Sutherlandia frutescens is a traditional herbal medicine in southern Africa. S. frutescens has been used for patients suffering from numerous types of cancer, infectious diseases, and various inflammatory conditions. The immune system plays critical roles in the host responses against the invasion pathogens and diseases. There are numerous types of cells, such as macrophages, that are involved in immune function. This study was designed to determine the impact of S. frutescens on the function of macrophages. We mixed the ground S. frutescens powder with boiled water (tea) or alcohol to extract the compounds from this plant. Then these solutions were used to treat the immune cells (i.e., macrophages), and the impact of S. frutescens on the responses of immune cells were determined. We found that the S. frutescens tea was able to boost the immune responses which might explain why the tea has been traditionally used for the patients with infectious diseases or cancer. On the other hand, the solution made with alcohol reduced the inflammatory responses of the immune cells. The dual roles of S. frutescens showed on the function of immune cells led our interests to determine its effect on the immune responses in animal models which are normally used for human health studies. Unfortunately, oral consumption of S. frutescens showed very limited or no effect on the immune responses in mice. Additional experiments needs to be done to provide more information about the medicinal properties of this plant.