

SYNTHESIS OF TOLUIDINE BLUE O AND A KIT FOR ORAL CANCER SCREENING



Applications

This kit will help in screening of oral cancer and identifies the biopsy site.

Problem Addressed

Currently, oral cancer is weighing heavily on the whole world, especially in developing countries with a high mortality rate. Delay in diagnosis is the primary reason which happens primarily due to inaccessibility to an efficient and cost-effective screening tool. Screening by vital stains has been explored frequently with favorable outcomes. This requires cleaning the surface of the oral lesion by acetic acid followed by topical application of Toluidine blue O (TBO) and removal of the excess TBO by acetic acid. Cancerous tissue will be stained dark blue colour. Toluidine blue O being available as a laboratory grade powder with low level purity and multiple impure isomers lacks appropriate colour value, stability, palatability and leads to high false positive results. Moreover, inconvenient method of application of TBO along with acetic acid in three steps makes the screening process inconvenient for the dental surgeons. These problems have not allowed a ready to use chairside TBO based oral cancer screening kit

Technology

The present invention relates to a novel process of synthesis to obtain the purest possible Toluidine blue O so that the colour value can be accentuated. The present invention also relates to a formulation with TBO as the chief ingredient to increase the stability and clinical effectiveness. The present invention further relates to a dual chamber sprayer where one chamber contains this unique formulation of TBO and another chamber contains flavoured acetic acid for convenient intraoral topical application. In addition to screen oral cancer with 93.65% sensitivity and 100% specificity, this kit can also aid in identifying appropriate biopsy site in a large oral ulcer. This sprayer contains two separate chambers, one contains TBO formulation and another contain 1% flavoured acetic acid which shall deliver these two solutions in three steps as topical applications onto the oral mucosa. Bluing detects oral cancer. This kit is user friendly, convenient cost effective having higher clinical effectiveness which would be useful not only at every dental clinic but also at every mass screening camp.



Dual Chamber Sprayer



Inventors

Swagatika Panda

Applicant :
Quick Blue Oral Care Pvt Ltd.



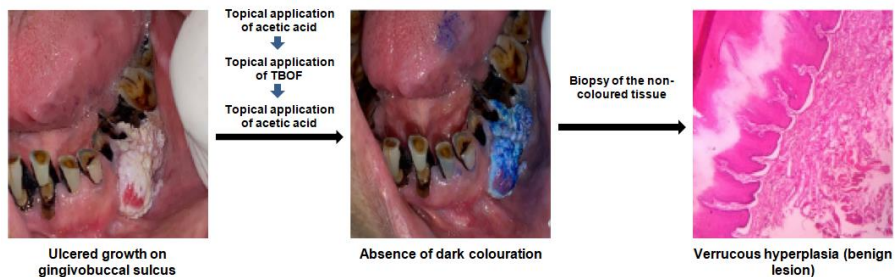
Categories of this invention

Medical kit comprising of applicator (Medical device) and pharmaceutical solution

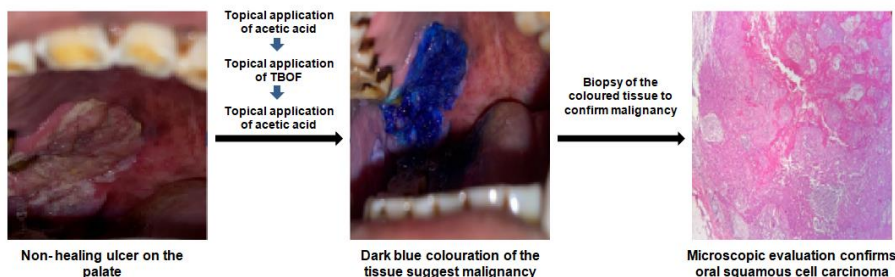


Intellectual Property

SYNTHESIS OF TOLUIDINE BLUE O AND A KIT FOR MUCOSAL APPLICATION
Patent - Filed
Application no. - 202131053258
International patent application no. - PCT/IN2023/050263



On spraying toluidine blue solution the affected area doesn't stain confirming it to be non-malignant lesion



Sequential application of TBO and acetic acid in three steps shall stain the cancer tissue as dark blue confirming the malignancy



Advantages

- Clinically effective with high sensitivity and specificity
- Biopsy site identification in large non-healing oral ulcer
- Applicator free application prevents infection.
- Cost effective, quick and ready to use nature acceptable by surgeons.
- Most valuable mass screening tool.

Reach Us

Dr. Amaresh Panda
Lead, Technology Transfer Office, KIIT-TBI
amaresh@kiitincubator.in, tto@kiitincubator.in
+91-98190-53408

Dr. Samuel Rout
Manager, Technology Transfer Office, KIIT-TBI
samuel@kiitincubator.in, tto@kiitincubator.in
+91-77353-89456