

Fingerprint visualization on clothing using Lumicyano

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Fingerprints are one of the most common types of evidence found in crime scenes. On the other hand, due the surfaces where they can be deposited, fingerprints are not always easy to visualize. This paper aims to expose a research done in London with a new chemical: Lumicyano. Visualization of fingerprints on clothing can be important in contact crimes as murder and rape to prove that offender was in contact with at least the piece of garment from victim. In order to understand if it was possible to visualize fingerprints with Lumicyano on clothing, 13 types of fabrics were tested and analyzed in black and white colors. Samples were chosen taking in account the most common types of fabrics used in London's population. Results were analyzed at naked eye but also with fluorescent lights; that revealed in some cases fingerprints with high quality detail. With more than 130 samples of fabrics analyzed, it was possible to conclude that this is a suitable technique to visualize fingerprint on garment. Dark samples obtained better results but in some white samples it was also possible to observe some details. This study aims to increase knowledge on the possibilities of visualizing fingerprints in porous surfaces which are usually more difficult to observe.

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Evaluation of anticancer potential of the medicinal plant *Wrightia tinctoria* (Roxb) R. Br., from South India

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After cardiovascular diseases, cancer is the second major cause of death in the western world and in European countries, each year over three quarters of a million people die from cancer. Although chemotherapy is effective in detecting cancer at a very early stage, the side effects and resistance towards drug are a major problem. The use of natural products has an exceptional value in the control of cancer and its eradication program. The compounds obtained from natural products significantly reduce tumor size and enhance the survival time. *Wrightia tinctoria* R. Br. belongs to family Apocynaceae commonly called as "Jaundice curative tree" in South India. In Siddha system of medicine, it is used for psoriasis and other skin diseases. In the present study leaf oil (Oil B) and ethyl acetate bark extract (EAB) of *Wrightia tinctoria* have been analyzed for *in vitro* cytotoxic properties by trypan blue dye exclusion technique using Dalton's Lymphoma Ascites (DLA) cell line. *In vivo* anti-tumor activity was studied against Dalton's Lymphoma Ascites (DLA) cells in Swiss albino mice by monitoring parameters like tumor volume measurement, survival time and tumor cell growth inhibition. The study revealed that both EAB and Oil B exhibited significant cytotoxic effect to DLA tumor cell lines. It has been found that the EAB at the dose of 200 mg/kg b. wt. and 50 mg/kg b. wt. significantly decreases tumor volume, increases life span of DLA induced ascites tumor bearing Swiss albino mice and reduces tumor cell growth rate in comparison to those of the standard cyclophosphamide (25 mg/kg b. wt.). *In vitro* anti-oxidant potentiality was tested using DPPH radical scavenging test, total phenol and flavonoid content and reducing power determination assays. The extracts showed significant antioxidant activity in a dose dependent manner. Anti-tumor properties of *W. tinctoria* could be linked with the presence of these antioxidant and cytotoxic activity. This may be used to develop effective therapeutic approaches towards the prevention or treatments of various immune conditions and different types of cancer. Recent studies revealed that the silver nanoparticles synthesized from *Wrightia tinctoria* showed remarkable antioxidant activity and silver nanoparticle are used in biosensors and numerous assays where silver nanoparticle materials can be used as biological tags for quantitative detection. This can help identify fingerprints, sources of ink and even residue from gunshots. The use of *Wrightia tinctoria* derived nanoparticles might be the future thrust in the field of forensic nanotechnology.

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