**Supplemental Figure S4.** Lipoylation of E2 subunits of PDH and KGDH is independent from the mtKAS pathway of lipoate biosynthesis in roots. Five μg mitochondrial protein and soluble proteins extracted from leaves and roots from wild type (W) and *mtkas-2* (*-2*) plants were separated on a 12% Tricine-SDS polyacrylamide gel and transferred to a PVDF membrane. A specific antibody which recognizes lipoylated protein domains was used for detection of the lipoylation status of PDH and KGDH E2 subunits. Identical results were obtained with *mtkas-1*, *mtkas-2*, and *mtkas-3*. Lipoylated H-protein was below detection limit in this experiment.

