

**NAME:** Rimamchatin Peculiar Love

**MATRIC NO:** 17/MHS01/287

**LEVEL:** 300

**DEPARTMENT:** Anatomy

**COLLEGE:** Medicine and Health Sciences

**COURSE:** ANA 304

**Question 1**

If Nissl stain is used to demonstrate RNA/DNA in the neurons of CNS, what staining technique is used for identifying the same in peripheral neurons?

**Answer:**

Acridine Orange Staining is a technique used for identifying RNA/DNA in peripheral neurons

**Question 2**

Is Luxol Fast Blue Stain also used to detect demyelination in the PNS? Whatever your answer is, explain the procedure involved in the demonstration of demyelination in the PNS.

**Answer:**

Luxol Fast Blue stain is only used to detect myelination in the CNS and not the PNS.

Adams's OTAN Method is staining technique used to detect demyelination in the PNS

The rationale of this technique is the separation of lecithin from sphingomyelin. The abbreviation is for osmium tetroxide and alpha-naphthylamine. The technique is applied to cryostat sections, ideally after calcium-formaldehyde fixation.

**Solutions Needed**

A. Osmium Tetroxide-Potassium Chlorate. This is made up as required and used only once.

Osmium tetroxide, 2% stock solution in water: 5 mL

Potassium chlorate (KClO<sub>3</sub>), 1% stock solution in water:30 mL

Water: 5 mL

B. Saturated  $\alpha$ -Naphthylamine Solution. Dissolve a

few crystal of  $\alpha$ -naphthylamine in 40 mL of water at 40°C.

Filter. This solution is used at 37°C

**Procedure**

1. Treat the sections with osmium tetroxide-potassium chlorate (Solution A) overnight at room temperature, in a tightly closed glass container.

2. Wash the sections for 10 min in water (3 changes with occasional agitation).
3. Treat the sections with saturated  $\alpha$ -naphthylamine solution (B) for 20 min at 37°C.
4. Wash the sections for 5 min in water (3 changes with occasional agitation).
5. Apply coverslips, using an aqueous mounting medium.

**Result**

Normal myelin is brownish–orange. Degenerating myelin (late products only) is black. Fat, if present in the tissue, is also blackened.