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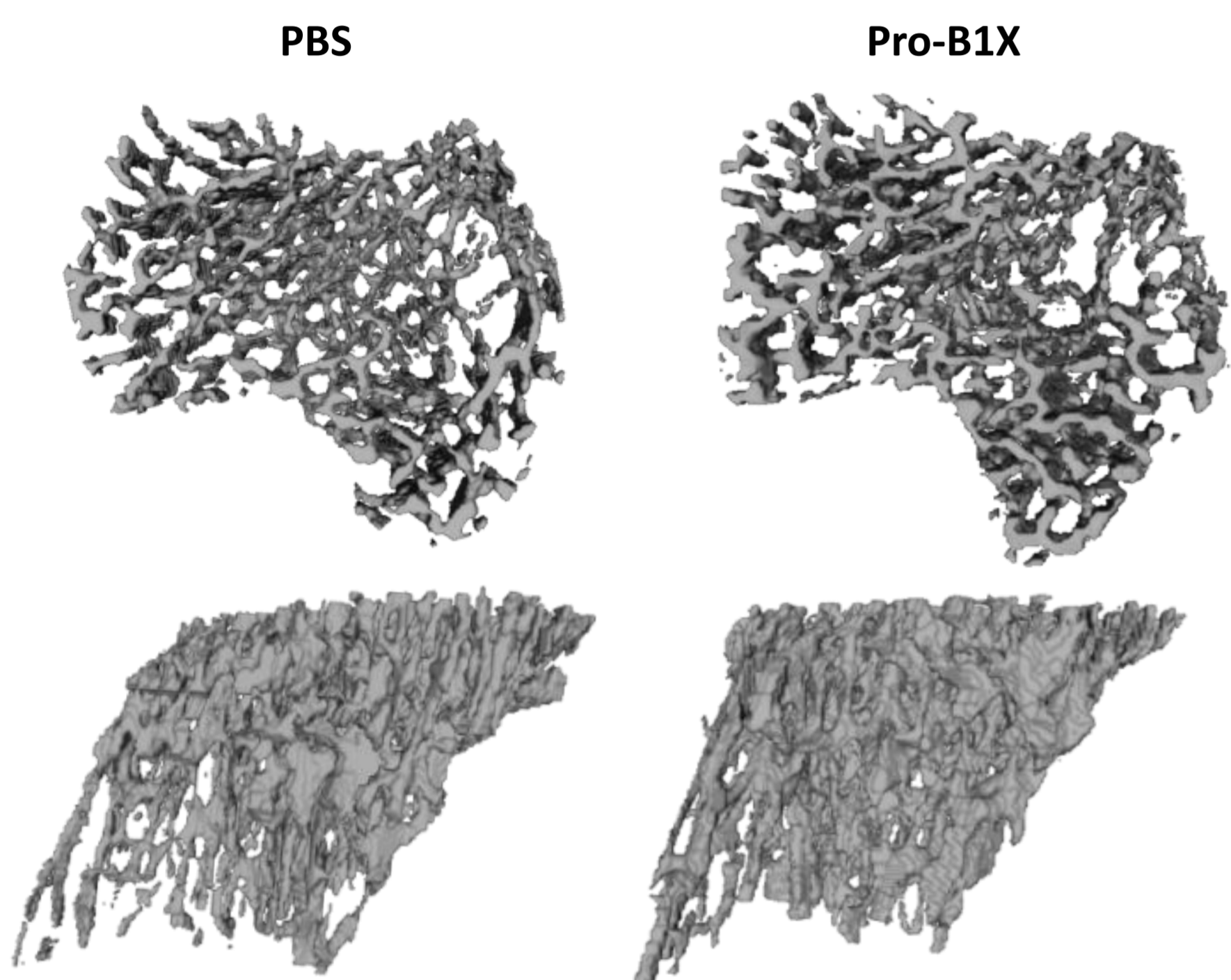
