#### **Reducing mice required in research:**

# Genetic modification of mice without the need for extensive breeding

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### Gene alteration in mice – a biomedical revolution

- $\rightarrow$  Genetic alteration has enabled
  - ightarrow modeling of human disease
  - $\rightarrow$  accurate investigation of gene function
- $\rightarrow$  ... has also caused a dramatic increase in use of mice

### Most Gene altered mice not used for experiments



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### AAVs as a safe and efficient alternative – but works only in a few cell types





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### We will identify new cap genes to expand AAV use



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### Selection of cap genes by Cre-dependent PCR



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## Aorta, kidney and spleen are effectively transduced



Cre-dependent \_\_\_\_\_



### **3 AAV-cap sequences have been selected**



### The AAV based approach has several benefits

|             | Conventional methods            | New approach |
|-------------|---------------------------------|--------------|
| Time        | 1.5 years                       | 1.5 months   |
| Costs       | A lot!                          | A little     |
| Labour      | A lot!                          | A little     |
| Mouse use   | A lot!                          | ↓75%         |
| Feasibility | Requires specialized facilities | Easy         |

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