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| Celiac disease patients (n=10) |  |
| Median age, years (mean ± SD) | 5± 3 |
| Males (%) | 50 |
| Median age at onset , years (mean ± SD) | 5,8 ± 4,2 |
| Median age at diagnosis, years (mean ± SD) | 6,3 ± 4,4 |
| Median height, cm (mean ± SD) | 117,9 ± 29,63 |
| Median weight, kg (mean ± SD) | 25,42 ± 14,11 |
| Calcium, mg/dl (mean ± SD) | 9,9 ± 0,4 |
| Clinical presentation of CD |  |
| Asymptomatic (n/10) | 1 |
| Gastrointestinal manifestations |  |
| Abdominal pain (n/10) | 5 |
| Diarrhea (n/10) | 5 |
| Vomiting (n/10) | 1 |
| Costipation (n/10) | 2 |
| Extraintestinal manifestations |  |
| Weight loss (n/10) | 5 |
| Anaemia (n/10) | 2 |
| Improvment of symtoms after GFD (n/10) | 7 |
| Improvment of weight growth (n/10) | 7 |
| Persistent abdominal pain and diarrhea (n/10) | 2 |
| Persistent abdominal pain and costipation (n/10) | 1 |

**Supplemental Table 1:** Clinical characteristics of celiac disease patients.

This table shows the clinical characteristics of celiac disease patients enrolled in the study

(n=10). SD indicates standard deviation; CD celiac disease; GFD gluten free diet.

**Supplemental Figure 1: (A,C)** TRAP assay on osteoclasts (OCs) from 10 celiac disease patients (CD) after 48h of exposure with 25-hydroxy vitamin D3 [25(OH)D3] (VIT D) [10 nM]and JWH-133 [100nM]. The most representative images are displayed. TRAP (+) multinucleated (n ≥ 3) OCs, stained in purple, were counted though an AE2000 inverted microscope at 10x magnification, in at least three different wells for each individual sample. The percentage number of TRAP (+) cells respect to the total cell number for each sample is presented in histogram as mean ± SEM. Statistical differences were evaluated with the non-parametric Wilcoxon test. \*indicates *p* ≤ 0.05 compared to the untreated control (NT). **(B,D)** Bone resorption assay on OCs from 6 CD patients after 48h of exposure with 25-hydroxy vitamin D3 [25(OH)D3] (VIT D) [10 nM] and JWH-133 [100nM].The most representative images are displayed. The reabsorbed areas on the plate were visualized though an AE2000 inverted microscope at 10x magnification, in at least three different wells for each individual sample. The percentage number of the reabsorption pits is represented in histogram as mean ± SEM. Statistical differences were evaluated with the non-parametric Wilcoxon test. \*indicates *p* ≤ 0.05 compared to NT.

