

The effect of a combination of inulin (INU) and polyphenol-containing adzuki bean extract (AE) on intestinal fermentation was examined *in vitro* using fermenters for 48 h and *in vivo* using rats for 28 d. The total short-chain fatty acid concentrations in the fermenters were decreased by a combination of INU and AE, but the concentration in the INU + AE group was higher than the cellulose (CEL) and CEL + AE groups. The cecal propionate concentration was increased by a combination of INU and AE compared with their single supplement. The ammonia-nitrogen concentration in the fermenters and rat cecum was decreased by INU and AE. Cecal mucin levels were increased by INU and AE respectively. Therefore, our observations suggested that the combination of INU and AE might be a material of functional food that includes several healthy effects through intestinal fermentation.