

We claim:

1. A mouse, comprising:
a λ light chain variable region sequence ($V\lambda$) and at least one J sequence (J),
contiguous with a mouse κ light chain constant region sequence.
2. The mouse of claim 1, wherein the mouse lacks a functional mouse $V\kappa$ and/or mouse $J\kappa$ gene segment.
3. The mouse of claim 1, wherein the $V\lambda$ is a human $V\lambda$ ($hV\lambda$), and the J is a human $J\lambda$ ($hJ\lambda$).
4. The mouse of claim 3, wherein the $hV\lambda$ and the $hJ\lambda$ are unrearranged gene segments.
5. The mouse of claim 4, comprising a plurality of unrearranged $hV\lambda$ gene segments and at least one $hJ\lambda$ gene segment.
6. The mouse of claim 5, wherein the plurality of unrearranged $hV\lambda$ gene segments are at least 12 gene segments, at least 28 gene segments, or at least 40 gene segments.
7. The mouse of claim 3, wherein the at least one $hJ\lambda$ gene segment is selected from the group consisting of $J\lambda 1$, $J\lambda 2$, $J\lambda 3$, $J\lambda 7$, and a combination thereof.
8. The mouse of claim 1, wherein an endogenous mouse λ light chain locus is deleted in whole or in part.
9. The mouse of claim 1, wherein the mouse κ light chain constant region sequence is at an endogenous mouse κ light chain locus.
10. The mouse of claim 1, wherein about 10% to about 45% of the B cells of the mouse express an antibody that comprises a light chain comprising a human λ light chain variable ($V\lambda$) domain and a mouse κ light chain constant ($C\kappa$) domain.

11. The mouse of claim 10, wherein the human λ variable domain is derived from a rearranged hV λ /hJ λ sequence selected from the group consisting of 3-1/1, 3-1/7, 4-3/1, 4-3/7, 2-8/1, 3-9/1, 3-10/1, 3-10/3, 3-10/7, 2-14/1, 3-19/1, 2-23/1, 3-25/1, 1-40/1, 1-40/2, 1-40/3, 1-40/7, 7-43/1, 7-43/3, 1-44/1, 1-44/7, 5-45/1, 5-45/2, 5-45/7, 7-46/1, 7-46/2, 7-46/7, 9-49/1, 9-49/2, 9-49/7 and 1-51/1.
12. The mouse of claim 1, further comprising a human V κ -J κ intergenic region from a human κ light chain locus, wherein the human V κ -J κ intergenic region is contiguous with the V λ sequence and the J sequence.
13. The mouse of claim 12, wherein the human V κ -J κ intergenic region is placed between the V λ sequence and the J sequence.
14. A mouse comprising:
- (a) at least 12 to at least 40 unrearranged human λ light chain variable region gene segments and at least one human J λ gene segment at an endogenous mouse light chain locus;
 - (b) a human V κ -J κ intergenic sequence located between the at least 12 to at least 40 human light chain variable region gene segments and the at least one human J λ sequence;
- wherein the mouse express an antibody that comprises a light chain comprising a human V λ domain and a mouse C κ domain.
15. A mouse that expresses an antibody comprising a light chain that comprises a λ variable sequence and a κ constant sequence.
16. The mouse of claim 15, wherein the mouse exhibits a κ usage to λ usage ratio of about 1:1.
17. The mouse of claim 16, wherein a population of immature B cells obtained from bone marrow of the mouse exhibits a κ usage to λ usage ratio of about 1:1.
18. Use of a mouse according to claims 1-17 to make an antigen-binding protein.
19. An antigen-binding protein made using a mouse according to claims 1-17.

20. A cell or tissue derived from a mouse according to claims 1-17.

CLAIMS

1. A mouse comprising at an endogenous κ light chain locus in its germline:

(a) an unrearranged light chain variable region comprising a plurality of contiguous unrearranged functional human λ light chain V (hV λ) gene segments and a plurality of contiguous unrearranged functional human λ light chain J (hJ λ) gene segments, wherein the plurality of hV λ gene segments and the plurality of hJ λ gene segments are the only functional variable region gene segments in the unrearranged light chain variable region; and

(b) a mouse κ light chain constant region gene, wherein the plurality of contiguous unrearranged functional human λ light chain V (hV λ) gene segments and the plurality of contiguous unrearranged functional human λ light chain J (hJ λ) gene segments are operably linked to the mouse κ light chain constant region gene such that the unrearranged light chain variable region is capable of rearranging to form a rearranged human λ light chain variable region and the mouse expresses antibodies comprising a light chain comprising a variable region encoded by the rearranged human λ light chain variable region and a constant region encoded by the mouse κ light chain constant region gene.

