

1. Which of the following did Hains et al. (2010) demonstrate to lower the rats' threshold for paw withdrawal from mechanical stimuli (allodynia)?
 - a. Answers B, C, and D
 - b. Sham surgery followed by vehicle injection
 - c. Sham surgery followed by LPS injection
 - d. Laparotomy followed by vehicle injection
 - e. Laparotomy followed by LPS injection
2. Which of the following increased the expression of a marker for activated microglia (OX-42) in lumbar spinal cord L4-L5 (as shown in the results of Hains et al., 2010)?
 - a. Laparotomy
 - b. LPS injection
 - c. Both A & B
 - d. Formalin followed by gp120
 - e. All of the above
3. Why was the observed microglial activation specific for lumbar spinal cord L4-L5?
 - a. The length of intestine manipulated during laparotomy is innervated by projections from lumbar spinal segments
 - b. The skin and muscle that is cut during laparotomy is innervated by projections from lumbar spinal segments
 - c. LPS specifically targets lumbar spinal segments
 - d. The cervical spinal cord had been severed
 - e. Microglia are only found in lumbar spinal segments
4. Why was minocycline used in the study?
 - a. To be one of the challenges in another "two-hit" paradigm
 - b. To treat the animals after LPS injection since it is an antibiotic
 - c. To prevent non-specific staining and background noise in the immunohistochemistry staining procedure
 - d. To see if the effects were dependent on the activation of nociceptors (pain receptors)
 - e. To see if the effects were dependent on microglial activation
5. This study was the *first* to demonstrate..
 - a. Two successive inflammatory challenges, although separated in time by 2 weeks, are able to synergistically increase animals' sensitivity to pain
 - b. Inflammatory challenges cause persistent expression of microglial activation markers
 - c. Potentiated microglial inflammatory responses are not specific to persistent PNS infection, having now been shown following persistent infection in the CNS
 - d. The mechanisms underlying microglial priming
 - e. Astrocytes are not affected by two successive inflammatory challenges