



NTP Nonneoplastic Lesion Atlas

Spleen – Hyperplasia, Mast Cell

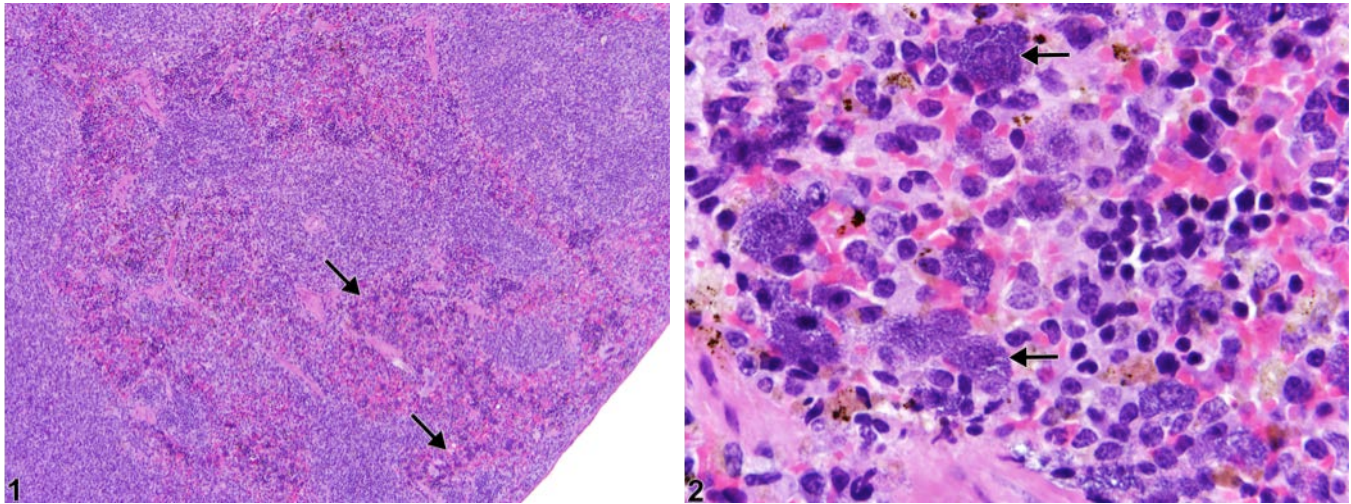


Figure Legend: **Figure 1** Spleen - Hyperplasia, Mast cell in a female B6C3F1/N mouse from a chronic study. Multifocal aggregates of mast cells (arrows) are present within the splenic red pulp. **Figure 2** Spleen - Hyperplasia, Mast cell in a female B6C3F1/N mouse from a chronic study (higher magnification of Figure 1). Clusters of well-differentiated mast cells (arrows) are intermixed with other red pulp cellular components.

Comment: Mast cell hyperplasia can be seen within the spleen of rodents. This lesion is characterized by loose aggregates of well-differentiated mast cells within the splenic red pulp that are not associated with inflammation. Mast cells are relatively large cells with abundant cytoplasm and typically have numerous densely basophilic intracytoplasmic granules that may obscure the nucleus (Figure 1 and Figure 2, arrows), although they may also present with prominent pale basophilic cytoplasm and less apparent granules. Mast cell hyperplasia must be differentiated from metastatic mast cell tumors. Mast cells within the spleen in the absence of a primary mast cell tumor are supportive of a hyperplastic rather than a neoplastic lesion.

Recommendation: Whenever present, mast cell hyperplasia of the spleen should be diagnosed and assigned a severity grade.



NTP Nonneoplastic Lesion Atlas

Spleen – Hyperplasia, Mast Cell

References:

National Toxicology Program. 2005. NTP TR-513. Toxicology and Carcinogenesis Studies of Decalin (CAS No. 91-7-8) in F344/N Rats and B6C3F1 Mice (Feed Studies). NTP, Research Triangle Park, NC. Abstract: <http://ntp.niehs.nih.gov/go/7721>

Suttie AW. 2006. Histopathology of the spleen. *Toxicol Pathol* 34:466-503.
Full Text: <http://tpx.sagepub.com/content/34/5/466.full.pdf>

Ward JM, Mann PC, Morishima H, Frith CH. 1999. Thymus, spleen, and lymph nodes. In: *Pathology of the Mouse* (Maronpot RR, ed). Cache River Press, Vienna, IL, 333-360.

Authors:

Kristen Hobbie, DVM, PhD
Principal Pathologist
Huntingdon Life Sciences
Peterborough, UK

Susan A. Elmore, MS, DVM, DACVP, DABT, FIATP
Staff Scientist, NTP Pathologist
NTP Pathology Group
National Toxicology Program
National Institute of Environmental Health Sciences
Research Triangle Park, NC

Holly M. Kolenda-Roberts, DVM, PhD, DACVP
Veterinary Pathologist
SNBL USA
Everett, WA