脂褐素染色液（Long Ziehl-Neelsen 法）

货号：G2020
规格：4×50mL
保存：室温，避光保存，有效期 6 个月。

产品组成：

名称	4×50mL	保存
试剂(A)：复红染色液	50mL	室温，避光
试剂(B)：Long 酸性分化液	50mL	室温
试剂(C)：亚甲蓝染液	50mL	室温，避光
试剂(D)：弱酸溶液	50mL	室温

产品介绍：

脂褐素是具有颗粒状的褐黄色色素，由含有脂肪的残存物与溶酶体消化物所组成。被认为是由脂质和脂蛋白氧化产生的。氧化过程是缓慢的，而且是逐步发生的，因此色素呈现出不同的染色反应、不同的颜色，形状和大小也变化不一。脂褐素可见于肝脏、肾脏、心肌、肾上腺、神经细胞与神经节细胞等。主要分布在细胞核周围。

由于脂褐素是由脂质和脂蛋白缓慢氧化逐步形成的。色素所处的氧化程度不同，因此应用技术证实时，组织化学反应会有所不同，因此建议应用多种不同的技术来验证色素是脂褐质。常用的方法有 PAS 法、Schmorl 高铁-铁氰化物还原试验、Long Ziehl-Neelsen 法、Gomori 醛复红法、Masson-Fontana 银法等。

自备材料：

载玻片、恒温箱或水浴锅

操作步骤：(*仅供参考*)

1. 组织固定，常规脱水包埋。 切 4μm，常规脱蜡至水。
2. 载玻片入蒸馏水轻轻清洗。
3. 入复红染色液加盖浸染，60℃水浴 3h 或室温过夜。 自来水洗净。
4. 入 Long 酸性分化液中分化，直至背景染色被去除。 流动自来水洗净。
5. 入亚甲蓝染色液复染胞核 1min。入弱酸溶液轻轻清洗。
6. 常规脱水，常规透明，合成树脂封片。

实验结果：

脂褐素、蜡样物质	棕黑色
细胞核	蓝色
背景	淡红紫或淡蓝色

注意事项：

1. 恒温控制的水浴条件下进行染色，可以得到更可靠的结果。
2. 为了您的安全和健康，请穿实验服并戴一次性手套操作。

Lipofuscin Stain Kit(Long Ziehl-Neelsen Method)

Cat: G2020
Size: 4×50mL
Storage: RT, avoid light, valid for 6 months.

Kit Components

Reagent	4×50mL	Storage
Reagent(A): Fuchsin Solution	50mL	RT, avoid light
Reagent(B): Long Acid Differentiation Solution	50mL	RT
Reagent(C): Methylene Blue Solution	50mL	RT, avoid light
Reagent(D): Weak Acid Solution	50mL	RT

Introduction

Lipofuscin is a granular brown yellow pigment, which is composed of the remains containing fat and lysosomal digests. It is believed to be produced by the oxidation of lipids and lipoproteins. The oxidation process is slow and gradual, so the pigments show different dyeing reactions, different colors, and different shapes and sizes. Lipofuscin can be found in liver, kidney, heart, adrenal gland, nerve cells and ganglion cells. Mainly distributed around the nucleus.

Lipofuscin is formed by the slow oxidation of lipids and lipoproteins. The degree of oxidation of pigment is different, so the application of technology to verify real-time, histochemical reaction will be different, so it is suggested to use a variety of different technologies to verify that pigment is lipofuscin. The commonly used methods are PAS method, Schmorl high iron ferricyanide reduction test, long Ziehl-Neelsen method, Gomori aldehyde fuchsin method, Masson Fontana silver method, etc.

Self Provided Materials

Slide, Incubator or Water Bath

Protocol*(for reference only)*

1. Tissue fixation, conventional dehydration and embedding. Cut into 4μm, conventional dewaxing to water.
2. Wash the slide gently with distilled water.
3. Stain in Fuchsin Solution and bathed in water at 60℃ for 3h or overnight at RT. Wash with tap water.
4. Differentiate the cells by Long Acid Differentiation Solution until the background staining is removed.
5. Rinse with running water.
6. Re-dyeing the nucleus with Methylene Blue Solution for 1 min.Wash gently with Weak Acid Solution.
7. Conventional dehydration, conventional transparency, synthetic resin seal.

Result

Lipofuscin and Waxy Substance	Brownish Black
Nucleus	Blue
Background	Reddish Purple or Light Blue

Note

1. Dyeing in water bath with constant temperature control can get more reliable results.
2. For your safety and health, please wear experimental clothes and disposable gloves.