2. The mouse of claim 1, wherein the plurality of unrearranged hV λ gene segments are at least 12 hV λ gene segments.
3. The mouse of claim 1, wherein the plurality of hJ λ gene segments are selected from the group consisting of J λ 1, J λ 2, J λ 3, J λ 7, and a combination thereof.
4. The mouse of claim 1, wherein an endogenous mouse X light chain locus is deleted in whole or in part.
5. The mouse of claim 1, wherein about 10% to about 45% of the B cells of the mouse express the antibodies comprising a light chain comprising a variable region encoded by the rearranged human λ light chain variable region and a constant region encoded by the mouse κ light chain constant region gene.

6. The mouse of claim 5, wherein the light chain variable region of the antibody is 3-1/1, 3-1/7, 4-3/1, 4-3/7, 2-8/1, 3-9/1, 3-10/1, 3-10/3, 3-10/7, 2-14/1, 3-19/1, 2-23/1, 3-25/1, 1-40/1, 1-40/2, 1-40/3, 1-40/7, 7-43/1, 7-43/3, 1-44/1, 1-44/7, 5-45/1, 5-45/2, 5-45/7, 7-46/1, 7-46/2, 7-46/7, 9-49/1, 9-49/2, 9-49/7 and 1-51/1.
7. The mouse of claim 1, wherein the unrearranged light chain variable region comprises a human V κ -J κ intergenic region from a human κ light chain locus located downstream of the most 3' hV λ gene segment and upstream of the most 5' hJ λ gene segment.
8. A mouse comprising at an endogenous κ light chain locus in its germline:
- (a) an unrearranged light chain variable region comprising:
 - (i) at least 12 contiguous unrearranged functional human λ light chain variable region (hV λ) gene segments and a plurality of contiguous unrearranged functional human λ light chain J (hJ λ) gene segments, wherein the at least 12 functional hV λ gene segments and the plurality of functional hJ λ gene segments are the only functional variable region gene segments in the unrearranged light chain variable region; and
 - (ii) a human V κ -J κ intergenic sequence located between the contiguous hV λ gene segments and the plurality of contiguous hJ λ gene segments; and
 - (b) a mouse κ light chain constant region gene; wherein the at least 12 contiguous unrearranged functional human λ light chain V (hV λ) gene segments and the plurality of contiguous unrearranged functional human λ light chain J (hJ λ) gene segments are operably linked to the mouse κ light chain constant region gene such that the unrearranged light chain variable region is capable of rearranging to form a rearranged human λ light chain variable region and the mouse expresses antibodies comprising a light chain comprising a variable region encoded by the rearranged human λ light chain variable region and a constant region encoded by the mouse κ light chain constant region gene.
9. The mouse of claim 8, wherein the unrearranged light chain variable region comprises at least 28 unrearranged hV λ gene segments.
10. The mouse of claim 8, wherein the unrearranged light chain variable region comprises at least 40 unrearranged hV λ gene segments.

11. The mouse of claim 7, wherein the human V κ -J κ intergenic region comprises SEQ ID NO: 100.
12. An isolated cell of the mouse of claim 1.
13. The cell of claim 12, wherein the cell is a B cell.
14. An isolated cell of the mouse of claim 8.
15. The cell of claim 14, wherein the cell is a B cell.
16. The mouse of claim 1, wherein the plurality of hJ λ gene segments comprises 4 hJ λ gene segments.
17. The mouse of claim 16, wherein the 4 hJ λ gene segments are J λ 1, J λ 2, J λ 3 and J λ 7.
18. The mouse of claim 8, wherein the plurality of hJ λ gene segments comprises 4 hJ λ gene segments.
19. The mouse of claim 18, wherein the 4 hJ λ gene segments are J λ 1, J λ 2, J λ 3 and J λ 7.