



**Figure S3. HDR following the induction of TALEN-mediated DSBs in cultured immature barley embryos.** (A) Merged bright field and epifluorescence images of line 462L (carrying *gfp* and the left-hand TALEN unit) callus taken 24 h after bombardment with the right-hand *gfp*-TALEN unit and linearized *yfp\** fragment. Bar: 20 μm. (B) Lambda stack of same materials shown in (A) used to visualize the presence of GFP (emission peak at 509 nm) and YFP (527 nm). (C; D) Epifluorescence of transiently transformed 462L callus after excitation with 488 nm laser light and spectral unmixing to identify (C) GFP and (D) YFP signals. Bar: 20 μm. (E) Merged image of (C) and (D).