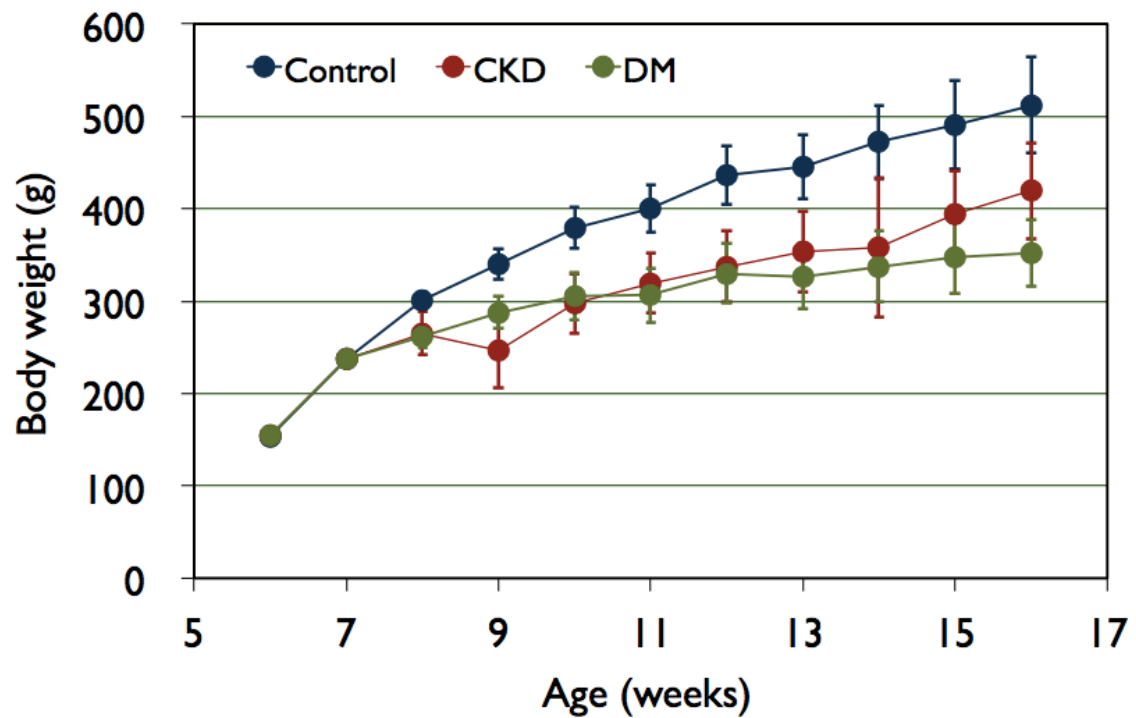


ESI Fig. 1 Relationship between the $^{44}\text{Ca}/^{42}\text{Ca}$ isotope ratios and histomorphometric parameters

There were no clear correlation between the $\delta^{44}\text{Ca}/^{42}\text{Ca}_{\text{serum}}$ values and the histomorphometric parameters (OS/BS and ES/BS). These results imply that the $\delta^{44}\text{Ca}/^{42}\text{Ca}$ for serum is mainly controlled by the relative mass balance of Ca between serum and bone.



ESI Fig. 2 Growth of the body weights for control, CKD and DM rats

The rats used in this study were purchased at 6 weeks old and housed for 10 weeks. Both the control and CKD rats were gaining body weight throughout the experiment. For the DM rats, almost no change in body weight was found between at 15 weeks and at 16 weeks. Data represents the average of the body weights for the rats of each group ($N = 7$ for the control and DM rats, $N = 6$ for the CKD rats), and error bar denotes the standard deviations (SD).