

**BACKGROUND:**

Currently there is no vaccine available in use against any form of leishmaniasis worldwide.

**OBJECTIVE:**

To assess potential of a live-attenuated *Leishmania major* promastigotes, for protection against a challenge infection with *L. major* in BALB/c mice.

**DESIGN:**

A laboratory based study.

**SETTING:**

Study was carried out at Centre for Biotechnology Research and Development, Kenya Medical Research Institute, Nairobi.

**RESULTS:**

The greatest protection against challenge with *L. major* was seen in mice immunised with live parasites ( $P < 0.001$ ) compared to vaccinations with heat killed or soluble antigens. In general, immunised mice produced high level of antileishmanial antibodies and T cell stimulation to their respective antigens.

**CONCLUSIONS:**

Our live-attenuated parasites produced by serial sub-culture of *L. major* parasites 118 times showed the capacity to induce appropriate cell-mediated immune responses and protection against *L. major* infection in BALB/c mice. Data also suggests that these parasites do not revert to virulence when injected subcutaneously in mice.