Lutein is one of carotenoids, and absorbs blue light and has antioxidant effects. Recently some researchers evaluated that its antioxidant activity was stronger than Vitamin E and Astaxithanin, because of lutein’s quenching power of singlet-oxigen. For that reason, lutein may protect tissues from ischemia-reperfusion (I/R) injury induced by free radicals. However, there are no in vivo detail evaluation about protective effect of lutein on I/R injury of tissues related to the pharmacokinetic profile in blood of lutein. The present study was undertaken to clarify the protective effects of lutein on I/R injuries of rat small intestine and blood concentration profile of lutein. Anesthetized male Wistar rats (7-9 week old) were subjected to 30 minutes of ischemia by occluding the superior mesenteric artery (SMA), and followed by reperfusion. The administration of lutein before the intestinal I/R gave evidence that the damages on villi and decidualuation of enterocytes were recovered, and that an increase of the lipid peroxidation was suppressed. The plasma and tissue concentrations of lutein were determined by HPLC. The maxim plasma lutein concentration was showed about 3 hours ($t_{max}$) after oral administration of lutein, and its $t_{1/2}$ was 1 hour. Its bioavailability was about 10%. One hour after iv injection, it mostly accumulated to the liver and for the small intestine, maximum accumulation was showed 6 hours after iv injection.