Sutherlandia frutescens (L.) R. Br. (family: Fabaceae) is one of the best known multi-purpose medicinal plants in South Africa for treating a wide range of human ailments including cancer, viral diseases, diabetes and inflammatory conditions. However, little scientific evidence has been documented regarding the mechanism in which Sutherlandia frutescens acts on the immune system of human body. In this study, dried Sutherlandia frutescens leaves were extracted with solvents with different polarity for investigating the antioxidant and anti-cancer activity, as well as the total polyphenol and L-canavanine content of the leaves.

The results suggest that all the Sutherlandia frutescens extracts obtained in this study contained polyphenols and L-canavanine, and exhibited antioxidant as well as anti-cancer activities at different levels. The antioxidant activities are generally associated with polyphenols while the anti-cancer activities are not as well correlated to the L-canavanine content, which suggests that L-canavanine is only one of the constituents contributing to Sutherlandia frutescens anti-cancer effect. These findings offer a starting point for further study on the isolation, purification and investigation of the active principles responsible for the numerous health claims of this South Africa medicinal plant.