

FLT4 gene

fms related receptor tyrosine kinase 4

Normal Function

The *FLT4* gene provides instructions for making a protein called vascular endothelial growth factor receptor 3 (VEGFR-3), which regulates the development and maintenance of the lymphatic system. The lymphatic system produces and transports fluids and immune cells throughout the body. VEGFR-3 is turned on (activated) by two proteins called vascular endothelial growth factor C (VEGF-C) and vascular endothelial growth factor D (VEGF-D). When VEGF-C and VEGF-D attach (bind) to VEGFR-3, chemical signals are produced that regulate the growth, movement, and survival of lymphatic cells.

Health Conditions Related to Genetic Changes

Milroy disease

At least 19 mutations in the *FLT4* gene have been found to cause Milroy disease. Most mutations in this gene change a single protein building block (amino acid) in regions known as tyrosine kinase domains. Mutations in these regions disrupt VEGFR-3 signaling and cause the tubes that carry lymph fluid (lymphatic vessels) to be small or absent. If lymph fluid is not properly transported, it builds up in the body's tissues and causes swelling (lymphedema). It is not known how mutations in the *FLT4* gene lead to the other signs and symptoms of Milroy disease.

Other Names for This Gene

- FLT41
- fms-related tyrosine kinase 4
- vascular endothelial growth factor receptor 3
- VEGFR3
- VGFR3_HUMAN

Additional Information & Resources

Tests Listed in the Genetic Testing Registry

- Tests of FLT4 ([https://www.ncbi.nlm.nih.gov/gtr/all/tests/?term=2324\[geneid\]](https://www.ncbi.nlm.nih.gov/gtr/all/tests/?term=2324[geneid]))

Scientific Articles on PubMed

- PubMed (<https://pubmed.ncbi.nlm.nih.gov/?term=%28FLT4%5BTIAB%5D%29+OR+%28%28FLT41%5BTIAB%5D%29+OR+%28vascular+endothelial+growth+factor+receptor+3%5BTIAB%5D%29+OR+%28VEGFR3%5BTIAB%5D%29%29+AND+%28%28Genes%5BMH%5D%29+OR+%28Genetic+Phenomena%5BMH%5D%29%29+AND+english%5Bla%5D+AND+human%5Bmh%5D+AND+%22last+1440+days%22%5Bdp%5D>)

Catalog of Genes and Diseases from OMIM

- FMS-LIKE TYROSINE KINASE 4; FLT4 (<https://omim.org/entry/136352>)

Gene and Variant Databases

- NCBI Gene (<https://www.ncbi.nlm.nih.gov/gene/2324>)
- ClinVar ([https://www.ncbi.nlm.nih.gov/clinvar?term=FLT4\[gene\]](https://www.ncbi.nlm.nih.gov/clinvar?term=FLT4[gene]))

References

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Genomic Location

The *FLT4* gene is found on chromosome 5 (<https://medlineplus.gov/genetics/chromosome/5/>).

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