

Gene Section

Mini Review

GSDMA (gasdermin A)

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Identity

Other names: FLJ39120; GSDM; GSDM1; MGC129596

HGNC (Hugo): GSDMA

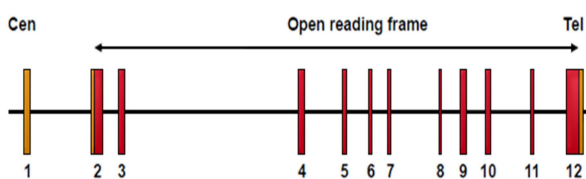
Location: 17q21.1

Local order: Telomeric to ORMDL3 and GSDMB genes; centromeric to PSMD3 gene.

Note

GSDMA is the first member of Gasdermin family genes which, with Gadermin-related genes, DFNA5 and DFNB59, form Gasdermin superfamily.

DNA/RNA



Genomic organization of the GSDMA gene.

Description

12 exons, spans approximately 13 kb of genomic DNA in the centromere-to-telomere orientation. The translation initiation codon is located to exon 2, and the stop codon to exon 12.

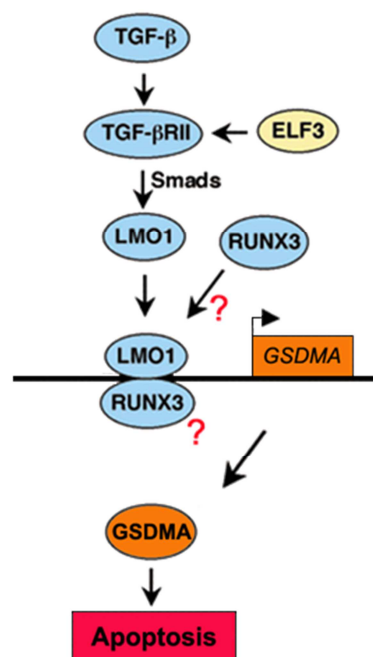
Transcription

mRNA of approximately 1.5 kb.

Pseudogene

Not reported.

Protein



GSDMA is involved in TGF-beta signaling which regulates apoptosis induction in pit cells of the gastric epithelium. Signaling from TGF-beta receptor up-regulates LMO1, a transcription factor. LMO1 binds to the promoter of GSDMA gene and enhances its expression, that results in the apoptosis induction in the pit cells.

Description

The GSDMA gene encodes a 445 amino acid protein with estimated molecular weight of 49377.95 Da. The Gasdermin family proteins have 9 conserved motifs but no known functional motif.

Expression

GSDMA protein is expressed in pit cells of the gastric epithelium, where it is involved in maintenance of homeostasis by its apoptosis induction ability under TGF-beta signaling. Its expression was also observed in epithelial cells of the esophagus, skin and mammary gland.

Localisation

Cytoplasm.

Function

Apoptosis induction, but detail is unknown.

Homology

Human genome possesses its three paralogues, GSDMB, GSDMC and GSDMD. Both N- and C-terminal amino acids are conserved among them.

Mutations**Germinal**

Not reported.

Somatic

Not reported.

Implicated in**Gastric cancer****Note**

GSDMA gene is frequently silenced in gastric adenocarcinoma (16 in 18 cases examined including both diffuse and intestinal types), whose relation to prognosis is unknown.

Esophageal cancer**Note**

GSDMA gene is frequently silenced in esophageal squamous cell carcinoma (41 in 42 cases examined).

References

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