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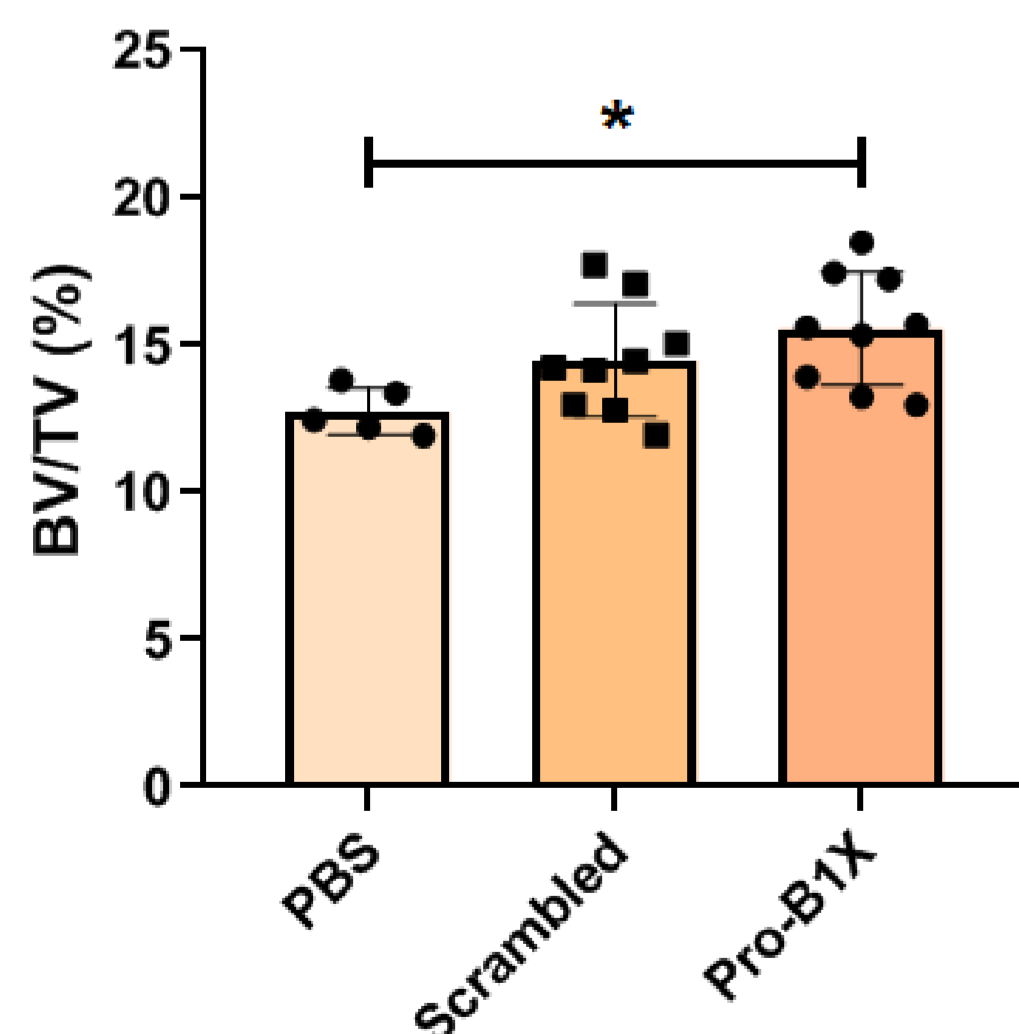
Ageing

