Abstract

The Wnt signalling pathway is highly conserved signalling among Eukaryotes that regulates many cellular processes. In particular, it plays a role during invidual´s development, but it is also important at later stage of life, when it is involved in maintaining homeostasis in the body. Recent studies have shown that phosphatidylinositol-4-phospahte 5-kinase (PIP5K), which is key to the production of phosphatidylinositol (4,5)-bisphosphate in the cell, is also involved in regulation of the canonical Wnt signalling cascade. In mammalian cells, a model has been described in which PIP5K is involved in signal transduction in a Wnt receiving cell. We decided to verify the involvement of PIP5K in the regulation of Wnt signalling also in *Caenorhabditis elegans*, an excellent model organism for study of signalling pathways, and thus contribute to a better understanding of this evolutionarily conserved pathway.

In this work, we found that decreased expression of PPK-1/PIP5K in wild type animals does not result in Wnt signalling disruption. Nevertheless, in conditions, where the activity of Wnt signalling is already reduced, decrease in PPK-1 levels leads to defective migration of the QL neuroblast daughter cell. By analyzing the migration of QL progeny, which is controlled by EGL-20/Wnt dependent Wnt signalling, we revealed the genetic interactions of *ppk-1* with some members of this pathway. We also observed the effect of PPK-1 on Wnt signalling dependent on LIN-44/Wnt, which regulates cell polarity. Unfortunately, we were unable to establish the mechanism by which PPK-1 regulates the Wnt signalling pathway in *Caenorhabditis elegans.*