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The use of alternate materials for blood detections at crime scenes

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Crime in South Africa is currently a huge problem. Many criminals cases (eg. Rape and murder cases) remain unsolved due to a lack of reliable forensic evidence. The detection of body fluids such as blood has become problematic since existing tests such as the luminol test have inherent disadvantages. These disadvantages include a high cost and short shelf life. The need for tests which are more cost effective has therefore arisen. This study has been initiated to identify components in the plant extract of *Crinum Macowanii* bulb which are chemically similar to luminol and therefore can replace luminol. Such components include tryptamine alkaloid and rutin flavonoids. The preliminary Thin Layer Chromatography (TLC) studies have shown that the components of the *Crinum* bulb are

soluble in non-polar organic solvents (alkaloids) as well as in water (flavonoids). Tryptamine glows in the presence of UV-light and show potential for replacing luminol. Whereas, rutin produces chemical reactions with human blood and thus may be used in day time detections. Tests on these isolated components and their interactions with pig blood were also conducted to verify replacement for the luminol test. This study was also extended to real human blood samples. Furthermore, human blood specimens detected by luminol and alternate materials (*Crinum Macowanii* bulb extract) were tested for their DNA integrity to ensure that DNA remained intact upon detection for further positive identification for evidence presentation in a court of law.

Biography

Sewela Khunoana is still studying her PhD from the University of Johannesburg. She is currently lecturing chemistry to first year students at the University of Johannesburg. She has 3 of journal articles under review and awaiting her final Thesis results.

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