

**Supplementary Figure S2:** Testing of Barley Glucosyltransferases for Interference with Estrogen Reporter Activation by Zearalenone in the Reporter Strain YZCP908.

The yeast strain YZCP908 (Ref. 13) expresses the human estrogen receptor ER $\alpha$  and contains an *ADE2* reporter gene with an engineered estrogen responsive promoter, to which the activated estrogen receptor binds. In the absence of substances with estrogenic activity, this *ADE2* gene is not expressed and the *ade2* mutant phenotype (red colonies) is displayed. Zearalenone (ZEN) at low concentrations activates expression of this reporter, leading to formation of white yeast colonies (see empty vector, -). If ZEN is converted into a metabolite that no longer binds to the estrogen receptor, the red colony color is maintained (positive control AtUGT73C5, +). Transformants expressing HvUGT14077 produce the red pigment on media containing 4  $\mu$ g/L ZEN, unlike strains expressing the other barley cDNAs tested or containing the empty vector. Genes tested: HvUGT5876 (1), HvUGT13248 (2), HvUGT14077 (3), HvUGT19290 (4).

