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Phytochemicals isolated from the anti-hyperglycaemic hexane extract of the unripe fruit of *Momordica charantia* L.

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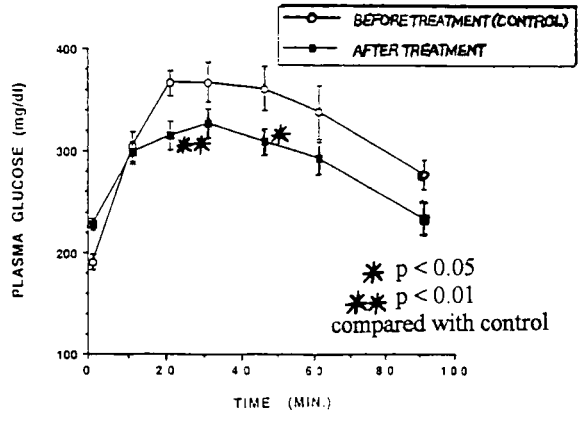
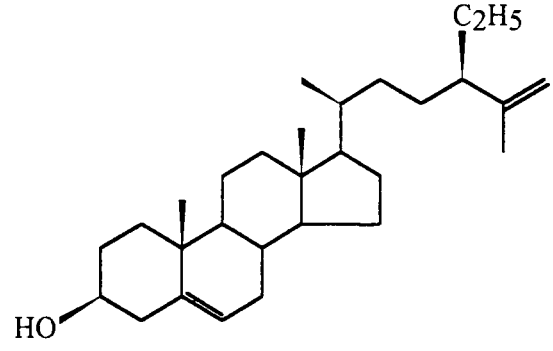
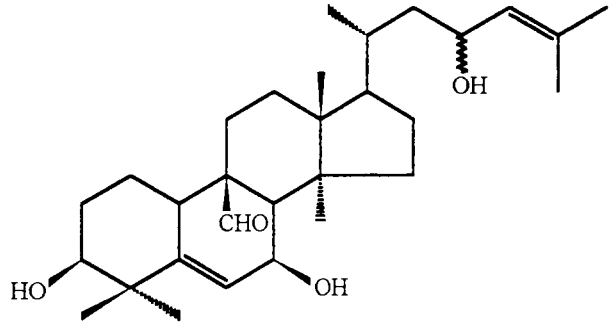
The unripe fruit of *Momordica charantia* L. (Cucurbitaceae) is well known for its anti-diabetic activity (Raman & Lau, 1996). We previously reported that *in vivo* anti-hyperglycaemic activity resided in a hexane extract of Thai *M. charantia* fruit juice, using a non-insulin-dependent diabetic (NIDD) animal model, induced by neonatal streptozotocin (n0 STZ) (Lau et al., 1996). Bioassay-guided fractionation of this extract resulted in the isolation of two compounds: 5,25-stigmastadienol (approx. 0.15%w/w yield) and momordicine I (approx. 0.05%w/w yield). This is possibly the first report of the isolation of momordicine I from *M. charantia* fruit, though it has previously been reported in the leaves and vines (Yasuda et al., 1984). 5,25-Stigmastadienol, at a dose of 4.6mgkg^{-1}, produced a significant overall improvement ($p<0.002$, compared to control by paired t-test) in oral glucose tolerance in NIDD rats (n=6) (Graph 1). The anti-diabetic activity of momordicine I is still to be investigated.



Graph 1: Effect of orally administered 5,25-stigmastadienol (4.6mgkg^{-1} body weight) on oral glucose tolerance (2gkg^{-1}) in 2h fasted n0 STZ diabetic rats (n=6). Values of plasma glucose are mean ± SEM.



5,25-Stigmastadienol



Momordicine I

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