AIM 1. Determine the role of Pro-B1X in homeostatic conditions

Figure 1. Pro-B1X increases trabecular parameters in vivo



Micro-CT images of trabecular bone from control mice and mice injected with Pro-B1X



Wild-type mice were injected daily for two weeks with PBS, a Scrambled peptide or Pro-B1X, tibias were isolated and analysed via micro-CT for percentage of bone volume vs trabecular volume.

Data are means +/- SE, PBS n=5, Scrambled n=9, Pro-B1X n=11, analysed by two-way ANOVA, * <0.05

BACKGROUND

Ageing

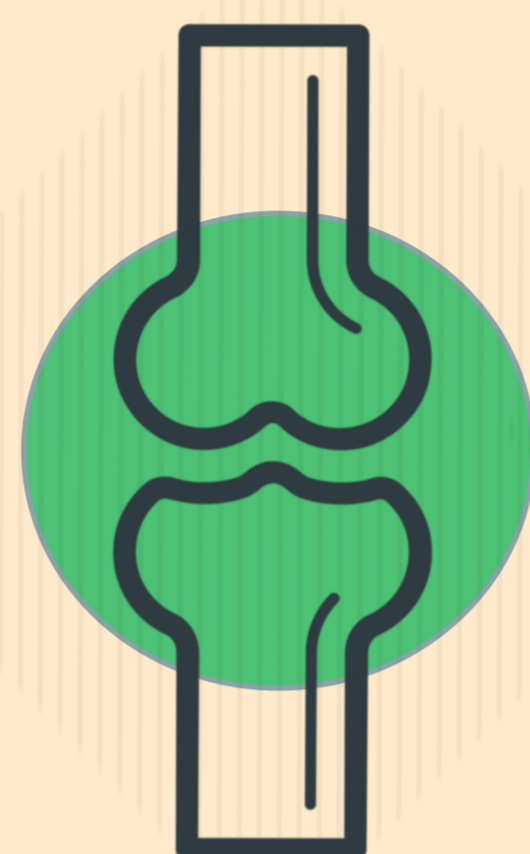


Hip fractures affect ~2% of women over 65 hip every year!¹

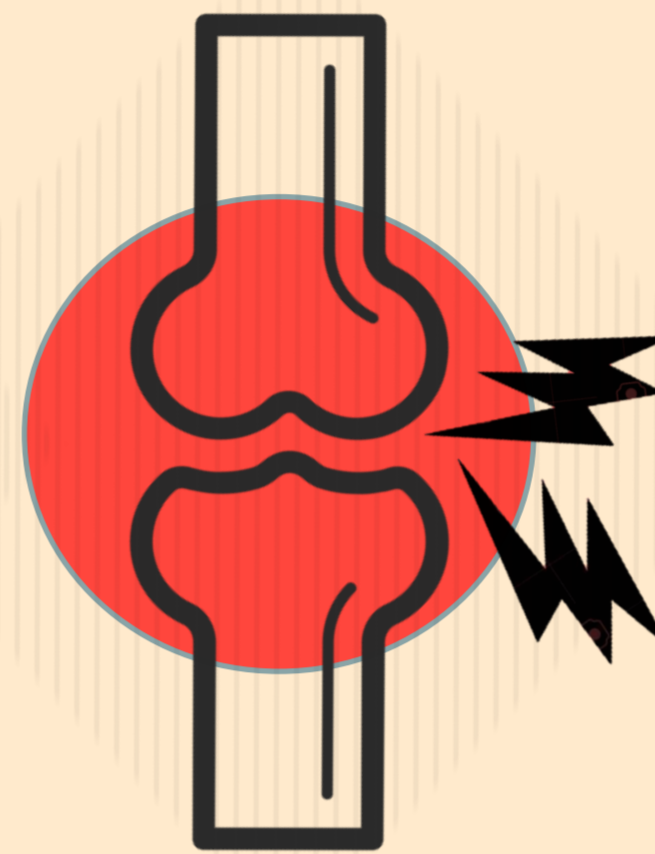
There are no effective treatments to prevent this.

Current treatments for bone damage are only able to slow down the bone damage and can not restore bone to its healthy state.

Healthy



Inflammation



Inflammatory diseases (e.g. rheumatoid arthritis (RA)) have a lot of bone damage, reducing quality of life.

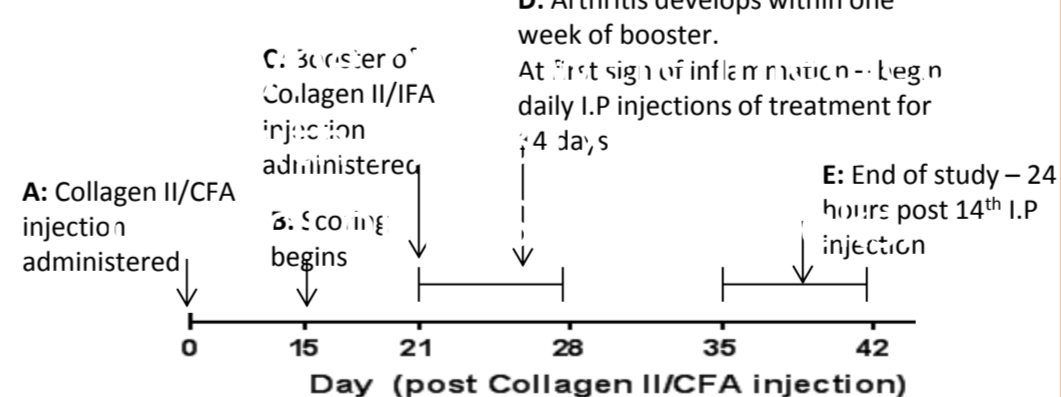
Pro-B1X

We have identified a novel peptide, Pro-B1X, which may also have a role in strengthening bone in normal conditions and decreasing bone damage during inflammatory diseases such as RA.

Bone homeostasis

Wild-type mice were injected daily with Pro-B1X, Scrambled control or PBS for 2 weeks.

