

«Методология научного эксперимента»

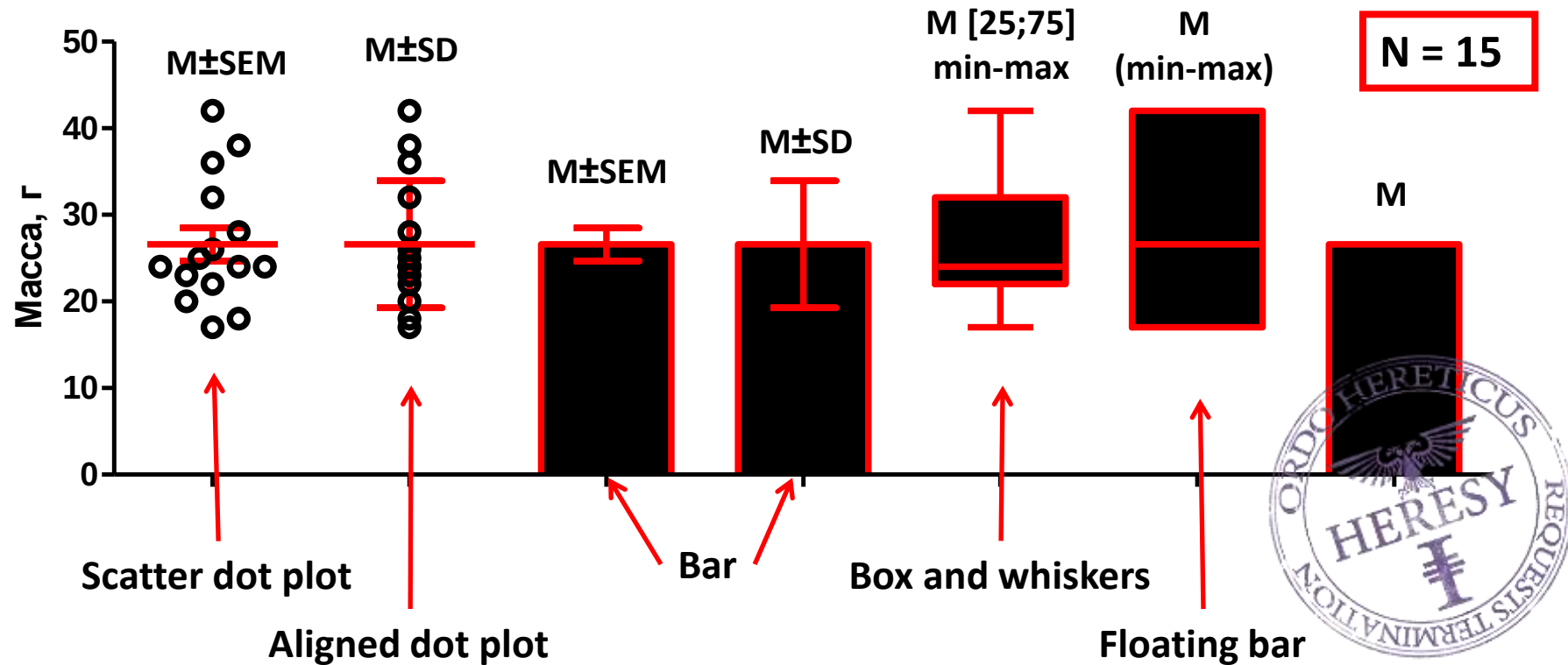
Курс лекций кафедры фундаментальной медицины и биологии ВолгГМУ
для студентов медико-биологического факультета



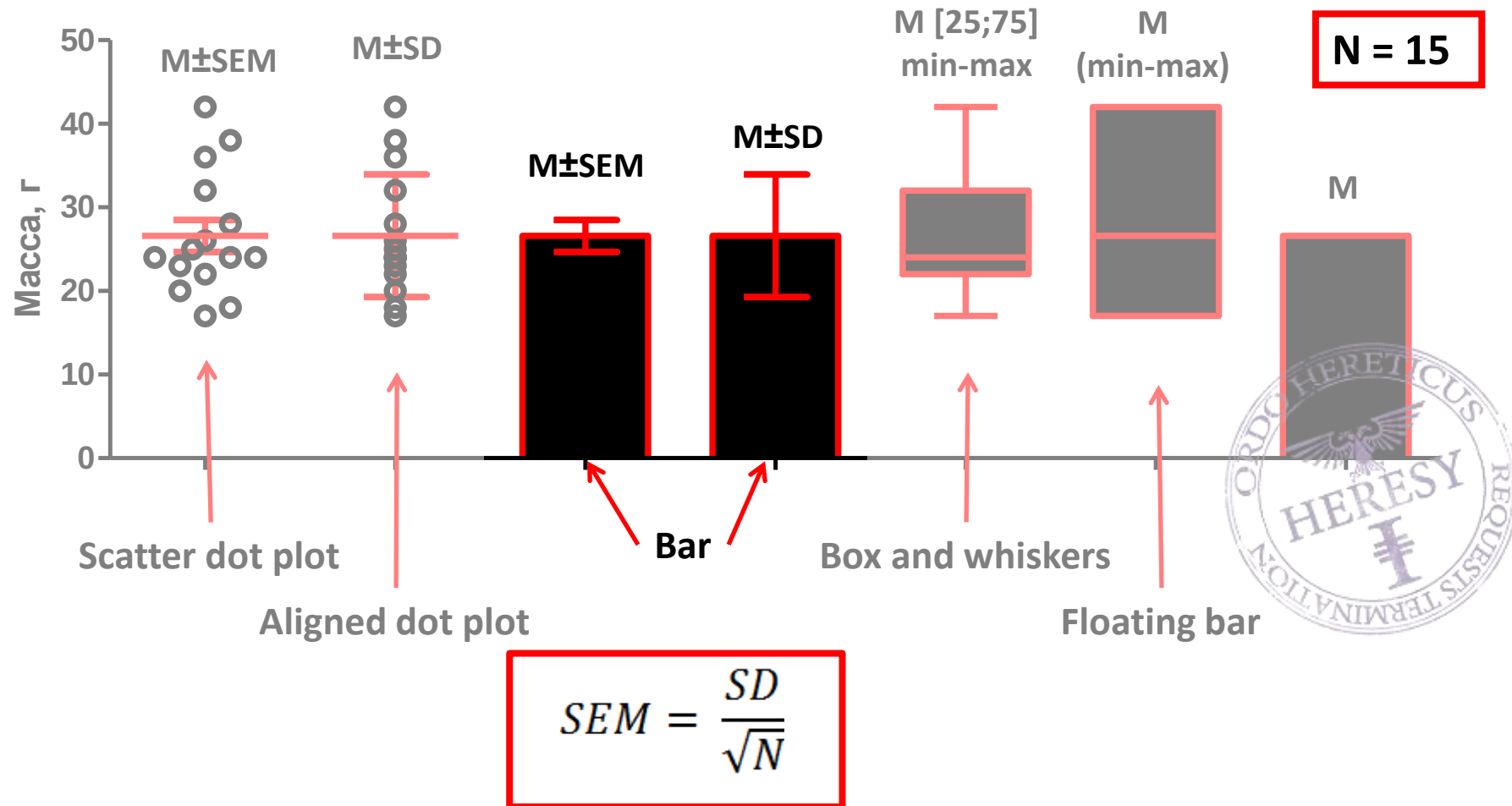
Тема лекции:

«Представление результатов эксперимента.
Графическое и наглядное отображение результатов»

