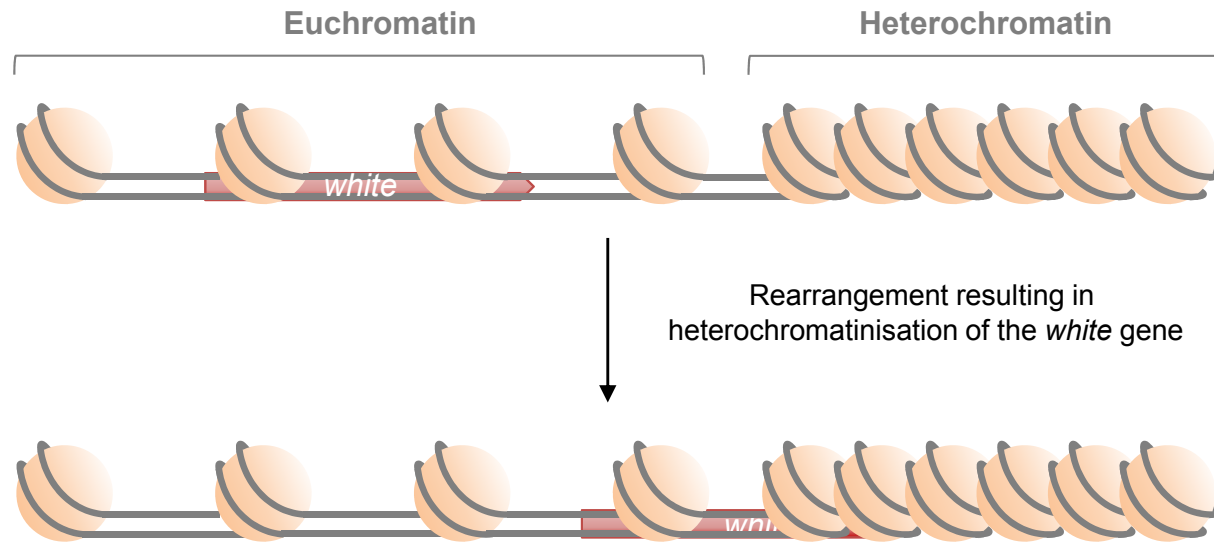
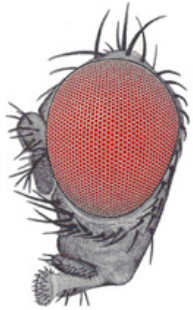
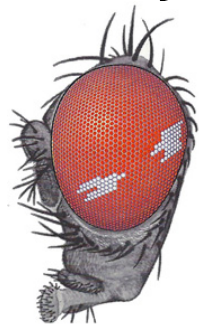
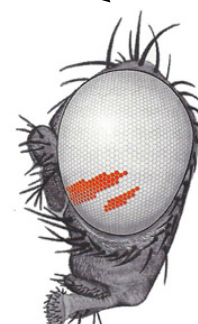




Forward genetic screens to identify genes involved in the silencing of the *white* gene



Suppressors of variegation
Su(var) genes

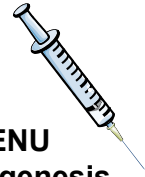


Enhancers of variegation
E(var) genes

Multicopy transgene
subject to variable
epigenetic silencing



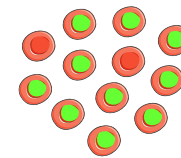
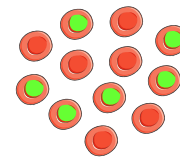
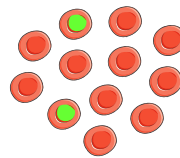
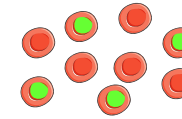
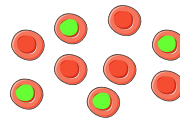
ENU
mutagenesis



