Title: Potent Antitrypanosomal Triterpenoid Saponins from *Mussaenda luteola*

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Five new triterpenoid saponins, heinsiagenin A 3-O-[α-L-rhamnopyranosyl-(1→2)]-β-D-glucopyranosyl-(1→2)]-β-D-glucopyranoside (1), heinsiagenin A 3-O-[α-L-rhamnopyranosyl-(1→2)]-β-D-glucopyranosyl-(1→2)]-β-D-glucopyranosyl-(1→4)]-β-D-glucopyranoside (2), 2α-hydroxyheinsiagenin A 3-O-[α-L-rhamnopyranosyl-(1→2)]-β-D-glucopyranosyl-(1→2)]-β-D-glucopyranoside (3), 2α-hydroxyheinsiagenin A 3-O-[β-D-glucopyranosyl-(1→2)]-β-D-glucopyranosyl-(1→4)]-β-D-glucopyranoside (4) and N-(2S, 3R, 4R, 3-methyl-4-pentanolid-2-yl)-18-hydroxylanosta-8(22E, 24E)-trien-27-amide-3-O-[α-L-rhamnopyranosyl-(1→2)]-β-D-glucopyranoside (5) were isolated from the aerial parts of *Mussaenda luteola* Delile (Rubiaceae). Structural elucidation was based on the analysis of spectroscopic data (1D and 2D NMR) and HR-ESI-MS. Compound 1 showed
potent antitrypanosomal activity with an $IC_{50}$ value of 8.80 µM. Compounds 2–4 showed highly potent antitrypanosomal activity with $IC_{50}$ values ranging between (2.57–2.84 µM) and $IC_{90}$ values ranging between (3.36–4.35 µM), which are 5 fold greater than the positive control DFMO ($IC_{50}$ and $IC_{90}$ values of 13.06 and 28.99 µM, respectively). Compounds 1 and 2 showed moderate affinity to µ-opioid receptors with $K_i$ values of 9.936 µM and 0.872 µM, respectively compared to a $K_i$ value of 1.958 nM for the positive control, naloxone HCl.