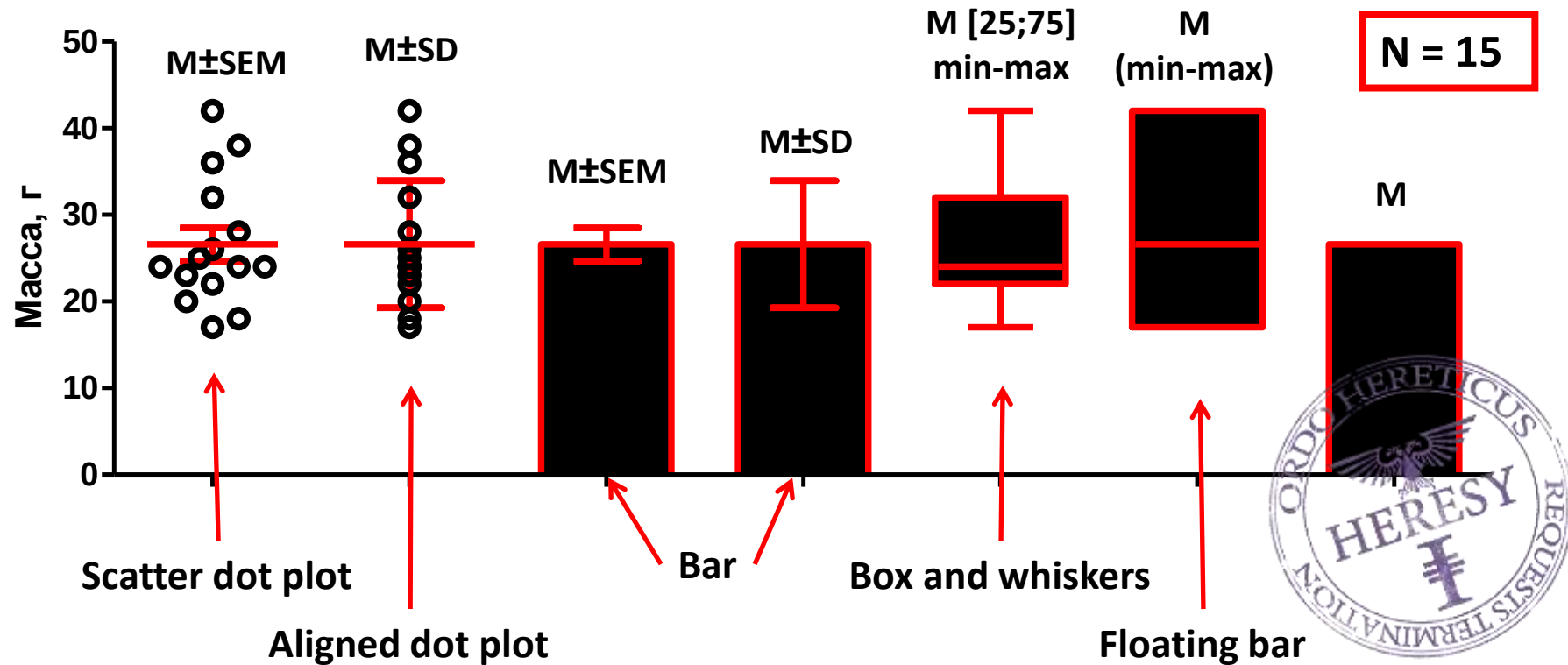
Какими способами можно представить одни и те же данные?



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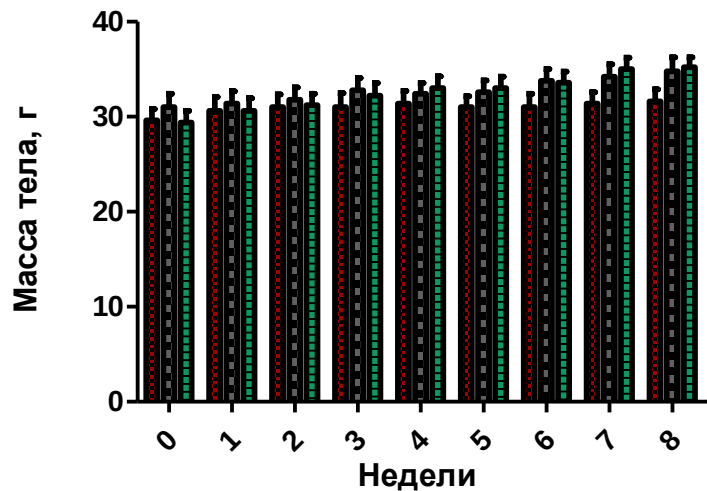
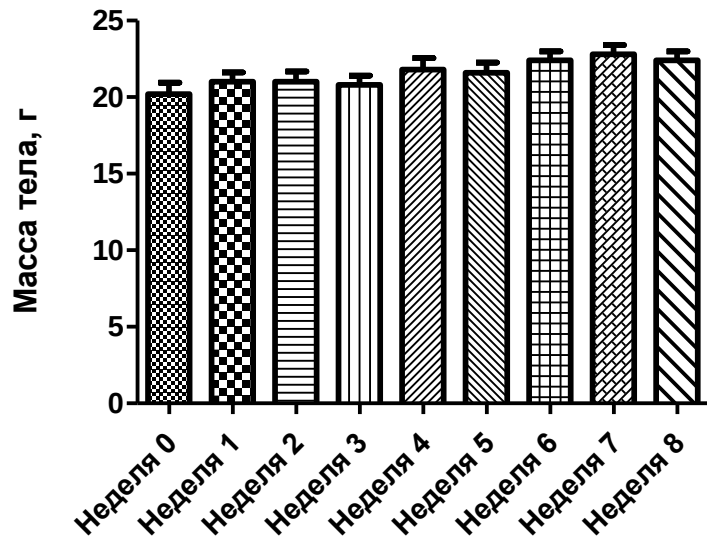
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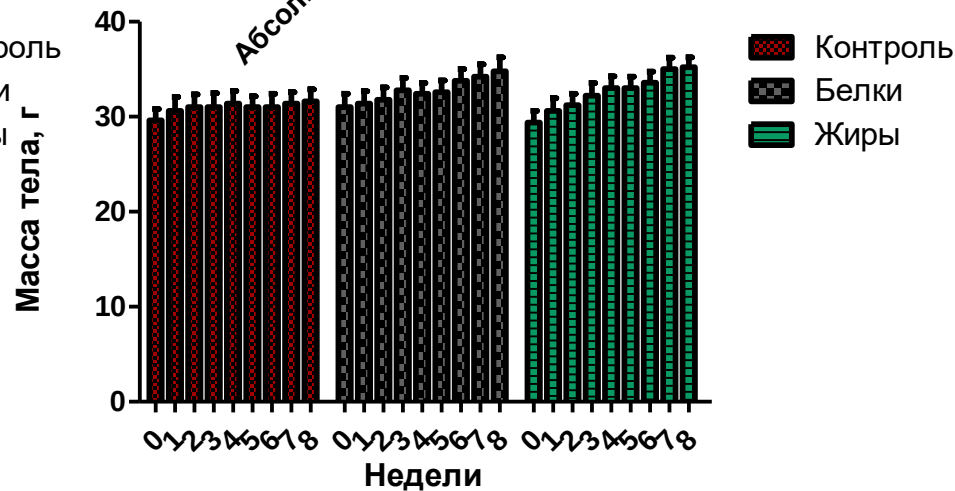
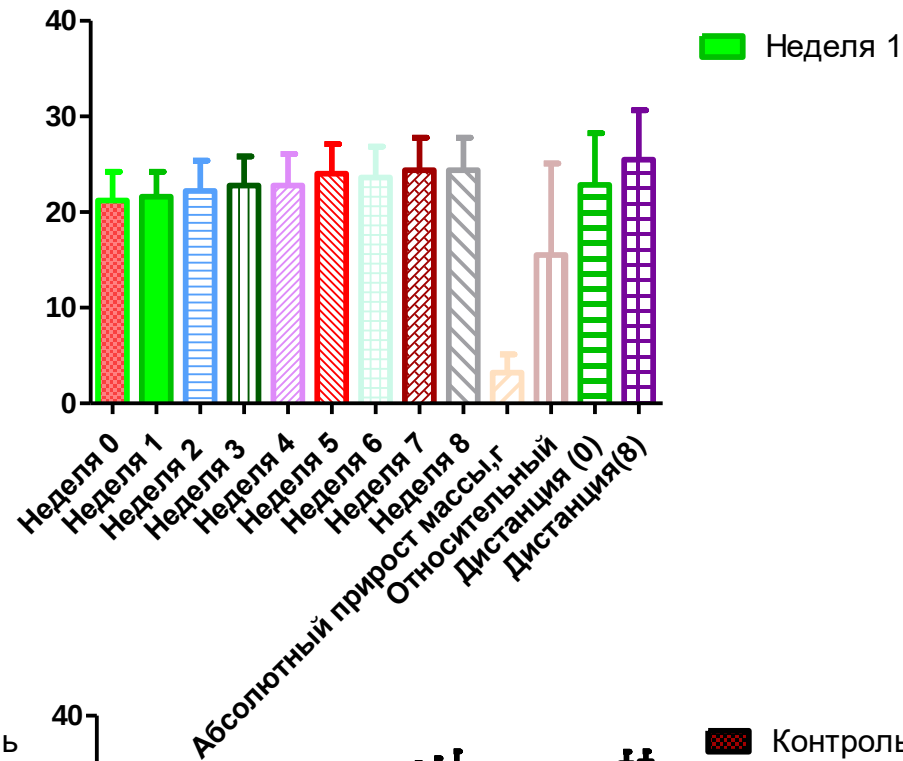
Эти способы подходят для единичных измерений.

