	6.00 gm/kg mix
Zinc Carbonate (70% ZnO)	1.60 gm/kg mix
Cupric Carbonate (53-55% Cu)	0.30 gm/kg mix
Potassium Iodate	0.01 gm/kg mix
Sodium Selenite	0.01 gm/kg mix
Chromium Potassium Sulfate	0.55 gm/kg mix
Sucrose, finely powdered	118.00 gm/kg mix
Plus MP Vitamin Diet Fortification Mixture	1.0%

**Availability:**

<i>Catalog Number</i>	<i>Description</i>	<i>Size</i>
960253	Powdered	10 kg 20 kg 50 kg
960254	Pelleted	10 kg 20 kg 50 kg

**References:**

- Cooper, C.W., Mariani, R.N. and Good, R.A., "The effects of protein deprivation on cell-mediated immunity." *Birth Defects*, v. **11**, 223-228 (1975).
- Cooper, C.W., Good, R.A. and Mariani, T., "Effects of protein insufficiency on immune responsiveness." *Am. J. Clin. Nutr.*, v. **27**, 647-664 (1974).
- Kramer, T.R. and Good, R.A., "Increased in vitro cell-mediated immunity in protein-malnourished guinea pigs." *Clin. Immunol.*, v. **11**, 212-228 (1978).
- Kenney, M.A., Roderick, C.E., Arrrich, L., and Piedad, F., "Effect of protein deficiency on the spleen and antibody formation in

rats." *J. Nutr.*, **v. 95**, 173-178 (1968).

– Law, D.K., Dudrick, S.J. and Abdou, N.I., "The effect of dietary protein depletion on immunocompetence: The importance of nutritional repletion prior to immunologic induction." *Ann. Surg.*, **v. 179**, 168-173 (1974).

– Worthington, B.S., "Effect of nutritional status on immune phenomena." *J. Am. Diet. Assoc.*, **v. 65**, 123-129 (1974).

– Kaggwa, J.S., "The effect of protein and energy deficiency on skin glycosaminoglycan levels in the rat." *Br. J. Nutr.*, **v. 56:2**, 329-339 (1986).

– Munoz-Martinez, E., Marcos, A., Unzaga, M.T. and Varela, G., "[Changes in hydrolytic lysosomal enzymes of liver associated with protein and protein-calorie malnutrition](Cambios en enzimas lisosomicos hidroliticos del higado asociados a malnutricion proteica y calorico-proteica)" *Rev. Esp. Fisiol.*, **v. 38 Suppl.**, 327-333 (1982).

– Rees, W.D., Hay, S.M., Buchan, V., Antipatis, C. and Palmer, R.M., "The effects of maternal protein restriction on the growth of the rat fetus and its amino acid supply." *Br. J. Nutr.*, **v. 81:3**, 243-250 (1999).

– Kalla, N.R., Dingley, P. and Ranga, A., "Effect of gossypol on rats maintained on protein deficient and low potassium diets." *Acta Eur. Fertil.*, **v. 21:2**, 85-89 (1990).

– Carter, W.J., Faas, F.H., Perry, C.A. and Lynch, M.E., "Comparison of the effect of a protein-free and restricted high protein-low carbohydrate diet on ventricular myosin ATPase activity and isomyosin profile in young rats: evidence that protein-depleted animals are euthyroid." *J. Nutr.*, **v. 117:12**, 2142-2146 (1987).

– Moreland, R.S., Webb, R.C. and Bohr, D.F., "Vascular changes in DOCA hypertension. Influence of a low protein diet." *Hypertension*, **v. 4:5 Pt 2**, III99-107 (1982).

– Mayel-Afshar, S., Grimble, R.F., "Changes in protein turnover during gestation in the foetuses, placentas, liver, muscle and whole body rats given a low-protein diet." *Biochim. Biophys. Acta*, **v. 756:2**, 182-190 (1983).

– Cahill-Morasco, R., Hoffman, R.S. and Goldfrank, L.R., "The effects of nutrition on plasma cholinesterase activity and cocaine toxicity in mice." *J. Toxicol. Clin. Toxicol.*, **v. 36:7**, 667-672 (1998).