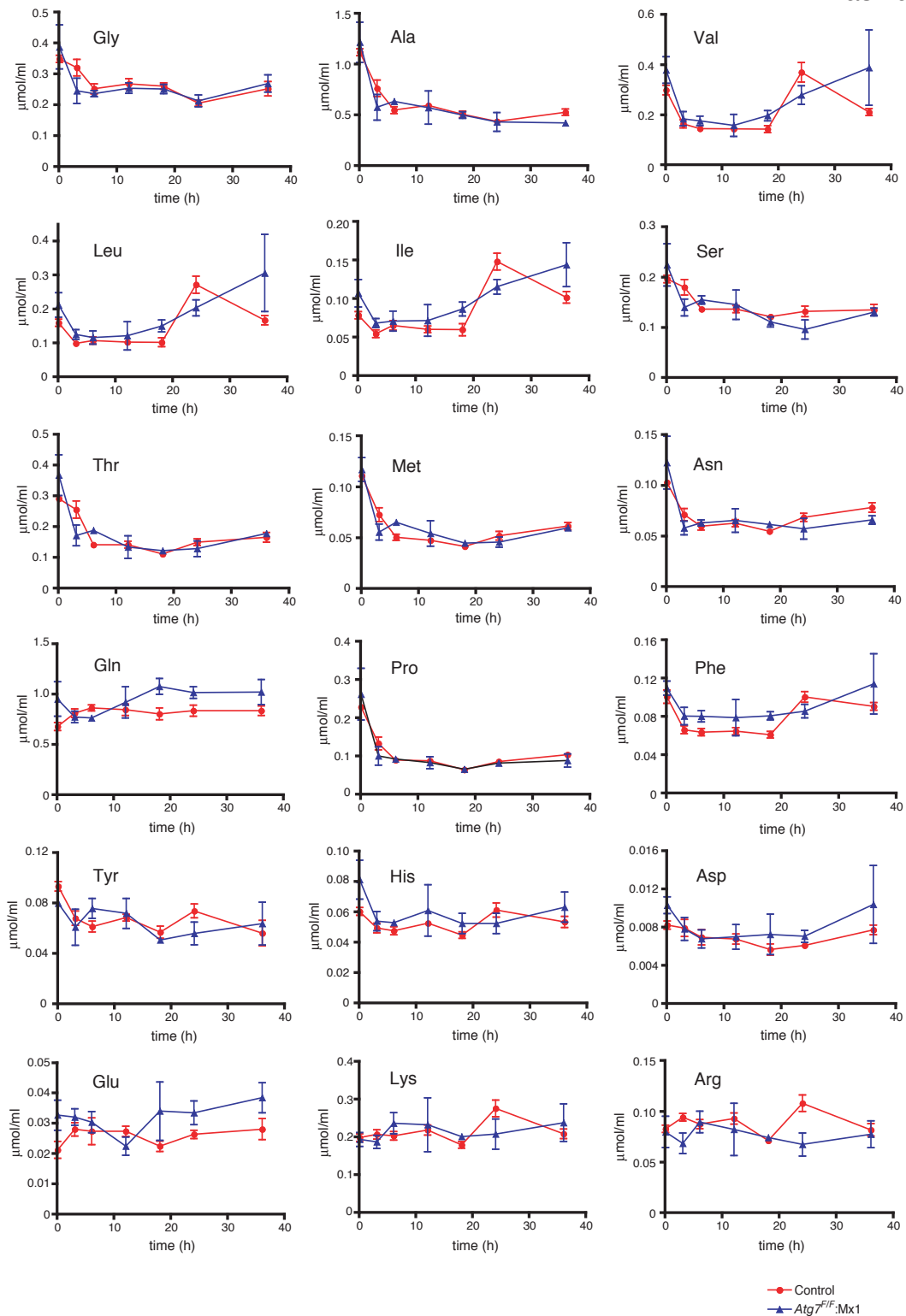


Supplementary Figure 1

Time courses of the changes in free amino acids in the liver during starvation. Livers were isolated from wild-type (red circle) and liver-specific conditional *Atg7*-deficient mice (blue triangle) starved for the indicated periods. Free amino acids, except for cysteine and tryptophan, were determined using an amino acid analyzer. The concentrations of these amino acids are expressed as $\mu\text{mol/g}$ wet liver. Each value is the mean \pm SEM of data from at least three mice. * $p < 0.05$. ** $p < 0.01$.