Но что делать, если нужно отследить динамику какого-либо явления?

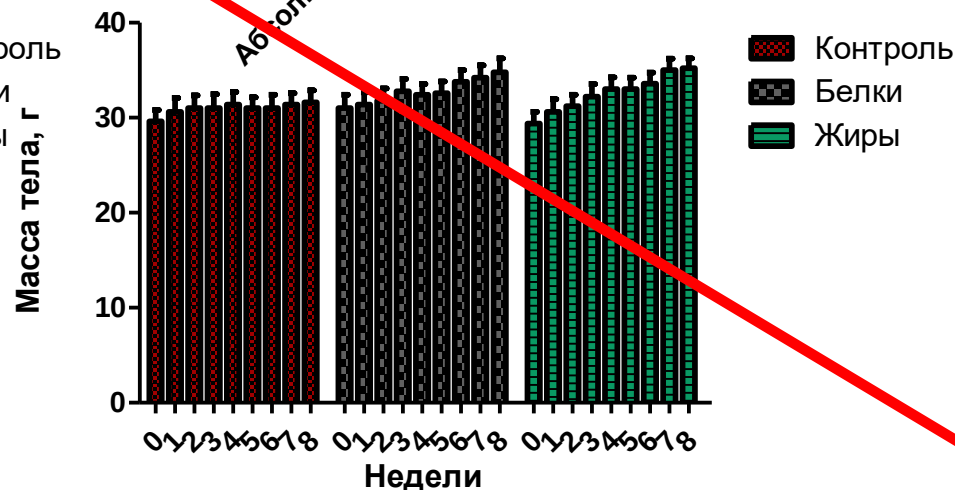
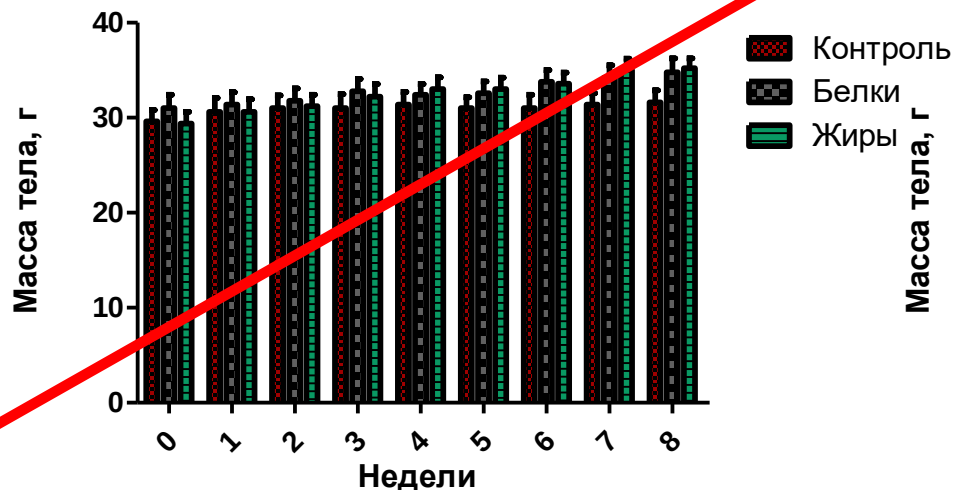
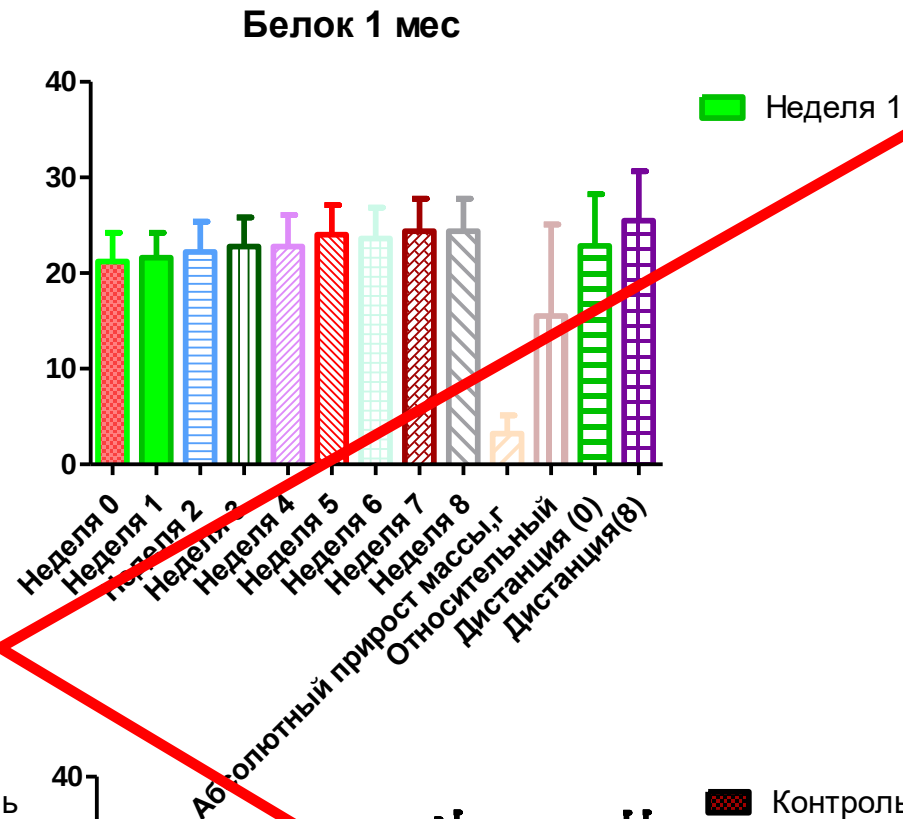
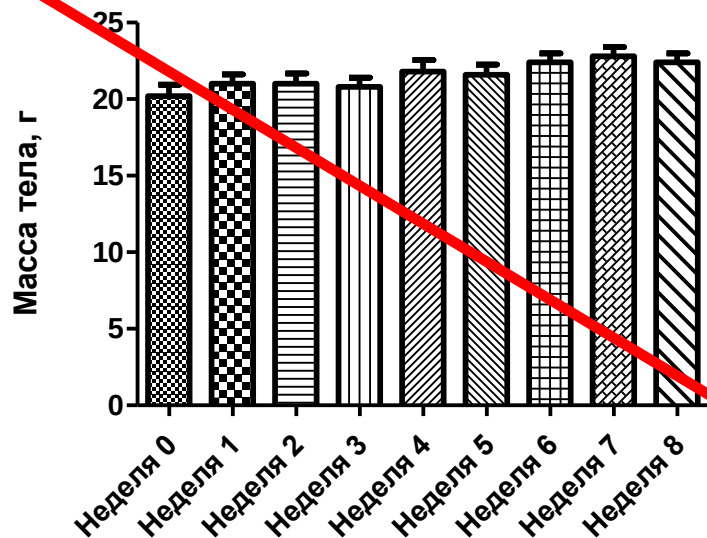
Как описать динамику?