X



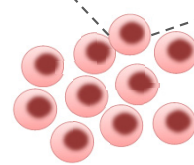
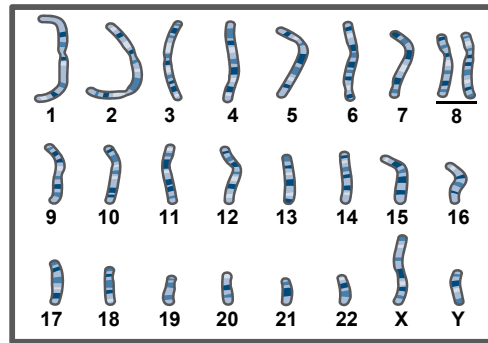
GFP expression in
~55% of erythrocytes



Decreased % GFP
Mutation enhances silencing

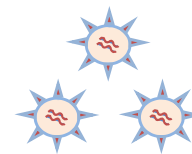
GFP Unchanged
Irrelevant mutation

Increased % GFP
Mutation inhibits silencing



KBM7 cells

+



Gene-trap retrovirus

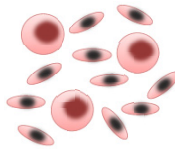


Phenotypic Selection

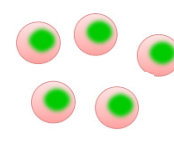
Lethal insult



Rare resistant cells



FACS

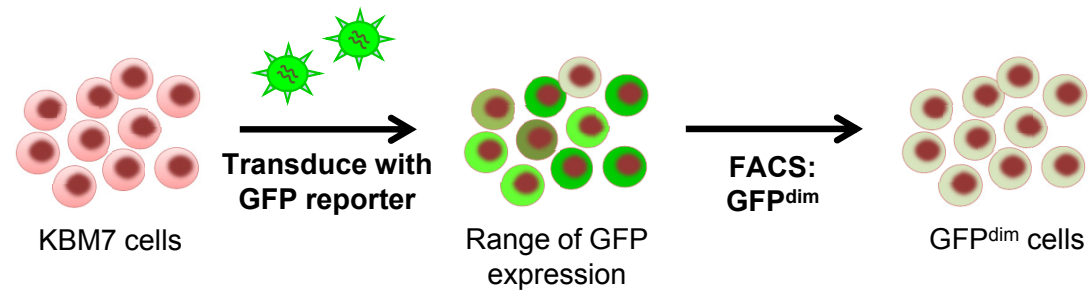


Rare cells expressing altered levels of a fluorescent reporter or cell surface protein

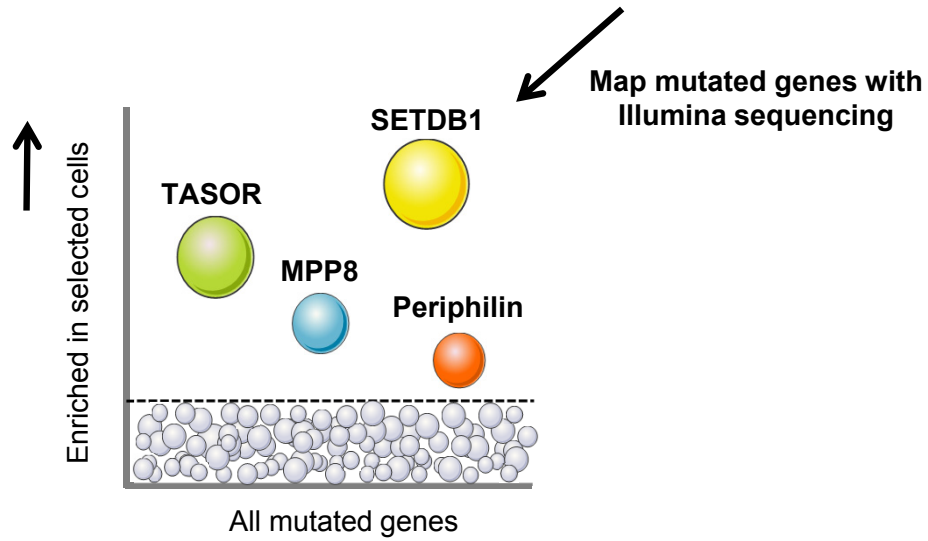
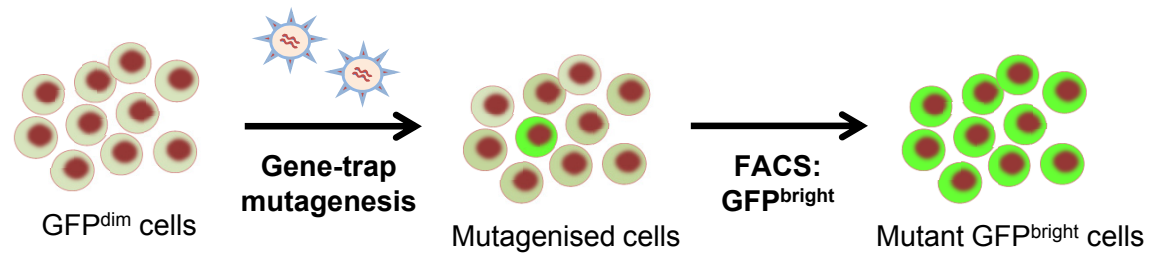


