

**Thioglycollate Induction of
Inflammatory Cells in Mice
IACUC Standard Procedure
Effective Date: August 2025**



Description of procedure:

This procedure can be used to obtain activated inflammatory leukocytes from mice, or as an analytical procedure to compare rates of leukocyte accumulation in different strains of mice.

Supplies recommended:

1. 3% wt/vol thioglycollate medium (Sigma) in double-distilled water (ddH₂O), autoclaved, prepared from dehydrated thioglycollate medium and sterile saline water. Thioglycollate solution needs to be wrapped with aluminum foil to avoid light and be placed at room temperature to age for several weeks until it becomes brown in color. The aging process is critical to the ability of thioglycollate to induce peritonitis.
2. Needles: Small gauge: 23-30G
3. Syringes: 5 cc

Procedure:

Administration:

- Fill a 5cc syringe with 3% thioglycollate medium. Attach needle and inject solution into the peritoneal cavity of each mouse.
- Dose volume: administer 2-3 ml to mice weighing ≥ 25 grams, administer 1-1.5ml to mice weighing < 25 grams.
- Anesthesia is not required for intraperitoneal injection. The mice will be euthanized for the collection of peritoneal inflammatory cells at various time points following injection. Leukocytes will accumulate rapidly in normal mice in response to the injection (e.g., large numbers of cells can be recovered after 24-48 hours). Some strains may require up to 4 days to produce adequate numbers of cells. The study will last 1-4 days post-injection, after which animals are euthanized.

Treated mice should be monitored daily for signs of discomfort, which include hunched posture, ruffled fur, or lack of movement around the cage. The [body condition score index](#) should also be used to evaluate the animal welfare.

Agents:

All non-pharmaceutical agent use must be justified and all agents administered to animals should be listed in the "Agents" section of the IACUC protocol.

Adverse effects:

Adverse effects should be listed in the "Adverse Effects" section of the IACUC protocol. Potential adverse effects include: peritonitis, lethargy, weight loss, hunched posture, ruffled fur, and lack of movement around the cage.

Alternatives Considerations Search:

Key Words	Search Site	Years Covered
Mouse, inflammatory, leukocyte, thioglycolate, peritonitis, intraperitoneal, injection, pain, distress, alternative, refinement	Pubmed	1990-2025

References:

Irving C. Allen (ed.), Mouse Models of Innate Immunity: Methods and Protocols, Methods in Molecular Biology, vol. 1031, DOI 10.1007/978-1-62703-481-4_4, © Springer Science+Business Media, LLC 2013