Белок 1 мес

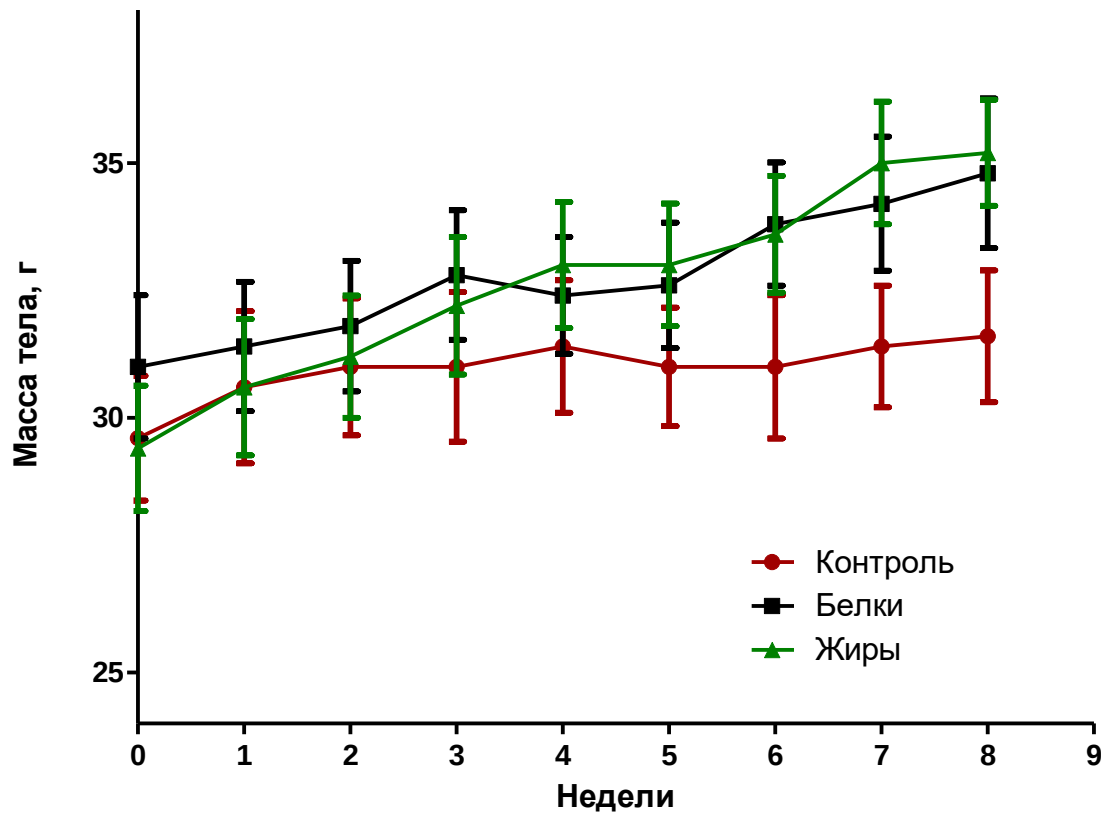


Как описать динамику?

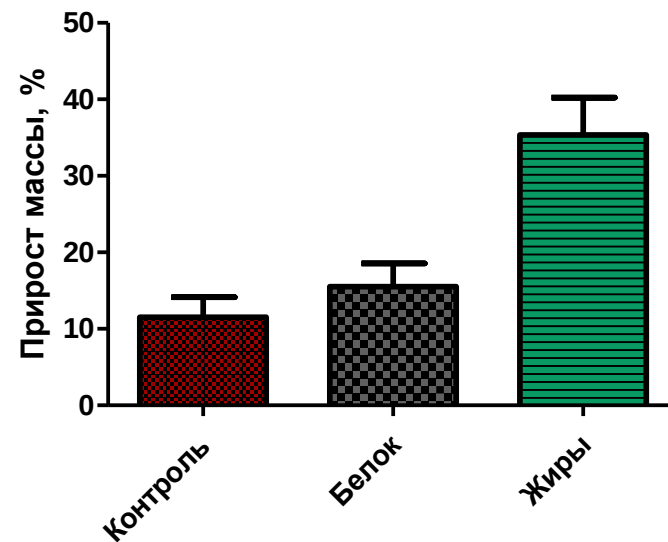


Как описать динамику?

Динамика массы тела



Относительный прирост массы тела



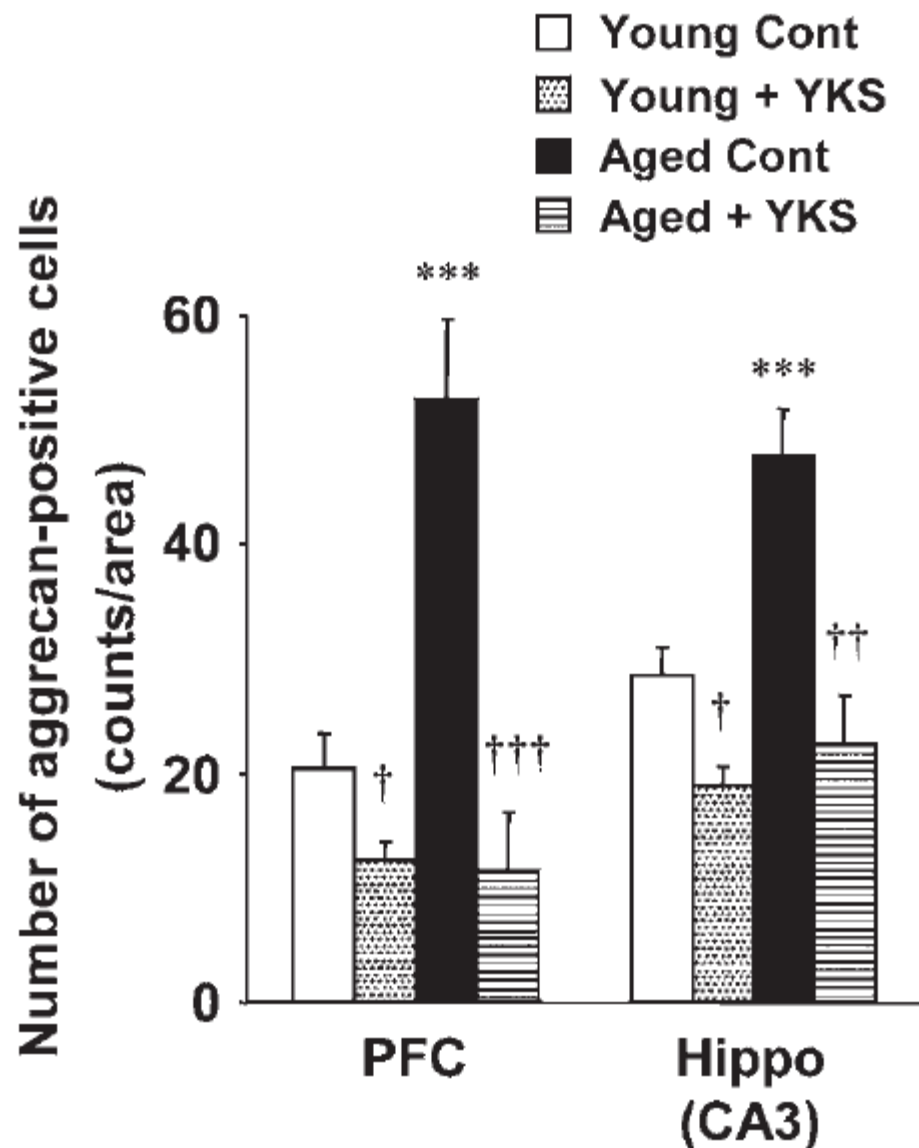


Fig. 3. Influence of aging and effect of YKS treatments on the number of aggrecan-positive cells in the motor cortical region of the PFC and in the CA3 subfield of the hippocampus of rats. Each column is the mean $\pm$ SEM of six rats per group. Asterisks indicate a significant difference between young control and aged control rats, *** $P < 0.001$.

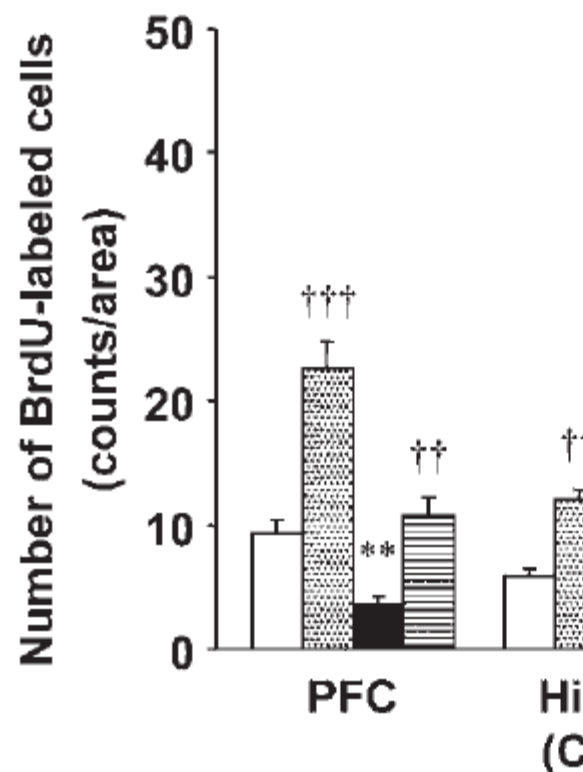


Fig. 5. Influence of aging and effect of YKS treatments on the number of BrdU-labeled cells in the motor cortical region of the PFC and in the CA3 subfield of the hippocampus, and dentate gyrus of rats. Each column is the mean $\pm$ SEM of six rats per group. Asterisks indicate a significant difference between young control and aged control rats, ** $P < 0.01$. Daggers indicate a significant difference between young control and YKS-treated in young or aged rats, ††† $P < 0.001$.

