**Supplementary Figure 2.** Axial CT and MRI images and bone marrow biopsy sections of 2 patients with mCRPC included in the study. A green ROI delineating the biopsy tract on CT is also shown as transferred on registered MRI sequences (DWI b900, ADC map and FF map). The bone marrow biopsy sections were stained with Haematoxylin & Eosin (HE). A black rectangle in 40x panel marks the region depicted in 200x panel.

**(a)** 73-year-old man with mCRPC and bone metastases who underwent a bone marrow biopsy after progression on treatment with abiraterone, enzalutamide and cabazitaxel. His bone marrow biopsy showed high cellularity (3), high osteoid (2) and fibrosis (3) and low fat content (3%). nDWI signal intensity from the area of the bone biopsy was high (7), whilst median ADC was 839 x10-6 mm2/s and FF was low (9%).

**(b)** 60-year-old man with mCRPC and bone metastases, previously treated with radiotherapy to the right pelvis for pain control in 2008. A bone biopsy was performed in 2014 after progression to therapy with abiraterone, cabazitaxel and Radium-223. His bone biopsy showed no evidence of tumor cells, low osteoid (0) and fibrosis (1) and high fat content (80%). nDWI signal intensity in the area of the bone biopsy was lower than in case “a” (3), whilst median ADC was high (1742 x10-6 mm2/s) and, in line with the high fat content in the bone biopsy sample, FF was also high (83%).

**a**

**b**