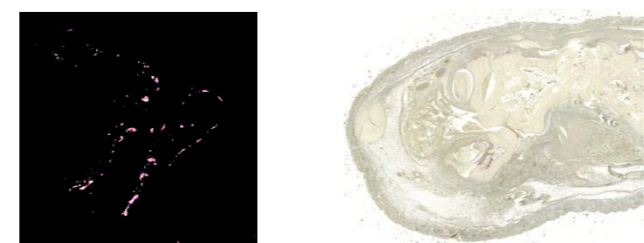
Collagen-induced arthritis (CIA)



Methods

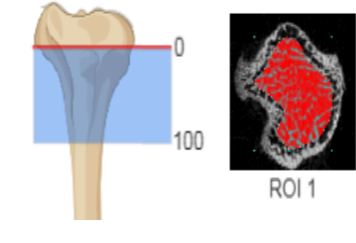
Osteoclast staining

Sections were stained for Tartrate-resistant acid phosphatase (TRAP) and osteoclasts were counted



Micro-CT

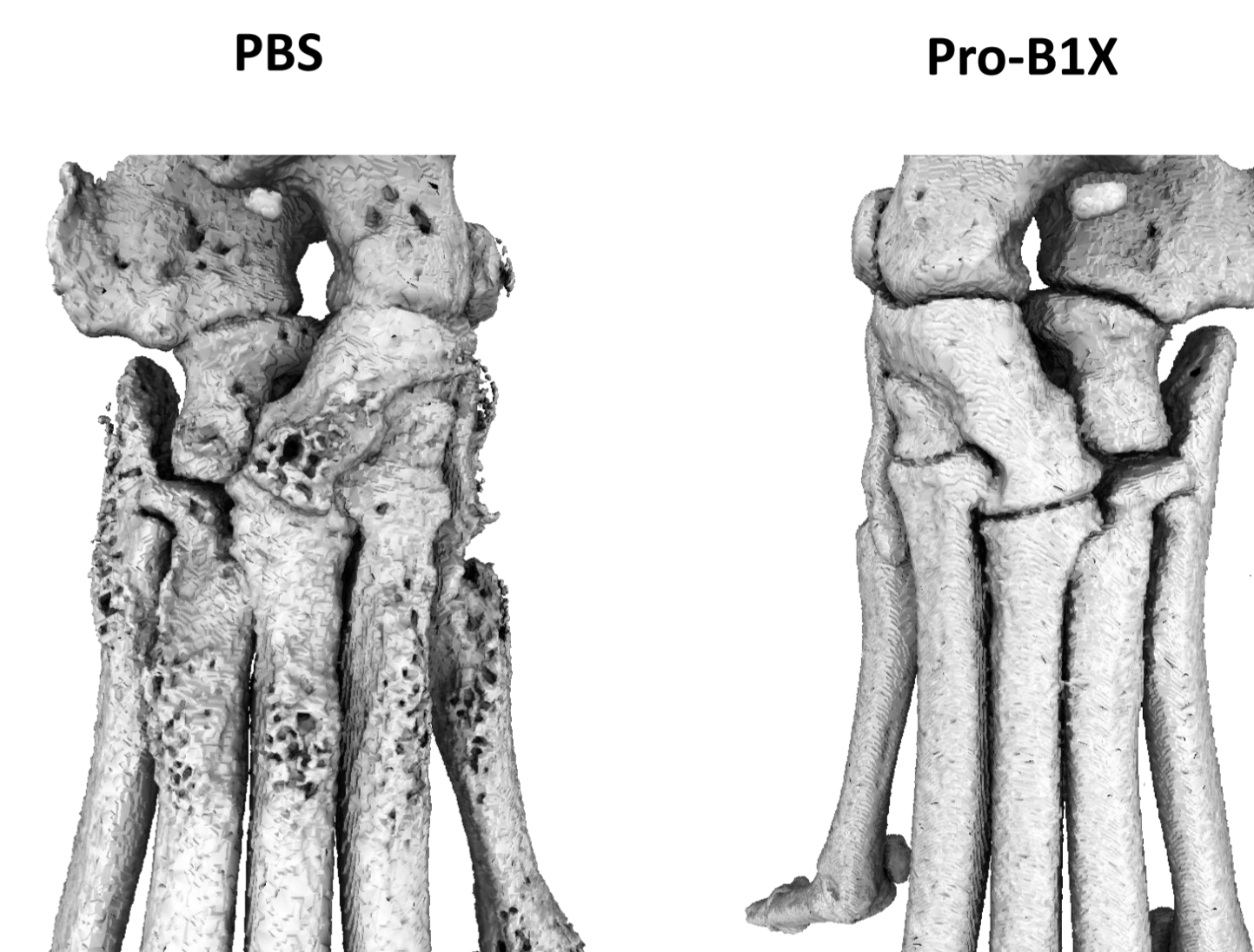
Limbs were micro-CT scanned and analysed for trabecular bone



