**Table S7.** Histomorphometric analysis of *Control,* *Rspo3+/-,Dkk-Tg* and *Rspo3+/-;Dkk1-Tg* female mice at 6 wk of age.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | *Control*  (n=5) | *Rspo3+/-*  (n=5) | *Dkk1-Tg*  (n=5) | *Rspo3+/-;Dkk1;Tg*  (n=6) | Two Way ANOVA | | |
| ***Rspo3*** | ***Dkk1*** | **Interaction** |
| BV/TV (%) | 5.02±0.57 | 7.83±0.75ac | 2.67±0.44ab | 4.64±0.5bc | 0.0008 | 0.0002 | NS |
| Tb.Th (m) | 29.0±1.65 | 32.2±2.07 | 28.8±2.34 | 32.6±2.47 | NS | NS | NS |
| Tb.N (/mm) | 1.71±0.11 | 2.4±0.01ac | 0.9±0.1ab | 1.43±0.12bc | <0.0001 | <0.0001 | NS |
| Tb.Sp (m) | 586.1±30.9 | 390.4±17.9c | 1202±154ab | 701.7±61.1bc | <0.0001 | <0.0001 | 0.0082 |
| MAR (m/day) | 1.63±0.2 | 2.12±0.27 | 1.12±0.13b | 1.97±0.18c | 0.007 | NS | NS |
| MS/BS (%) | 35.19±2.06 | 37.7±2.37 | 30.8±4.8 | 42.9±2.04c | 0.0194 | NS | NS |
| BFR/BS(m3/m2/year) | 212.8±34 | 296±45.8c | 127.8±27.2b | 307.4±38.3c | 0.0064 | NS | NS |
| Ob.S/B.Pm (%) | 18.75±1.63 | 25.5±1.1ac | 8.9±1.16 ab | 20.0±2.35bc | <0.0001 | 0.0004 | NS |
| N.Ob/B.Pm (/mm) | 14.6±0.92 | 19.3±0.41ac | 7.2±0.82ab | 15.2±1.65bc | <0.0001 | 0.0001 | NS |
| OS/BS (%) | 13.05±1.53 | 16.9±1.84c | 7.32±1.9b | 13.6±2.6c | 0.0261 | 0.0435 | NS |
| O.Th (m) | 4.35±0.30 | 4.80±0.32c | 2.68±0.51ab | 4±0.25c | 0.025 | 0.0025 | NS |
| N.Oc/B.Pm (/mm) | 4.22±0.37 | 4.56±0.27c | 6.31±0.46ab | 5.11±0.38c | NS | 0.0064 | NS |
| Oc.S/B.Pm (%) | 12.58±0.6 | 12.77±0.51c | 16.9±1.18ab | 14.1±1.31c | NS | 0.0087 | NS |
| ES/BS (%) | 4.51±0.7 | 4.46±0.47 | 5.14±0.48 | 5.8±0.74 | NS | NS | NS |

Data are expressed as Mean±SEM. Two-Way ANOVA followed by Fisher’s LSD post-hoc test.

a=p<0.05 compared to *control* mice, b= p<0.05 compared to *Rspo3+/-*mice, c= p<0.05 compared to *Dkk1-Tg* mice.