

# **Hibiscus sabdariffa extracts on vascular smooth muscle cell proliferation**

Hibiscus sabdariffa Linne (HSL) has been found to be a great antioxidant. Since many antioxidants have been indicated in preventing restenosis, HSL is therefore elected to elucidate its effect on balloon injury-induced neointimal formation. Extractions of HSL at different temperatures were tested on neointimal formation. Our results showed that room temperature extracts of HSL significantly inhibited neointimal formation. These in vivo results were supported by our in vitro study showing that cell proliferation, migration, apoptosis and oxidation were all suppressed by room temperature extracts of HSL on A10 vessel smooth muscle cells. The cell cycle was found to arrest at G0/G1 phase. The organic extracts were more potent to inhibit cell migration as compared to the water extracts. Similar results were found in organic extracts to significantly suppress the protein expression level of PCNA, Raf and FAK. Our results also showed that organic extracts of HSL significantly increased the protein expression level of caspase-3. Taken together the above results, the room temperature organic extracts of HSL may possess potential preventive effects on PTCA-induced restenosis.