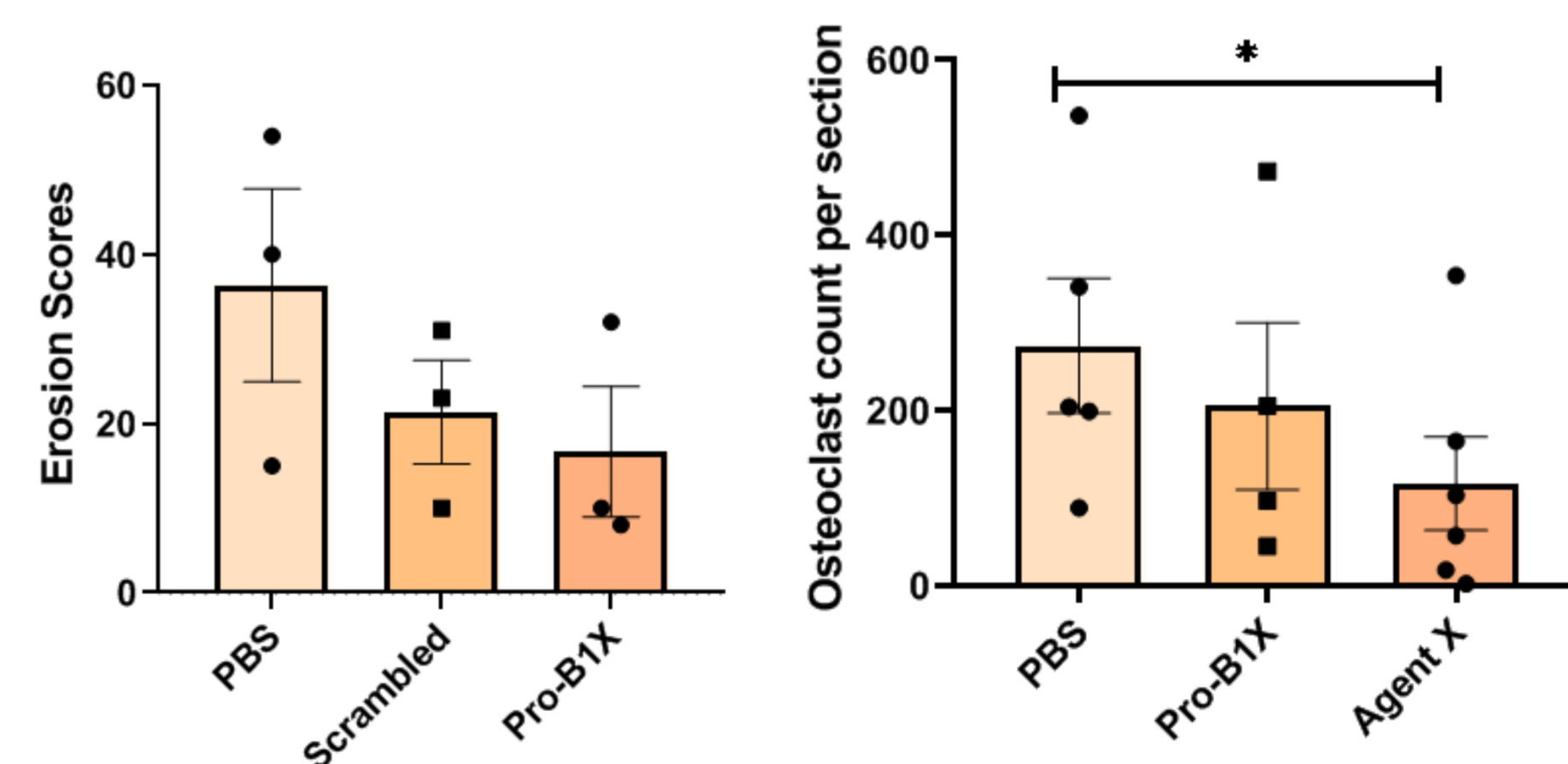
Inflammation

AIM 2. Identify the therapeutic potential of Pro-B1X during inflammatory bone damage

Figure 2. Pro-B1X has therapeutic potential during CIA model



Representative images of hind paws from PBS and Pro-B1X injected mice following micro-CT scanning.



CIA was initiated in WT mice. Upon first signs of inflammation, mice were daily injected with PBS, Scrambled control, or Pro-B1X for 2 weeks, after which the experiment was terminated.

Hind limbs were inspected for bone erosion, sectioned and TRAP stained in order to count osteoclasts. Data are means +/- SE, analysed by two-way ANOVA, * <0.05

References:

1. Thayer MK, 2018 Jun 1;9:2151459318776101.