SCREENING OF THE ALLYLAMINES IN HUMAN HAIR AND NAILS BASED ON LUMINESCENCE SPECTROMETRY

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The control of physiological and functional state of personnel of dangerous industries is a very important direction for ensuring ecological safety. Usually this control is realized as a control over the consumption of alcohol and drugs of abuse. Allylamines are the newest group of synthetic antibiotics which act by inhibition of squalene epoxidase in the formation of fungal cell membrane. The two main compounds, naftifine and terbinafine are highly active in vitro against a wide range of fungi. They are used orally in the treatment of dermatophytic infections of the toenail or fingernail (onychomycosis, tinea unguium) caused by susceptible fungi. Because terbinafine and naftifine are highly lipophilic and keratophilic, the drug distributes in high concentrations into the stratum corneum, sebum, hair, and nail matrix, bed, and plate, persisting in these tissues for several weeks to months after discontinuance of the drug. As it is known long-term histories of the drug presence in the body are accessible through hair and nail analysis.

That is why the aim of our research was a creation of screening procedure based on luminescence detection as allylamines testing in hair and nails.

The optimal experimental conditions for all consecutive steps of screening detection of model samples have been determined. The metrological characteristics obtained by us allow employing the proposed techniques for fast and cost-effective method of drug analyses.