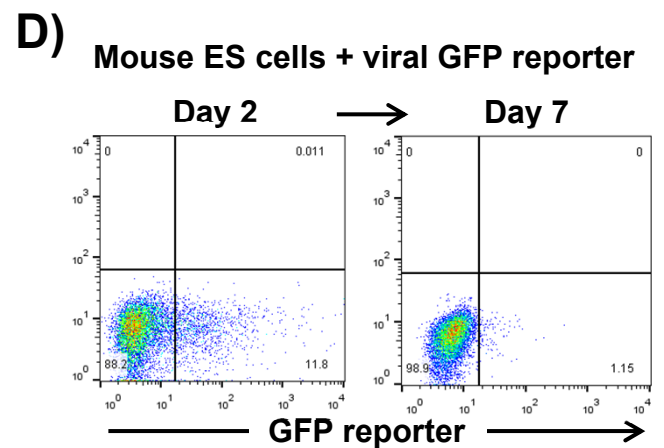
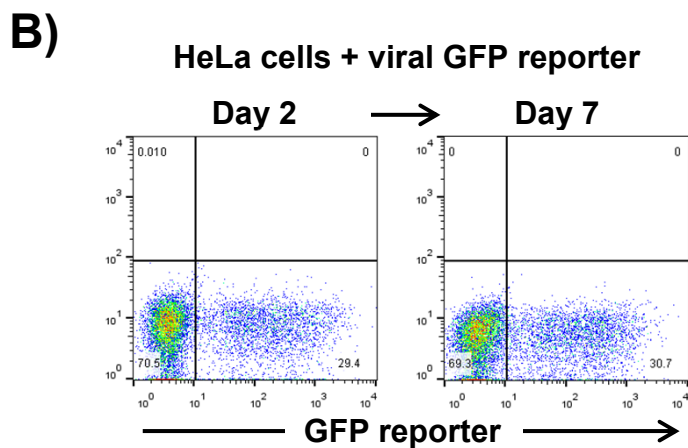
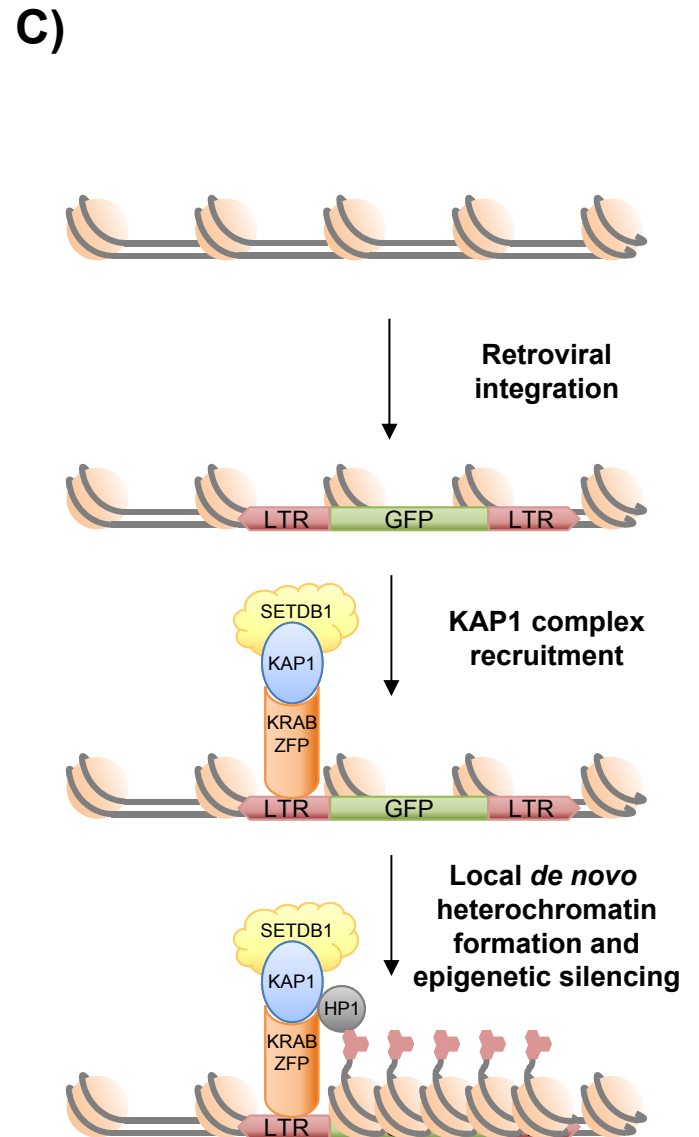
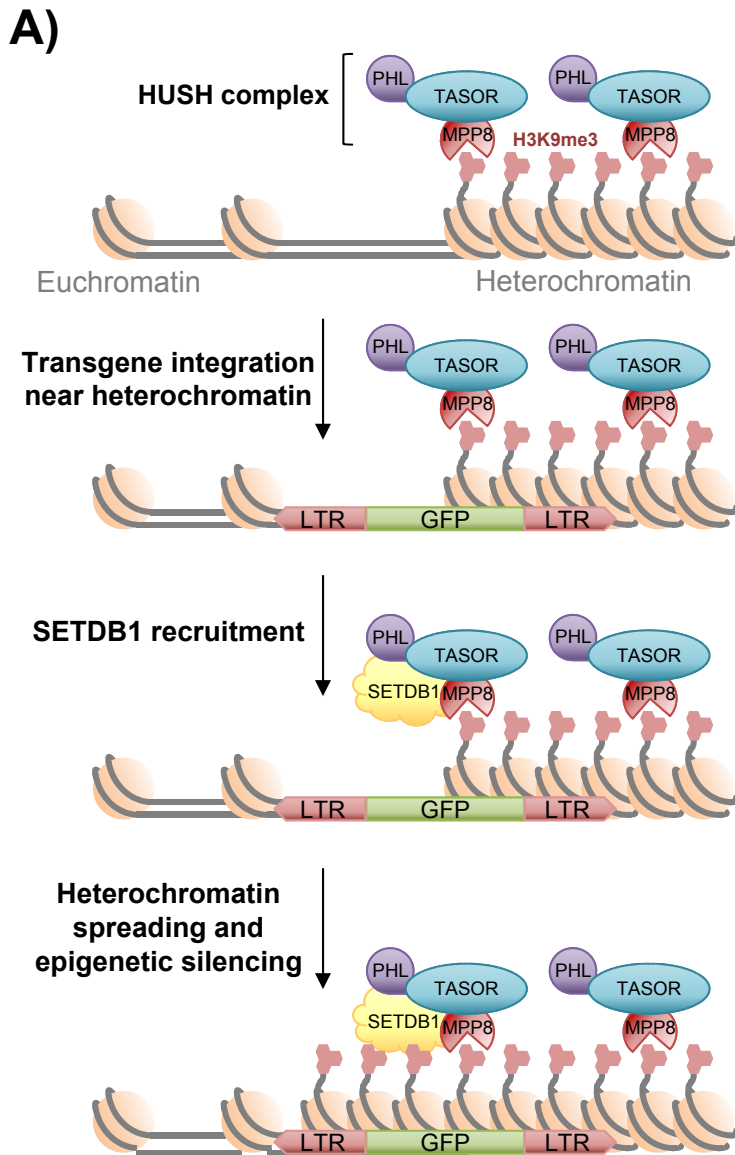
Map gene-trap retroviral integration sites to reveal the genes involved in the biological process

A)



B)





L130P mutation (L135 in human) abrogates transgene silencing in the mouse [39]

