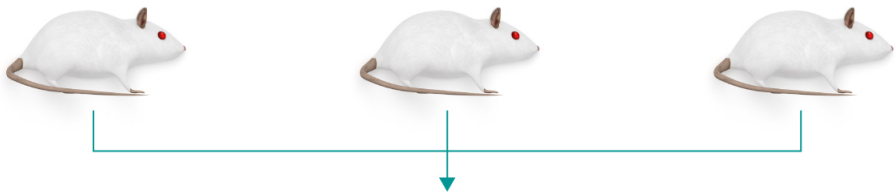
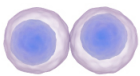
Folate dietary insufficiency and folic acid supplementation similarly impair metabolism and compromise hematopoiesis

Control folate diet
(FD; **2 mg**/ kg folic acid)

Deficient folate diet
(FD; **0.1 mg**/ kg folic acid)

Supra folate diet
(FD; **10 mg**/ kg folic acid)





- Mass Spectrometry Analysis for Organ Metabolomics
- Competitive bone marrow transplantation
- Flow Cytometric Analysis and Complete Blood Counts

Both low and high levels of dietary folate

- Promote similar metabolic defects in hematopoietic cells
  - particularly evident for nucleotide biosynthetic pathways in B-progenitor cells
- Compromise hematopoiesis
  - defective cell cycle progression
  - persistent DNA damage
  - impaired production of lymphocytes
- Impair Hematopoietic Reconstitution Post-Irradiation and increase radiation-induced mortality

Henry *et al.*, Haematologica, 2017