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TECHNICAL INFORMATION

Catalog Number: 960073, 960074
Vitamin D Free Diet, Rat

Advantages of the "Vitamin D Free Diet for Rats," developed by S.U. Toverud, based on A. Boass, S.U. Toverud, T.A. McCain, J.W. Pike, and M.R. Haussler, *Nature*, v. **267**: 630 (1977); S.U. Toverud, *Acta Physiol. Scand.*, v. **62**: 391 (1964); F.C. Gran, *Acta Physiol. Scand.*, v. **48**: Suppl. 167 (1960). The diet contains all nutrients (except Vitamin D) required by the rat, and when cholecalciferol is added (5 IU/gm diet), the diet provides growth and reproduction equal to that of commercial stock diets. Using whole wheat as the source of carbohydrate the rats experience better growth and development than with mono or disaccharides. There is some evidence, however, to suggest that Vitamin D depletion may occur more rapidly with sucrose as the carbohydrate source. The calcium content of the diet can be varied by changing the amount of CaCO₃ added. The phosphorous content can be increased from approximately 0.35% (the wheat flour contains most of the phosphorous and the casein a small and variable amount) by the addition of potassium diphosphate. When the D deficient diet (which contains 0.4% Ca and 0.4% P) is given to rats (Holtzman Co.) at the end of the first week of pregnancy, the suckling pups show evidence of hypocalcemic, hypophosphatemic rickets at age 15-21 days, as described in A. Boass, W.K. Ramp, and S.U. Toverud: New studies indicate a Glucose diet combined with Calcium restriction or Vitamin D deprivation interferes with the adaptive increase in plasma 1, 25 (OH)₂ D₃.

Clark, S.A., A. Boass and S.U. Toverud, *Bone and Mineral*, 291-302 (1989).

Composition:

| Ingredient | Amount |
|--|--------------------|
| Vitamin Free Casein | 13.0% |
| Whole Wheat Flour | 75.0% |
| Corn Oil | 3.0% |
| Alphacel, Non-Nutritive Bulk | 5.0% |
| Calcium Carbonate | 0.8% |
| Calcium Phosphorous Free Salt Mixture (Gran. 1960) | 2.0% |
| Potassium Chloride | 13.3885 gm/kg diet |
| Sodium Chloride | 4.8456 gm/kg diet |
| Magnesium Chloride | 0.9302 gm/kg diet |
| Manganese Sulfate | 0.0117 gm/kg diet |
| Aluminum Sulfate | 0.0047 gm/kg diet |

| | |
|---|-------------------|
| Copper Sulfate | 0.0272 gm/kg diet |
| Sodium Fluoride | 0.0272 gm/kg diet |
| Ferric Citrate (16-17% Fe) | 0.7473 gm/kg diet |
| Cobalt Acetate | 0.0014 gm/kg diet |
| Potassium Iodide | 0.0019 gm/kg diet |
| Plus MP Vitamin Diet Fortification Mixture except Vitamin D | 1.3% |

Availability:

| <i>Catalog Number</i> | <i>Description</i> | <i>Size</i> |
|-----------------------|--------------------|-------------------------|
| 960073 | Powdered | 10 kg 20 kg 50 kg |
| 960074 | Pelleted | 10 kg 20 kg 50 kg |

[Suggested Control Diet is the Vitamin D Control Diet for Rats, # 960225 \(powdered\) or 960226 \(pelleted\)](#)