Institutional Animal Care and Use Committee

THE UNIVERSITY OF MISSISSIPPI MEDICAL CENTER

IACUC Approved Recipe for Sodium Pentobarbital

Pentobarbital has a long history of effective use, especially in rodents or small mammal species. In recent years, the medication has fallen out of favor with human healthcare use and consequently, most producers have ceased producing or selling pentobarbital as an injectable pharmaceutical grade product (currently there is only one company producing Nembutal). Current costs for pharmaceutical grade pentobarbital exceeds $1000.00 per 50 ml bottle. Availability has also declined as one provider exercises a monopoly on the sales and distribution of this agent. While most researchers are able to convert to alternative medications, for certain applications and certain studies, scientific necessity requires continued use of this barbiturate. The NIH has stated that 'The exorbitant cost of this product has placed it logistically into the unavailable category. Regulatory guidance on this matter specifically allows for use of non-pharmaceutical-grade compounds due to non-availability and with IACUC approval. Therefore, the IACUC will consider and may approve requests to use a non-pharmaceutical grade of pentobarbital.

INGREDIENTS

- 6 grams sodium pentobarbital
- 10 ml ethanol (95%)
- 40 ml propylene glycol USP
- 0.9% saline

1. Dissolve the pentobarbital powder in the ethanol.
2. Add 25 ml of saline (but only after the pentobarbital is completely dissolved), mix thoroughly.
3. Add 40 ml propylene glycol, mix.
4. Bring to final volume (100 ml) with 0.9% saline.

The pentobarbital concentration in the final solution is 60 mg/ml.

NOTES

1. Stock solutions must be protected from light and maintained at 4°C for no longer than 6 months.
2. Stock solutions must be passed through a sterile 0.2 micron filter prior to being stored.
3. Stock solutions must be prepared and stored in sterile containers.
4. Please see the IACUC Policy on Use of Non-Pharmaceutical-Grade Chemicals and Compounds for guidance on filtration and preparation.
5. Working solutions can be prepared and maintained similar to stock solutions, but can be stored at room temperature for up to 30 days.
6. Transfer of solutions must utilize sterile supplies and techniques.

7. All containers must be labeled with material name, concentration, date prepared, storage requirements, expiration date, and the initials of the person making the solution.
8. Use must be recorded similar to other controlled substances.
9. Standard procedures for monitoring plane of anesthesia apply and supplemental dosing is to be given as needed.