Annotation of the *Kytococcus sedentarius* Genome from DNA Coordinates 807009 to 813566

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**Abstract**

Four consecutive genes (Ksed_07990, Ksed_08010, Ksed_08020, Ksed_08030) from the gram-positive microorganism *Kytococcus sedentarius* from DNA coordinates 807009-813566 were examined in this study. These genes were analyzed using the several GENI-ACT modules (including Cellular Localization Data and Sequence Based Similarity Data) in order to determine if any similarities to other genes were tested using Protein BLAST and CDD to determine their possible respective functions. Their similarities were determined by analyzing their E-Values. Each of these four genes were found to reside and function in the cell’s membrane.

**Methods and Materials**

These modules of GENI-ACT were used to complete the *Kytococcus sedentarius* gene annotation. The modules are described below.

**Kytococcus sedentarius (Ksed)**

This project is a part of a collaborative effort involving several members of the laboratory at Western New York Genetics in Research Partnership. The project is conducted in collaboration with Dr. Robert Das, *St. John Fisher College* and Dr. Stephen Ra, *University of Buffalo*. The project is supported by NSF. All of the protein sequences used are from *Kytooccus sedentarius*.

**Results**

Using the modules and databases listed in the results for each individual gene for *Kytococcus sedentarius* it was determined that all of the genes analyzed reside in or on the cell’s membrane. The differences lie in their individual functions.

*Kytococcus sedentarius* 07970: The gene is located in the membrane and is involved in the transmembrane protein. This gene codes for a transmembrane protein.

*Kytooccus sedentarius* 08000: The gene is a peripheral protein and is located outside the membrane. This gene codes for a peripheral protein.

*Kytooccus sedentarius* 08010: This gene is a peripheral protein and is located outside the membrane. This gene codes for a peripheral protein.

*Kytooccus sedentarius* 08020: This gene is a peripheral protein and is located outside the membrane. This gene codes for a peripheral protein.

**Conclusion**

The proteins that were researched were assigned the same annotations that GENI-ACT recommended All other proteins reside on the *Kytooccus sedentarius* cell membrane.

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**References**


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