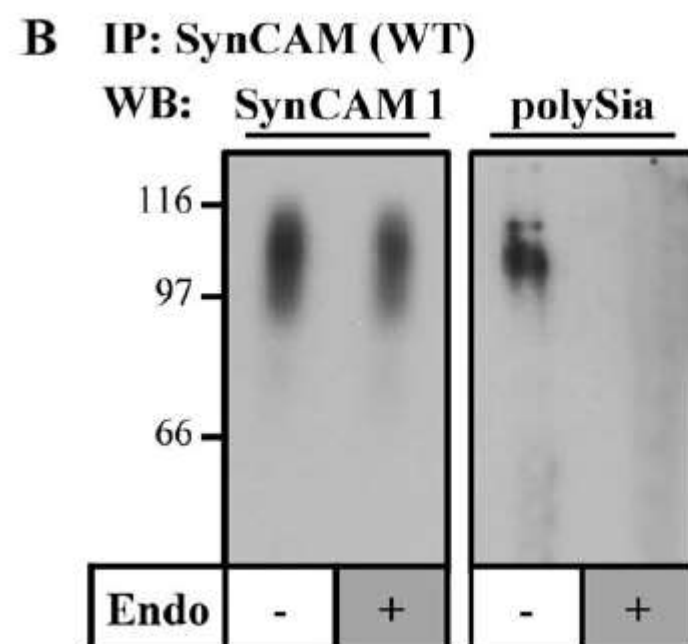
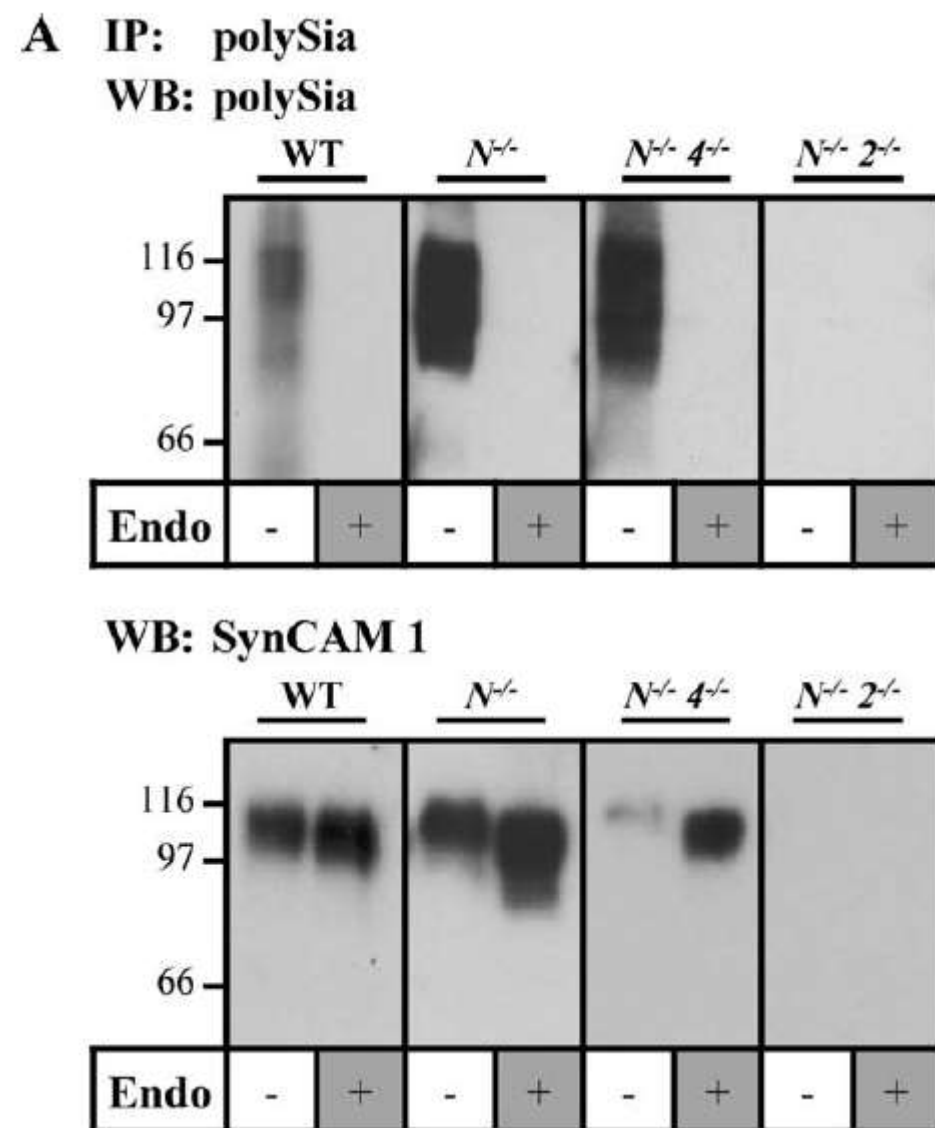


FIGURE 4: SynCAM 1 is polysialylated in murine OPCs ST8SIA2. (A) Immunoprecipitation (IP) with polySia-sp 735-conjugated magnetic beads followed by Western analysis of total polysialylated proteins from OPC cultures of the indicated genotype (see legend of Fig. 1). (B) IP with SynCAM-specific pAb-conjugated magnetic beads from enriched WT cultures followed by Western blot analysis. (C) SDS-PAGE, one part of each sample was treated with endoglycosidase (Endo +). Blots were developed with polySia-specific mAb 735, and, after stripping, with chicken anti-SynCAM 1 pAb as indicated. The polySia-IP fractions of wild-type (WT) OPCs yielded strong polySia signals above 140 kDa, indicating the presence of polysialylated SynCAM 1. In the presence of these strong signals, the polySia-IP fractions of *N*^{-/-} OPCs yielded weak signals with a maximum centered around 110 kDa which were not detectable after standard ECL development (not shown). To visualize the latter, blots were cropped and ECL was used with shorter exposure times as compared with the main blots.

