Acute renal failure (ARF) is one of the important complications of rhabdomyolysis. Kefir is antioxidant, antineoplastic and it lowers cholesterol levels and protects from infections. We evaluated the efficiency of kefir on rats with renal failure after rhabdomyolysis. Each weight 200-250 grams, 4 groups of Wistar Albino female rats which contain 8 rats per group are used. Biochemical parameters such as renal functional tests, Cystatin C, total antioxidant capacity (TAC), total oxidative stress (TOS), lactate dehydrogenase (LDH) and creatine phosphokinase (CPK) are studied. Additionally, renal necrosis degree was evaluated with histopathological analysis. We observed nephropathy and rhabdomyolysis in rhabdomyolysis group and kefir + rhabdomyolysis group. Cystatine C and LDH were significantly higher in rhabdomyolysis group (P < 0.01). When all the groups were evaluated, urea (P < 0.01), creatinine (P < 0.01), Cystatine C (P < 0.01), LDH (P < 0.01), TOS (P = 0.02) and CPK (P = 0.03) levels were significantly higher. The histopathological comparison of groups; degree of necrosis is lower in the kefir + rhabdomyolysis group than in the rhabdomyolysis group. But biochemically there were no differences within these two groups. Biochemically and histopathological comparison of groups there were no differences within other two groups. We showed that kefir has a histopathological preventive attribute on rats with rhabdomyolysis-induced ARF.