ABSTRACT

In Sri Lanka many lung cancer patients present themselves at late stage and consequently, most of them are in need of treatment mainly through chemotherapy. Following the histological evolution of the tumour as either NSCLC or SCLC they all given a few types of general chemotherapy, irrespective of the type of cancer and patient physiology. Usually the effectives of the treatment drugs are detected at the end of all cycle of chemotherapy and thus far there is no biomarker to detect the status of activity of chemotherapeutic drugs. As such, a biomarker that can detect alteration in DNA of lung cancer patients would be highly beneficial. Accordingly, this study aims at developing a fluorescence biomarker that could potentially be used to detect the epigenetic alterations in circulating tumour DNA isolated from blood of lung cancer patients. We believe this marker will be effective, simple, non-invasive and inexpensive and benefit both patient and clinicians in determining the success of the therapeutic process. The attempt made to develop a fluorescence probe to detect ct-DNA with 5-amino-1,10-Phenanthroline and 1,10-Phenanthroline was very successful as two types of probes could be developed.5-amino-1,10-Phenanthroline and 1,10-Phenanthroline alone and protonated 5-amino-1,10-Phenanthroline and 1,10-Phenanthroline were highly emissive at low concentrations and ct-DNA in levels ng/μL could quench their fluorescence significantly.