THE FOLLOWING CONTAINS LITERATURE ON GENOTYPING FOR MODEL ORGANISMS

TITLE: “A review on genotyping for model organisms”

CRITERIA: Focus getting papers using model organisms of choice.
For the start, these are the model organisms:

01 Mice
02 Rats
03 Monkeys
04 Nematodes (Celegans)
05 Arabidopsis thaliana
06 Kili fish
07 medaka fish

- The choice of the above is also inspired by what is already available in the GeneNetwork web server.

01 Papers on mice as a model organism

a) **Title:** From chip to SNP: Rapid development and evaluation of a targeted capture genotyping-by-sequencing approach to support research and management of a plaguing rodent.
DOI: 10.1371/journal.pone.0288701
Why this paper?
   - Focuses on mice (a suitable model organisms)
   - Generation of high density SNPs
   - Compares array based SNP genotyping method to sequencing based SNP genotyping method

b) **Title:** Reliable and Fast Genotyping Protocol for Galactosylceramidase (Galc) in the Twitcher (Twi) Mouse
DOI: https://doi.org/10.3390/biomedicines10123146
Why this paper:
   - Focus model organism: mice
   - SNP genotyping using Real time pcr (a legacy technique worth discussing)

c) **Title:** Impact of Automated Genotyping and Increased Breeding Oversight on Overall Mouse Breeding Colony Productivity
DOI: https://doi.org/10.3389/fphys.2022.925784
Why this paper?
   - Main focus on mice, and why they are one of the suitable and important model organisms
   - How genotyping helps improve breeding applications for model organisms (more on genotyping applications)

- A bit on automated genotyping (another improved pcr based genotyping)

d) **Title:** High-throughput genotyping of high-homology mutant mouse strains by next-generation sequencing
DOI: https://doi.org/10.1016/j.ymeth.2020.10.011
Why this paper?
   - Model organism of interest: mice/CRISPR mutant mice
   - Explores NGS based genotyping approach to qPCR on high-homology mutant mice strains.
     - NGS is more accurate, possible to filter noise from signal due to the precise sequenced reads on the regions of interest unlike qPCR
   - Covers advanced genotyping methods (NGS), application in studying mutations in mice

e) **Title:** A new mouse SNP genotyping assay for speed congenics: combining flexibility, affordability, and power
DOI: https://doi.org/10.1186/s12864-021-07698-9
Why this paper?
   - Focuses on congenic mice to study gene functions (model organism covered)
   - NGS approach for more efficiency and saving time, cost and more scalability (genotyping method covered)
   - Preferred genotyping method the speed congenics tools used to generate congenic mice (application covered)

f) **Title:** Cleaning Genotype Data from Diversity Outbred Mice
DOI: https://doi.org/10.1534/g3.119.400165
Why this paper?
   - Outbred mice discussed (model organism at play)
   - Data cleaning as part of the genotyping methods to improve accuracy (methods)
   - Qtl mapping covered in relation to genotyping (application of genotyping)

02 Paper on Rats as model organisms

a) **Title:** A cost-effective, high-throughput, highly accurate genotyping method for outbred populations
DOI: https://doi.org/10.1093/g3journal/jkae291
Why this paper?
   - Covers HS rats (model organism)
   - Compares NGS based genotyping methods
   - A bit on application to population genetics

b) **Title:** Genetic characterization of outbred Sprague Dawley rats and utility for genome-wide association studies
DOI: https://doi.org/10.1371/journal.pgen.1010234
Why this paper?

- Focuses on Sprague Dawley (SD) rats (outbred lab rats)
- ddGBS genotyping technique, a state of the art NGS based approach
- Applications reflecting population genetics, neuroscience, and pharmacological research (good stuff for GN)

c) **Title:** Genome wide association study in 3,173 outbred rats identifies multiple loci for body weight, adiposity, and fasting glucose
DOI: https://doi.org/10.1002/oby.22927
Why this paper?
   - Focuses on N/NIH outbred rats (why they are a suitable model for genetic studies and complex diseases)
   - The study explores complex traits associated with obesity
   - Uses GBS based genotyping (state of the art genotyping technique)

d) **Title:** Adapting Genotyping-by-Sequencing and Variant Calling for Heterogeneous Stock Rats
DOI: https://doi.org/10.1534/g3.120.401325
Why this paper?
   - Focuses on NIH outbred rats
   - GBS genotyping method over microarray and WGS methods (put to consideration, cost, time and dealing with heterogeneity in HS rats)