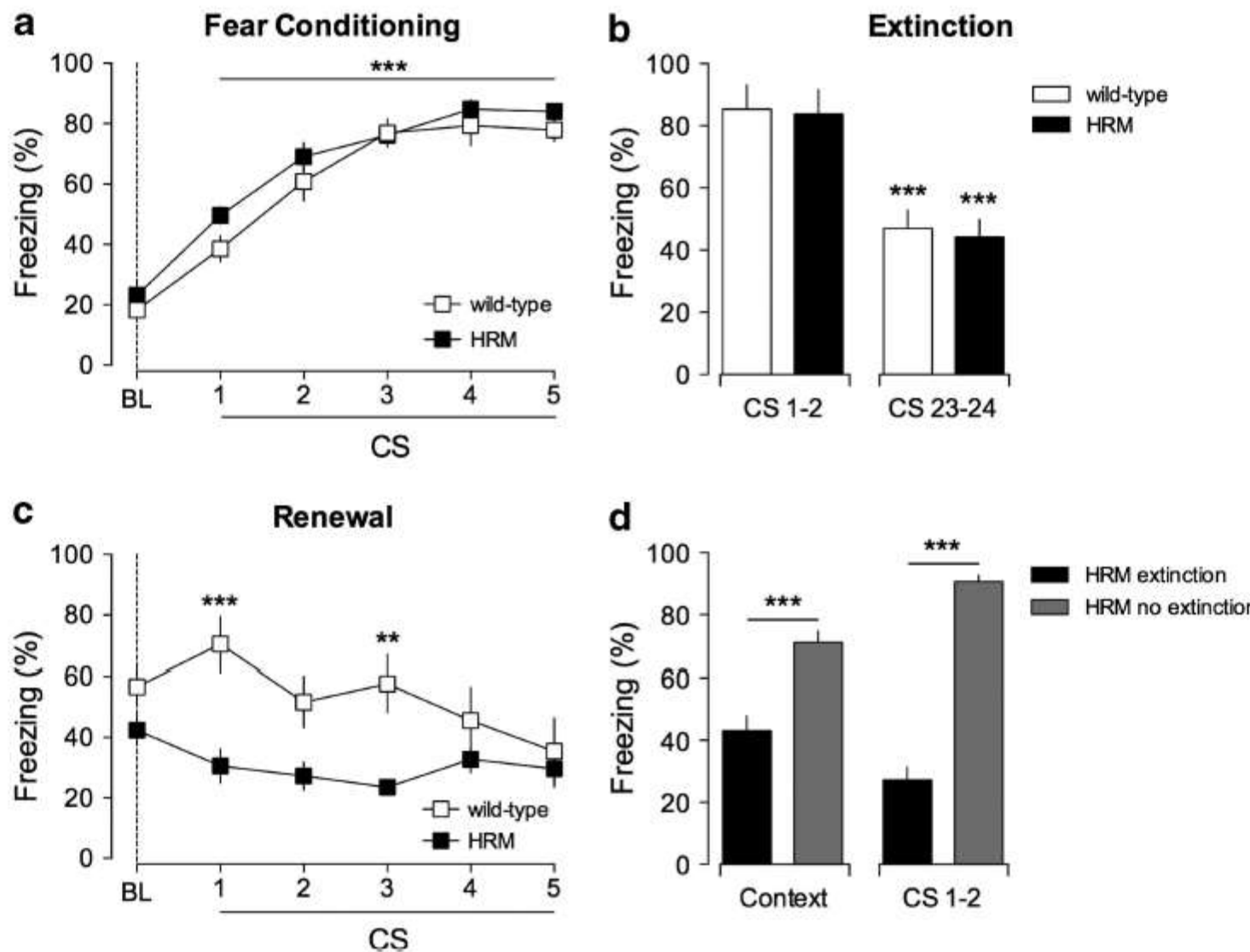


Figure 1. Extinction erased fear memories in juvenile heterozygous reeler mice (HRM). **(a)** Freezing behavior of HRM (black squares, $n = 9$) and wild-type ($n = 8$; white squares) during fear conditioning. Freezing levels after each five pairs of tone-shock presentation were significantly different when compared with baseline (BL) measured before paired conditioned stimuli-unconditioned stimulus presentation (*** $P < 0.001$). **(b)** Freezing behavior evoked by the first (CS 1 and 2) and last pair (CS 23 and 24) of CS presentation at the end of extinction training, both groups exhibited a significant auditory fear extinction compared with the initial two pairs (*** $P < 0.001$). **(c)** CS-evoked freezing showing a significant context-dependent renewal in wild-type (white squares) and HRM (black squares, $n = 9$; *** $P < 0.001$ and ** $P < 0.01$, wild-type versus HRM for each CS presentation). **(d)** In the absence of

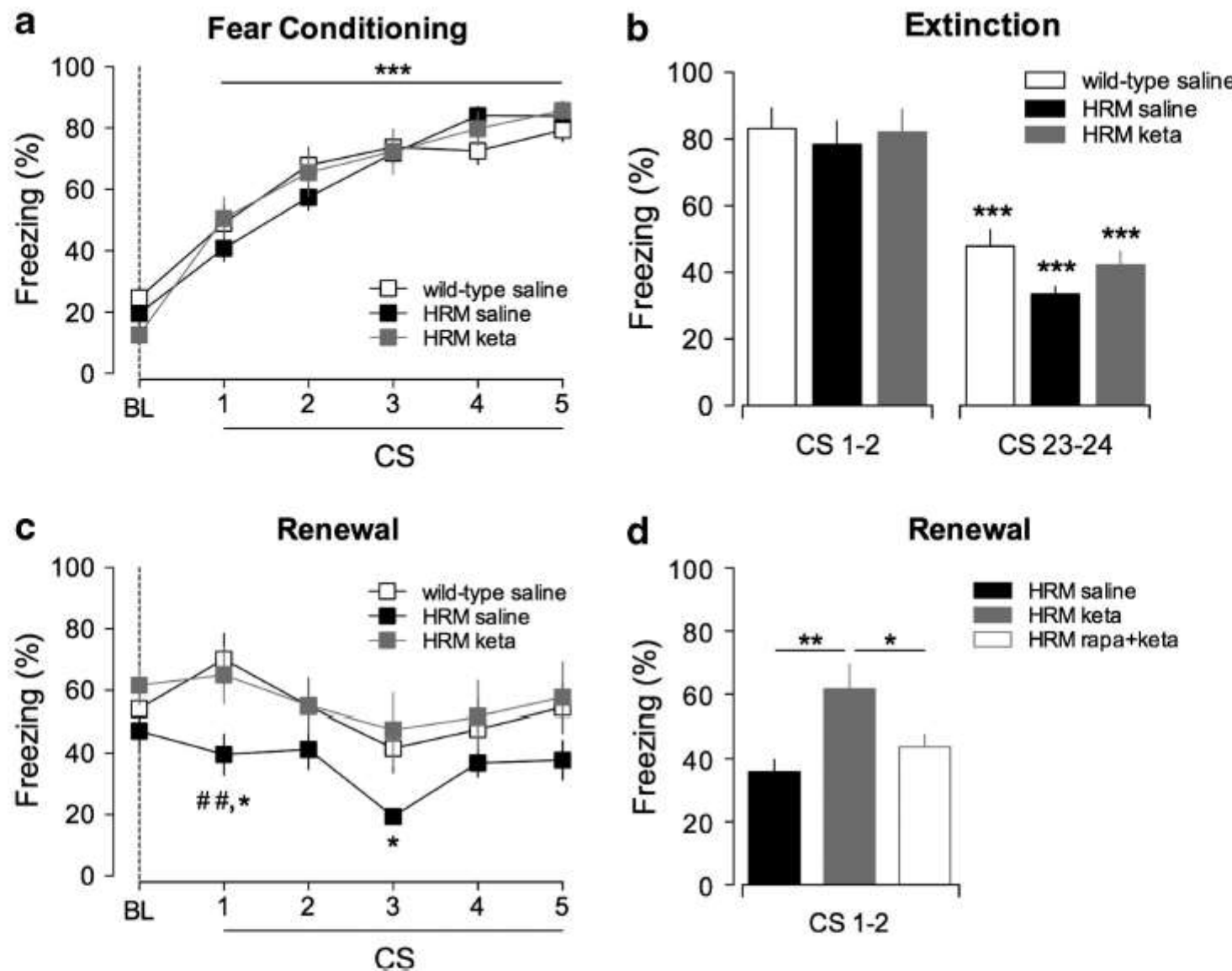


Figure 4. Ketamine prevents fear memory erasure by extinction in juvenile heterozygous reeler mice (HRM) via rapamycin pathway. **(a)** Similar freezing levels were measured during fear conditioning of saline-injected wild-type (white squares, $n = 9$), saline-injected HRM (black squares, $n = 9$) and ketamine (keta)-injected HRM (gray squares, $n = 9$). All groups show a significant increase in the percentage of freezing time after each paired conditioned stimulus–unconditioned stimulus (CS–US) presentation compared to the respective baseline (BL; $***P < 0.001$). **(b)** All groups exhibited a significant decrease of freezing levels between the first 2 (CS 1–2) and last 2 (CS 23 and 24) trials of extinction sessions ($***P < 0.001$). **(c)** Ketamine rescued context-dependent renewal of fear memory in HRM mice. Freezing levels were significantly lower in HRM saline-injected mice compared to HRM keta-injected mice at CS 3 ($*, P < 0.05$) and CS 4 ($*, P < 0.05$). Freezing levels were significantly lower in HRM saline-injected mice compared to HRM keta-injected mice at CS 1 ($##, P < 0.01$) and CS 2 ($*, P < 0.05$). **(d)** Freezing levels were significantly lower in HRM saline-injected mice compared to HRM keta-injected mice at CS 1–2 ($**, P < 0.01$) and HRM rapa+keta-injected mice at CS 1–2 ($*, P < 0.05$).

