VisikolTM: Novel Clearing Agent and Mounting Medium to replace Chloral Hydrate Solution for use in Microscopy, Forensics, Quality Control, Education, and Biological, Food, and Earth Sciences

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Technology description

Rutgers scientists have identified a novel chemical solution, VisikolTM, for clearing and mounting tissues for microscopic identification. The newly identified chemical solution is constituted of chemical compounds that have never been used for such applications.
VisikolTM can be used as a replacement for the universally used clearing agent for microscopy, namely, an acidified chloral hydrate glycerol solution. Choral hydrate is used as the key compound in a wide variety of reagents such as Hertwig’ s solution, yet one of the main disadvantages of chloral hydrate is that it is a controlled substance (depressant, sedative, and hypnotic). As such, chloral hydrate requires Drug Enforcement Administration (DEA) approval and compliance, which can be a lengthy, time-consuming, and costly procedure. On the other hand, the components of VisikolTM do not require such approval. In addition, VisikolTM can effectively and safely replace chloral hydrate, which has been shown to cause chronic and acute toxicity, and irritation to eyes, skin, mucous membranes, and the respiratory system. Experiments have shown that, in terms of efficacy, VisikolTM matched or outperformed chloral hydrate-based solutions and exhibited a refractive index greater than acidified chloral hydrate glycerol solution.

Application area

Clearing and Mounting Agent for Microscopy; Histology; Forensics; Biological, Food, and Earth Sciences; Quality Control; and Education.

Advantages

The components of VisikolTM are inexpensive, easy to acquire, and do not require DEA approval and compliance.
The VisikolTM solution of the invention has a high refractive index (higher than acidified chloral hydrate glycerol solution and in some cases higher than glass), resulting in similar or clearer quality.

It can be used for both living organisms and non-living materials, is stable, and is compatible with other microscopy stains and dyes.
This versatile solution can be used as a semi-permanent or permanent mounting agent in addition to being used as a clearing agent.

Institution

Rutgers University

Inventors

Adolfina Koroch
Associate Professor/Deputy Chair
Thomas Villani
Chief Scientific Officer
James Simon
Professor
Department of Plant Biology

联系我们

叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com