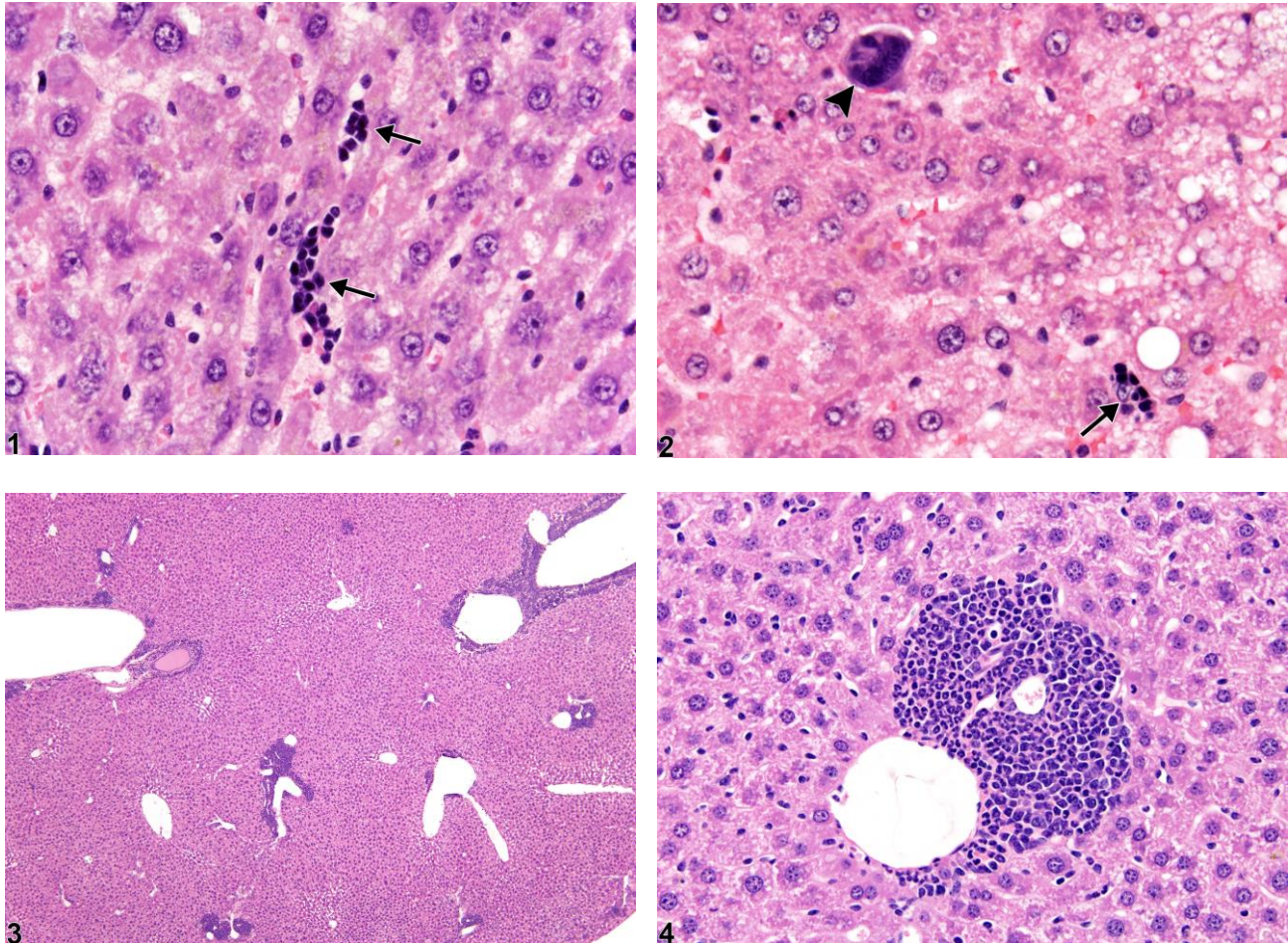




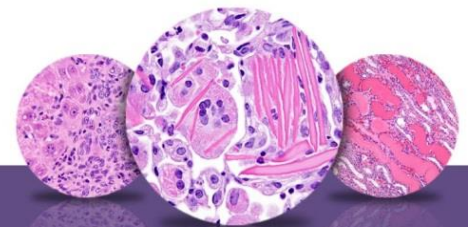
# NTP Nonneoplastic Lesion Atlas

## Liver – Extramedullary Hematopoiesis



**Figure Legend:** **Figure 1** Extramedullary hematopoiesis—arrows indicate erythroid cells in a female Harlan Sprague-Dawley rat from a chronic study. **Figure 2** Extramedullary hematopoiesis—arrow indicates erythroid cells, and arrowhead indicates a megakaryocyte, in a female Harlan Sprague-Dawley rat from a chronic study. **Figure 3** Extramedullary hematopoiesis in a male B6C3F1 mouse from a chronic study. **Figure 4** Extramedullary hematopoiesis in a male B6C3F1 mouse from a chronic study.

**Comment:** Extramedullary hematopoiesis is unexpected in adult rodents and is typically associated with pathologic conditions. It is distinguished from inflammatory cell infiltrates by the presence of nucleated erythrocytes, immature granulocytes, and/or undifferentiated progenitor cells in the absence of associated hepatocellular necrosis. Clusters of erythroid cells are present in Figure 1 and Figure 2 (arrows). It is most often seen in animals treated with a toxicant



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and may be associated with hepatocellular degeneration, pigment deposition, and/or fatty change (Figure 2). A megakaryocyte is present in Figure 2 (arrowhead). Multiple perivascular cellular accumulations in Figure 3 and Figure 4 consist predominantly of developing granulocytes.

**Recommendation:** Whenever present, extramedullary hematopoiesis should be diagnosed and graded. Examination of bone marrow, lymph node, and spleen sections may show a correlation with extramedullary hematopoiesis in the liver. The types of cells involved (e.g., erythroid, granulocytic, mixed) should be indicated in the pathology narrative if they can be identified.

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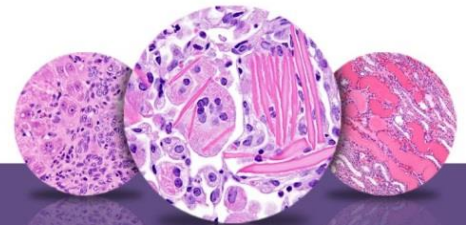
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National Toxicology Program  
U.S. Department of Health and Human Services



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