

## Column E Explanation

This form is intended as an aid to completing the Column E explanation. It is not an official form and its use is voluntary. Names, addresses, protocols, veterinary care programs, and the like, are required as part of an explanation. A column E explanation must be written so as to be understood by lay persons as well as scientists.

1. Registration Number: Customer # 273, Certificate # 13 – R- 0001
2. Number 0 of animals used in this study.
3. Species (common name) Guinea pigs of animals used in this study.
4. **Explain the procedure producing pain and/or distress:** This research utilizes a guinea pig model to study inflammatory bowel disease. The study is designed to investigate the changes that occur in the neuronal circuitry of the colon during inflammation. Over a million people in the U.S. suffer from debilitating inflammatory bowel disease and many more are affected by inflammatory bowel syndrome.

The guinea pigs are anesthetized for the initial procedure, which is designed to produce inflammation in the lower bowel by infusing 0.5 ml of the chemical agent trinitrobenzene sulphonic acid (TNBS) into the lumen of the guinea pig's colon by enema. Following recovery from anesthesia, animals are observed twice daily for five days followed by once daily for an additional five days. Although no analgesia is given, in most cases, the animals do not exhibit any outward signs of pain or distress: they do not vocalize on abdominal palpation; they move about their cages normally; and they maintain normal grooming activity. They are weighed daily post-infusion until they have gained weight three days in a row. Any guinea pig losing >20% of body weight in a three-day period post-infusion is painlessly euthanized. With the described procedures, the guinea pigs typically develop mild inflammatory bowel disease, then recover and resume weight gains within three to five days. The animals are painlessly euthanized over the next 3-56 days.

5. It should be noted that, at times, animals may be initially designated as category E but subsequently not utilized for the induction of inflammation, hence their actual usage corresponds to a pain category of C.

**Provide scientific justification why pain and/or distress could not be relieved.**

**State methods used to determine that pain and/or distress relief would interfere with test results.**

The analgesic agent buprenorphine and other opiates decrease intestinal motility which may result in increased TNBS residence time in the colon. This potentially alters the inflammatory response and hence the scientific findings of the study.

6. Similarly, the post-procedural use of non-steroidal anti-inflammatory agents in this study is likely to affect the inflammatory disease itself and invalidate the scientific findings.

**What federal regulations require this procedure?** Not Applicable.

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