

Comparison of the effects of *Lactobacillus brevis* and *Lactobacillus plantarum* on cutaneous wound healing in rats

Zahedi F, Heydari Nasrabadi M, Tajabadi Ebrahimi M and Aboutalebi H
Islamic Azad University, Iran

The benefits of probiotic microorganisms have been tested in several studies and they show many positive effects on human health like reduction of serum cholesterol, stimulation of immune system and prevention or treatment of human infections. This study has shown the activity of *Lactobacillus brevis* and *Lactobacillus plantarum* isolated from Iranian traditional cheese on cutaneous wound and describes the difference in healing activity between these two *Lactobacilli*. Some strains of *Lactobacillus* isolated from traditional dairy products of Iran were investigated for exopolysaccharide (EPS) production using the phenol-sulfuric acid method. *L. brevis* and *L. plantarum* were selected because they have high exopolysaccharide (EPS) production. A full-thickness wound (1.5×1.5 cm) was made on the back of each rat (45 rats in 4 groups). Two groups, experimental 1 and experimental 2, were treated by *Lactobacillus brevis*, and *Lactobacillus plantarum* that were added to eucerin. A control group was treated with eucerin and a negative-control group, additionally, did not receive anything. On days 1, 3, 7, 14 and 21, the rats were killed and wound tissue samples were collected for histological and statistical studies. The percentage of wound healing and inflammation in the experimental groups on day 21, when compared with the control and negative control groups, were significant ($p \leq 0.05$). In contrast to the control and negative-control groups, the number of neutrophils in the experimental groups was reduced in the later phase of wound healing. The current study showed a significant reduction in inflammation and an acceleration of wound healing in wounds treated with *Lactobacilli* as compared to the control and negative control groups. Further studies are required to develop a mechanism of *Lactobacillus brevis* and *Lactobacillus plantarum* during wound healing.

Biography

Farima Zahedi has completed his MSc at the age of 28 years from Islamic Azad University Damghan Branch. She is the lecturer of Islamic Azad University Parand Branch. She has published more than 20 papers in reputed journals.

zahedi.farima@gmail.com