

## "Propolisemulgel: A natural remedy for burn and wound"

### **Abstract**

**Objectives:** To develop an alternative medicine, propolis, in emulgel formulation for burn and wound treatment. **Methods:** The effect of two independent variables: emulsifying agent concentration and oil concentration on the cumulative amount of propolis release (dependent variable) from liquid paraffin and isopropyl palmitate emulgels was investigated. Eight formulations were prepared and evaluated for physical appearance, pH, propolis content, viscosity and *in vitro* propolis release. The release results were fitted into different kinetic equations and analysed using contour plot, interaction surface plot and one-way ANOVA. The selected emulgel formulation was investigated for its wound and burn healing activity in rats.

**Results:** All the prepared emulgels showed acceptable physical properties concerning colour, homogeneity, consistency, and pH value. The concentration of emulsifying agent had more pronounced effect on propolis release than oil concentration. Formulations F1-F6 showed "anomalous" drug release, while Formulations F7 & F8 showed zero-order kinetic. **Conclusions:** The formulation F7 with 5% isopropyl palmitate, 5% emulsifier mixture, 1% hydroxyl propyl methyl cellulose, 1% oleic acid and 10% propylene glycol is a promising formula for better management of wound and burn.