

Hematoxylin and eosin staining of murine adipose and liver tissues

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Abstract

Diet-induced obesity through administration of a western-type diet high in fat and sugar to mice can result in a higher weight of adipose and liver tissues. The increased adipose tissue weight can be due to hypertrophy (bigger cells) or hyperplasia (more cells) of adipocytes, or a combination of both. Hematoxylin and eosin (H&E) staining of adipose tissue sections allows you to investigate the size of the individual adipocytes. A western-type diet can induce accumulation of fat (= steatosis) in the liver, which is nicely illustrated by an H&E stain.

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Guidelines

-Make sure during the hydration (step 1-5) and dehydration (10-14) steps that you allow most of each solution to drip off, before you transfer your slides into the next solution. This is to prevent contamination of the following solutions. This is especially critical in the dehydration steps as otherwise too much water is transferred to the jars containing xylene and too many water droplets will have entered your mounted slides.

Before start

-Filter hemalun solution using a round Whatmann paper when the solution is covered with a film.

Protocol

Step 1.

5 min xylene x 2

Step 2.

3 min 100% ethanol x 2

Step 3.

3 min 70% ethanol

Step 4.

3 min 50% ethanol

Step 5.

3 min denatured water (AD)

Step 6.

2.5 min hemalun

Step 7.

10 min TAP (running water)

Step 8.

10 sec eosin

Step 9.

Rinse twice in AD (not long)

Step 10.

Up and down 50% ethanol (3x)

Step 11.

Up and down 70% ethanol (3x)

Step 12.

Up and down 100% ethanol (3x)

Step 13.

3 min 100% ethanol (2x)

Step 14.

5 min xylene x 2

Step 15.

Mount coverslip with DPX

**REAGENTS**

DPX 1.00579.0500 by [Merck Millipore](#)

Warnings

-The hydration and rehydration steps and the mounting of the slides are done in a fume hood due to xylene. Exposure to xylene can occur via inhalation, eyes, ingestion or skin contact. Xylene causes health effects from both acute (<14 days) and chronic (>365 days) exposure. In addition, the health effect will be different depending on the amount a person has been exposed to. Therefore, to avoid exposure to xylene via the skin, special xylene-resistant gloves are worn during xylene handling.