

S8 Fig. H<sub>2</sub>S is the determinant of *cbs* expression promoting catalase activity.

Catalase activity in crude extracts of  $\Delta cbs$  strains containing vectors ( $cbs^{-}sqr^{-}$ ; CBS<sup>-</sup> H<sub>2</sub>S<sup>-</sup>), P<sub>tac</sub>-cbs ( $cbs^{+}sqr^{-}$ ; CBS<sup>+</sup>H<sub>2</sub>S<sup>+</sup>) only, or both of P<sub>tac</sub>-cbs and P<sub>BAD</sub>-sqr ( $cbs^{+}sqr^{+}$ ; CBS<sup>+</sup>H<sub>2</sub>S<sup>-</sup>). Cells were grown in M9 minimal medium (M9 salts plus 2 mM MgSO<sub>4</sub>, 0.1 mM CaCl<sub>2</sub> and 0.2% casein acid hydrolysate), containing 200  $\mu$ M of IPTG and 0.02% arabinose, and treated with or without H<sub>2</sub>O<sub>2</sub> (1 mM, 20 min) at their mid-log phase. Three individual experiments were taken. Significance was determined by one-way ANOVA; *p*-value: \*, <0.05, \*\*, <0.01, \*\*\*, <0.001.