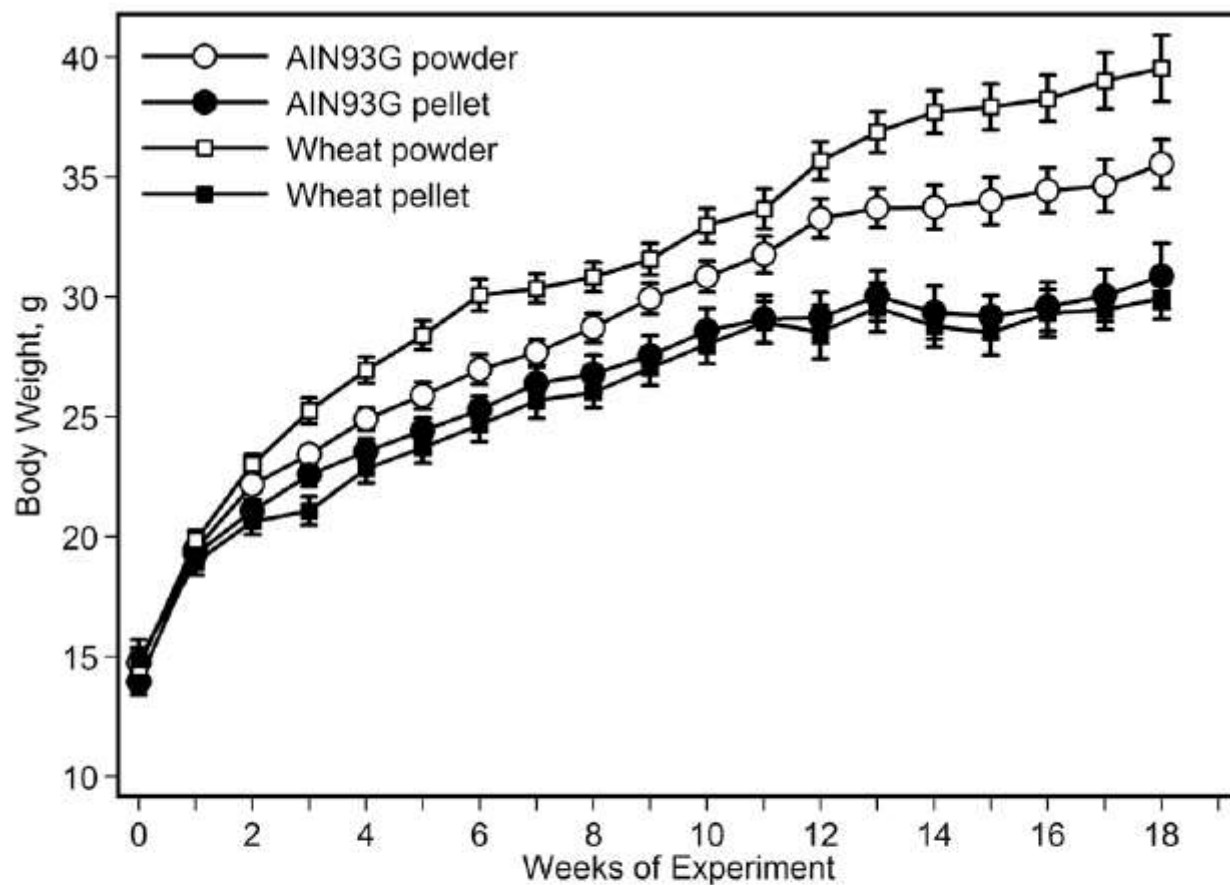


Figure 1. Body weights of mice fed the pelleted or powdered form of the AIN93G or wheat-supplemented diet. Two-way ANOVA and Tukey contrasts were performed to compare differences among groups. The difference in body weight between groups fed the pelleted or powdered diet was significant ($P < 0.01$) 2 wk after initiation of the experiment, and the significant increase continued throughout the experiment. Data are presented as mean $\pm$ SEM ($n = 13$ to 15 per group).

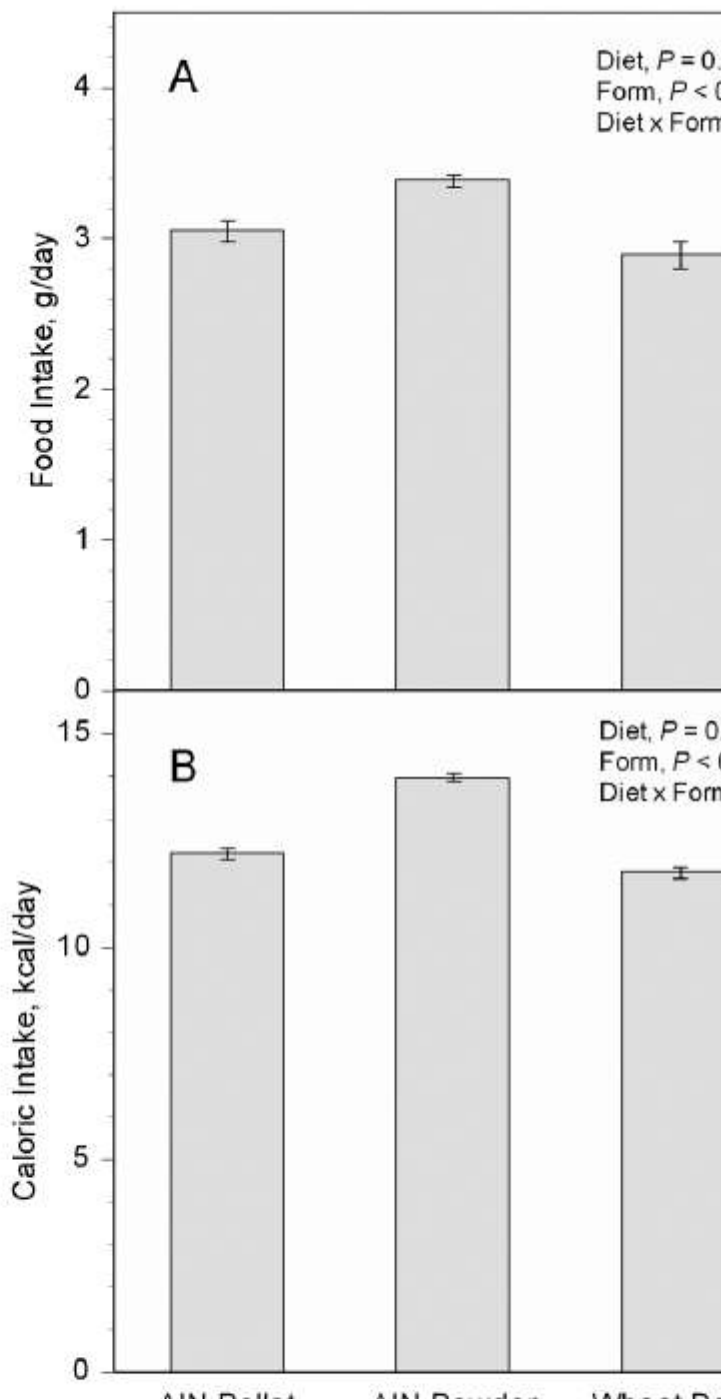
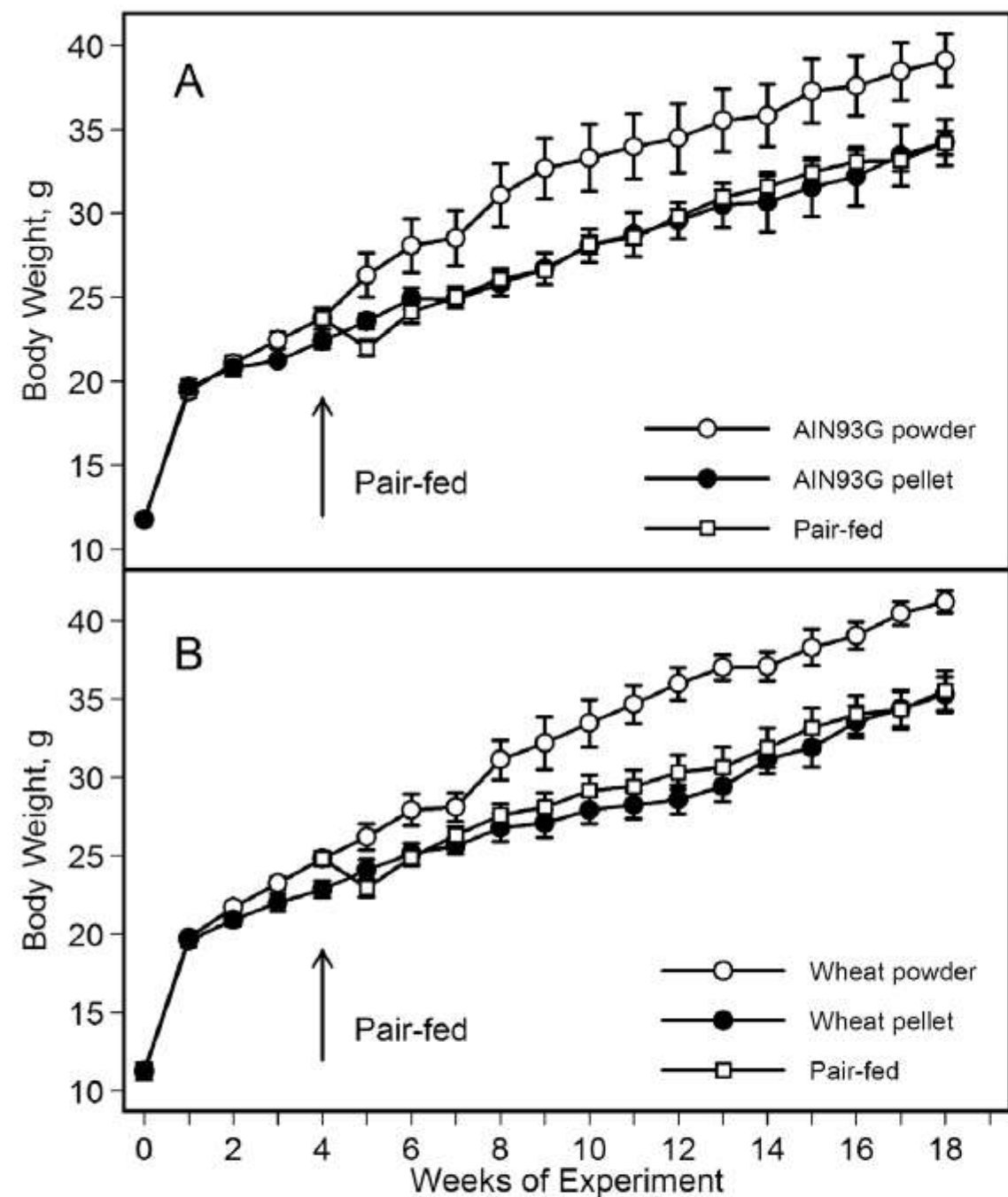


