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Efficient Identification and Cloning of Single Gene Deletions in the Nematode *Caenorhabditis elegans*

Integrated GE³LS Research

Assessing the use and impact of genomic resources released into the public domain

GE³LS Project Leaders

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Summary

The aim of this GE³LS project is to track the use of data and research materials produced by the *C. elegans* Gene Knockout Consortium (GKC) in order to understand how public domain information is accessed, used and incorporated into scientists' work.

Researchers, funding bodies and society debate the benefits of moving scientific knowledge into the public domain as a means to maximize accessibility. By making basic research publically available, opportunities are created for new scientific innovation to be developed. We are working to provide examples of the uptake from the public domain by focusing on the use of one particular research project's body of publicly released data. By tracking the use of this openly available data source we are able to better understand how an open science system functions. Using the *C. elegans* Gene Knockout Consortium (GKC) and the community of researchers who use *C. elegans* as a case study we are exploring how information is distributed through the public domain by tracking the products (publications and patents) that arise from these freely released materials.

The *C. elegans* GKC was created in 2001 as a central large-scale production system used to generate *C. elegans* with knocked out or deleted genes creating the tools and worm strains with which other researchers can address specific basic biological and disease-related problems. The consortium is a prime example of public domain science in action as it shares all data and reagents with the public prior to publication. Genetic material, data and worms are made freely available to everyone, without restrictions from copyright, patents or other proprietary mechanisms.

This GE³LS research project will explore the social and legal impact of the GKC and its practice of releasing data into the public domain. Members of the GE³LS team are analyzing how the GKC distributes worms (and their genetic data) in order to understand the downstream impact of this practice. Through the analysis of publications and patents which reference the use of *C. elegans* and the knockout consortium we aim to illustrate the process and exchange networks through which this upstream open science system functions.

http://www.genomebc.ca/ethics/research/activities/c_elegans.htm