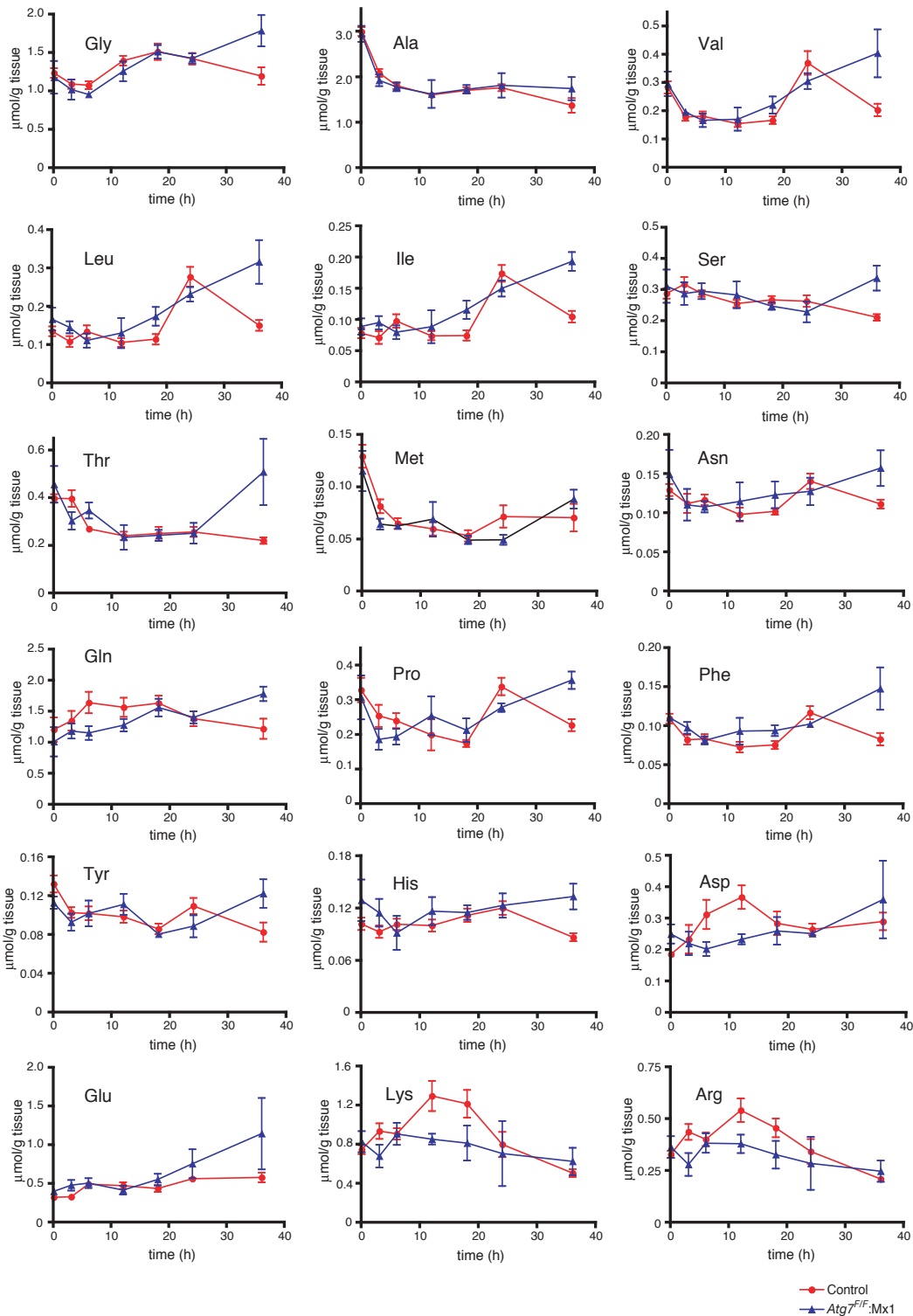
Plasma



Supplementary Figure 2

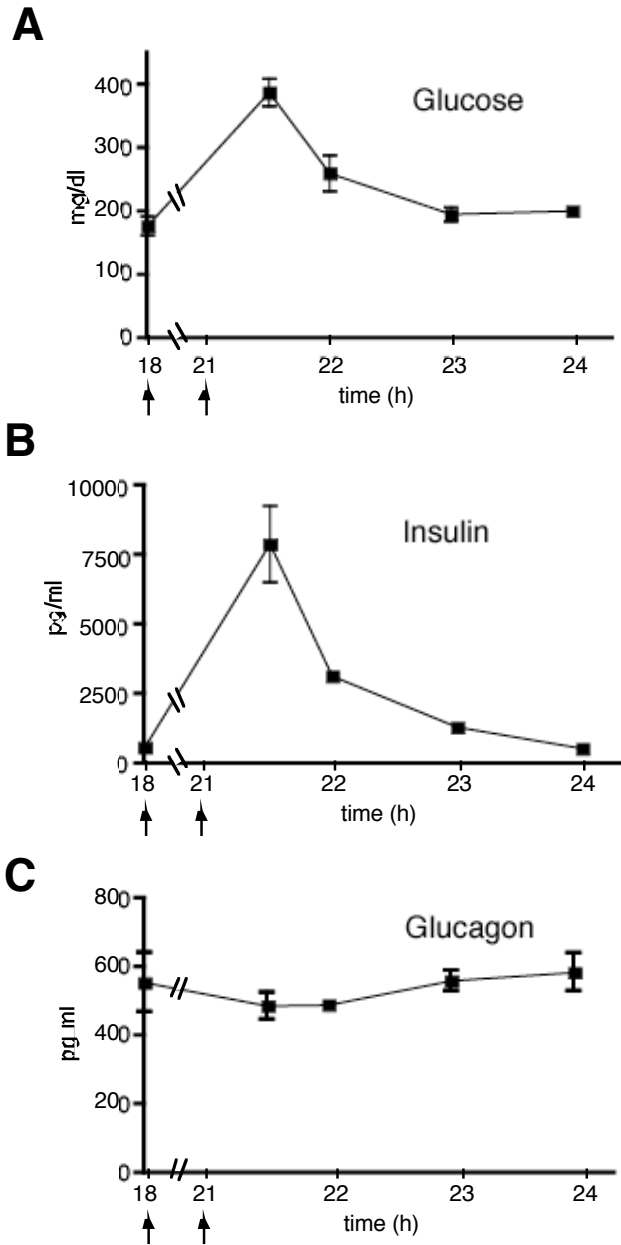
Time courses of the changes in plasma free amino acids during starvation. Plasma was taken from wild-type (red circle) and liver-specific conditional *Atg7*-deficient mice (blue triangle) starved for the indicated periods. Free amino acids, except for cysteine and tryptophan, were determined using an amino acid analyzer. The concentrations of these amino acids are expressed as $\mu\text{mol/ml}$. Each value is the mean \pm SEM of data from at least three mice.

Muscle



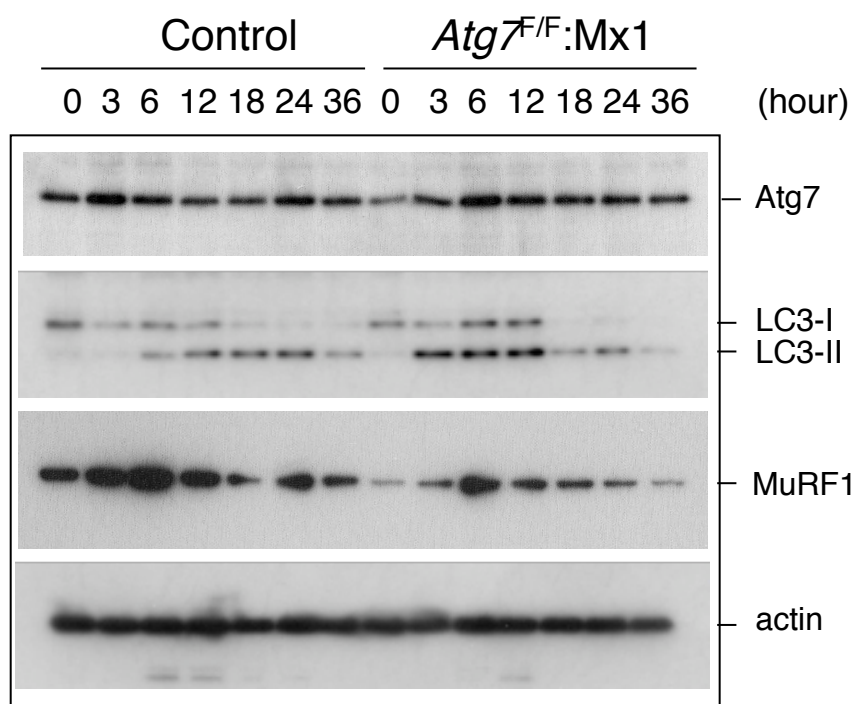
Supplementary Figure 3

Time courses of the changes in free amino acids of skeletal muscles during starvation. Muscle specimens were isolated from wild-type (red circle) and liver-specific conditional *Atg7*-deficient mice (blue triangle) starved for the indicated periods. Free amino acids, except for cysteine and tryptophan, were determined using an amino acid analyzer. The concentrations of these amino acids are expressed as $\mu\text{mol/g}$ wet muscle. Each value is the mean \pm SEM of data from at least three mice.



Supplementary Figure 4

Effect of glucose administration on the concentrations of insulin, glucagon, glucose, and free fatty acids in plasma. Wild-type mice were orally administered 0.2 g of an aqueous glucose solution after 18 and 21 hours of starvation. At the indicated times after administration, plasma samples were taken from the mice and the concentrations of glucose, insulin, and glucagon were determined. Note that both the insulin and glucose concentration was markedly increased by glucose administration. Each value is the mean \pm SEM of data from four mice.



Supplementary Figure 5

Starvation-dependent changes in Atg7, LC3-I, LC3-II and MuRF1 levels in wild-type and liver specific *Atg7*-deficient mice muscles. Homogenates of the muscles (10 μ g protein) isolated from mice starved for the indicated periods were analyzed by immunoblotting analysis. LC3-I, soluble form; LC3-II, PE-conjugated form.