Figure 2. Effects of paired-feeding on body weights of mice fed the

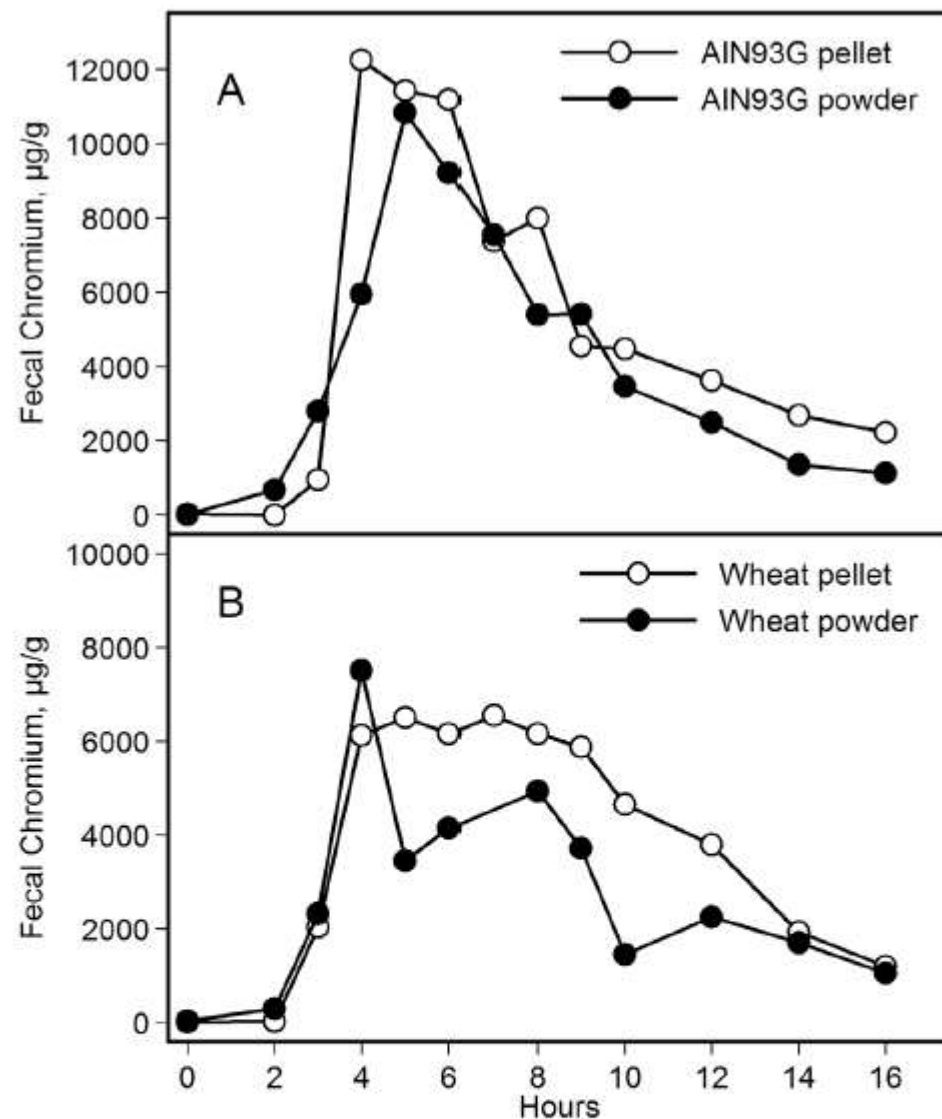


Figure 4. Gastrointestinal transit time of mice fed the pelleted or powdered form of the AIN93G or wheat-supplemented diet after ingesting 0.25 g Cr-supplemented diet ($n = 2$ for each time point).

Powdered and pelleted forms of both diets were associated with significant differences in body composition (Table 2). The ratio of fat mass to body mass increased by approximately

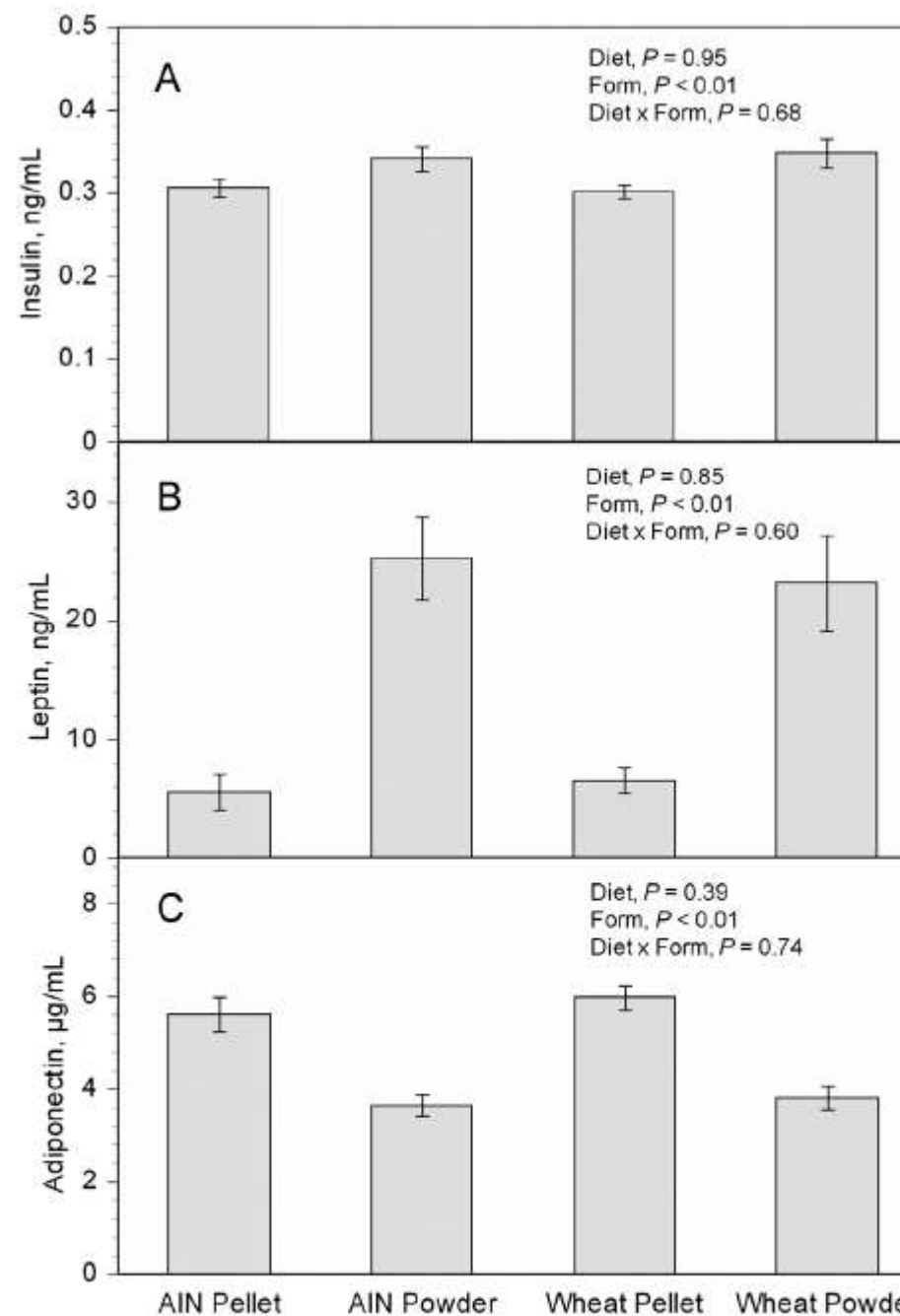


Figure 5. Plasma concentrations of (A) insulin, (B) leptin, and (C) adiponectin in mice fed the pelleted or powdered form of the AIN93G or wheat-supplemented diet.