# Supplementary information

Table S1 Composition of the AIN-93G and modified AIN-93G diets

|  |  |  |
| --- | --- | --- |
|  | % abundance (weight / weight)\* | |
|  | AIN-93G  (normal diet) | Modified AIN-93G  (low-niacin diet) |
| Milk caseins | 20.0 | 20.0 |
| L‐cysteine | 0.3 | 0.3 |
| Cornstarch | 39.7 | 39.7 |
| α-Cornstarch | 13.2 | 13.2 |
| Sucrose | 10.0 | 10.0 |
| Soybean oil | 7.0 | 7.0 |
| Cellulose powder | 5.0 | 5.0 |
| AIN-93G mineral | 3.5 | 3.5 |
| AIN-93G or modified AIN-93G vitamin | 1.0 | 1.0 |
| Choline bitartrate | 0.3 | 0.3 |
| tertiary butylhydroquinone | <0.1 | <0.1 |

\*These data were provided from Oriental BioService.

Table S2 Vitamin composition of the AIN-93G and modified AIN-93G diets

|  |  |  |
| --- | --- | --- |
|  | Abundance (per 100g of each diet)\* | |
|  | AIN-93G  (normal diet) | Modified AIN-93G  (low-niacin diet) |
| Vitamin A (IU) | 400 | 400 |
| Vitamin A (IU) | 100 | 100 |
| Vitamin E (mg) | 7.5 | 7.5 |
| Vitamin K1 (μg) | 75 | 75 |
| Vitamin K3 (μg) | 10.0 | 10.0 |
| Vitamin B1 (mg) | 0.6 | 0.6 |
| Vitamin B2 (mg) | 0.6 | 0.6 |
| Vitamin B6 (mg) | 0.7 | 0.7 |
| Vitamin B12 (μg) | 2.5 | 2.5 |
| Biotin (μg) | 20.0 | 20.0 |
| Folic acid (mg) | 0.2 | 0.2 |
| Calcium pantothenate (mg) | 1.6 | 1.6 |
| **Nicotinic Acid (mg)** | **3.0** | **0.0\*\*** |
| Choline bitartrate (g) | 0.25 | 0.25 |

\*These data were provided from Oriental BioService.

\*\*Although nicotinic acid is not present, nicotinamide as niacin and its precursor (tryptophan) are contained in modified AIN-93G (low-niacin diet).

Figure S1. The maximal absorption wavelength (λmax) of the extracted dye. The dye was extracted from paper strips and purified using an InertSep MA-2 column. After purification, the absorbance of the extract was measured using a 96-well microplate reader. The λmax was 520 nm.



Figure S2. Carminic acid was extracted from 10 mg of paper strips using 2 ml of elution buffer and purified using an InertSep MA-2 column. Samples combining stained and unstained paper strips were used to generate a standard curve.

