

Selecting the right host is critical when discovering novel antibodies using the hybridoma approach. Below is a quick comparison of commonly used rodents in antibody discovery campaigns.

Transgenic Mice*



Advantages

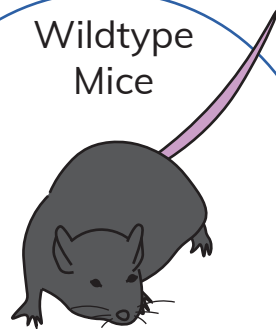
- Fully human variable regions (VH and VL domains)
- Reduced antigenicity preserves in vivo efficacy
- Improved developability (humanization not required/in vitro affinity maturation often not required)

Considerations

- Increased cost when compared with WT mice
- Licensing terms required
- Immune response can take longer to develop compared to WT mice
- If human/ mouse targets have high identity, or if mouse cross-reactivity is required, tolerance-breaking approaches likely needed

*Human Antibody Producing

Wildtype Mice



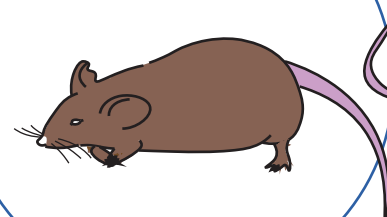
Advantages

- Low cost: no terms, royalties, or milestones
- Proven, tried-and-true platform: most FDA-approved mAbs were discovered using WT mice

Considerations

- If human/mouse targets have high identity, or if mouse cross-reactivity is required, tolerance-breaking approaches likely needed
- For therapeutics applications, Ab reformatting and/or humanization might be required

Target Knock-out Mice



Advantages

- A preferred option if mouse/human share high identity, or if mouse cross-reactivity is required

Considerations

- For therapeutics applications, Ab reformatting and/or humanization might be required
- Depending on the function of the target gene, KO mice may have impaired adaptive immune responses, hindering in vivo Ab generation

Wildtype Rats



Advantages

- Low cost: no terms, royalties, or milestones
- A preferred option if mouse cross-reactivity is required
- Rat B cells are compatible fusion partners with LakePharma's myeloma cell line

Considerations

- For therapeutics applications, Ab reformatting and/or humanization might be required
- Rat immunizations require 4x as much antigen per animal as mouse immunizations.