Assessing the Suitability of C. elegans hum-7 as a Model for Celiac Disease

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C. elegans is a viable homolog for multitudes of human genetic disorders; research using C. elegans previously has benefited those afflicted with some disorders. The purpose of this study was to ascertain whether C. elegans hum-7's lpd-3 protein is suitable as a homolog to the human protein, KIAA1109, which is implicated in celiac disease. Mutant and wild type worms were obtained and placed on plates containing three increasing percentages of gluten mixed into NGM. Worms were photographed and harvested from plates after seven to ten days and proteins were extracted for use in a Western blot test using human KIAA1109 antibody and secondary mouse antibodies. Image J was also used to record the size of worms in length and width for secondary comparisons. The levels of KIAA1109 in wild type versus hum-7 mutants should mimic those in humans with celiac disease who are exposed to gluten and the size variance should show that gluten stunts hum-7 growth. This would potentially provide evidence supporting or negating the use of C. elegans as a model for celiac disease.

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