**Supplementary File 1**

**Supplementary Table 1.** Composition of the experimental diets utilized in the study.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ingredient** | **WD-****VAD****(g/kg diet)** | **WD-****β-carotene****(g/kg diet)** | **Standard-****VAD****(g/kg diet)** | **Standard-****β-carotene****(g/kg diet)** |
| **Casein** | 200 | 200 | 200 | 200 |
| **L-Cysteine** | 3 | 3 | 3 | 3 |
| **Corn starch**  | 72.8 | 72.8 | 319 | 319 |
| **Maltodextrin** | 100 | 100 | 100 | 100 |
| **Sucrose** | 212 | 212 | 212 | 212 |
| **Cellulose** | 50 | 50 | 50 | 50 |
| **Soybean oil** | 25 | 25 | 70 | 70 |
| **Lard** | 160 | 160 | 0 | 0 |
| **t-Butylhydroquinone**  | 0 | 0 | 0 | 0 |
| **Choline bitartrate**  | 2 | 2 | 2 | 2 |
| **Dicalcium phosphate**  | 13 | 13 | 13 | 13 |
| **Calcium carbonate**  | 5.5 | 5.5 | 5.5 | 5.5 |
| **Potassium citrate monohydrate**  | 16.5 | 16.5 | 16.5 | 16.5 |
| **Cholesterol** | 3.08 | 3.08 | 0 | 0 |
| **Mineral mix** | 10 | 10 | 35 | 35 |
| **Vitamin mix, no added vitamin A** | 10 | 10 | 10 | 10 |
| **Placebo beadlets** | 0.5 | 0 | 0.5 | 0 |
| **β-carotene beadlets, 10% β-carotene** | 0 | 0.5 | 0 | 0.5 |

# 1 Footnotes. IU: International unit. WD, Western diet; VAD; Vitamin A deficient; IU, international units.