

TFF2 (TreFoil Factor 2)

Identity

Other names **SP (Spasmolytic Polypeptide)**
 Hugo **TFF2**
 Location 21q22.3
 belongs to the TFF cluster

DNA/RNA

Description 5.1 kb gene, 4 exons
 Transcription 600 bp

Protein

Description precursor: 129 amino acids; mature peptide: 106 amino acids; 3-dimensional structure was solved; the 129 amino acids TFF2 protein contains a signal peptide; the mature secreted peptide of 106 amino acids contains two TFF (TreFoil Factor) domains and one acidic C-terminal domain
 Expression under normal condition, TFF2 is expressed in mucus neck cells of the fundus, basal cells of the antral and pyloric glands and by the Brunner's glands of the duodenum
 Localisation secreted in gastric fluid
 Function in repair and epithelial restitution of the gastro-intestinal mucosa
 Homology TFF2 belongs to the Trefoil peptide Family (TFF) and possesses two tandemly duplicated TFF motifs each being homologous to the TFF motif of [TFF1](#) and [TFF3](#). The TFF motif spans about 40 amino acids and is formed by 6 conserved residues involved in specific disulfides bridges

Implicated in

Entity TFF2 was found implicated in inflammatory bowel diseases, cancers of gastrointestinal organs such as stomach and pancreas; in contrast to TFF1 and TFF3, TFF2 expression was not found in [breast carcinomas](#)

External links

Nomenclature
[Hugo](#) [TFF2](#)
[GDB](#) [TFF2](#)
[Entrez Gene](#) [TFF2 7032](#) trefoil factor 2 (spasmolytic protein 1)

Cards
[Atlas](#) [TFF2ID264](#)
[GeneCards](#) [TFF2](#)
[Ensembl](#) [TFF2](#)
[CancerGene](#) [TFF2](#)
[Genatlas](#) [TFF2](#)
[GeneLynx](#) [TFF2](#)
[eGenome](#) [TFF2](#)
[euGene](#) [7032](#)

	Genomic and cartography
GoldenPath	TFF2 - 21q22.3 chr21:42639538-42644176 - 21q22.3 (hg17-May_2004)
Ensembl	TFF2 - 21q22.3 [CytoView]
NCBI	Genes Cyto Gene Seq [Map View - NCBI]
OMIM	Disease map [OMIM]
HomoloGene	TFF2
	Gene and transcription
Genbank	AB038162 [SRS] AB038162 [ENTREZ]
Genbank	U47292 [SRS] U47292 [ENTREZ]
Genbank	BC032820 [SRS] BC032820 [ENTREZ]
Genbank	BM817851 [SRS] BM817851 [ENTREZ]
Genbank	BM853946 [SRS] BM853946 [ENTREZ]
RefSeq	NM_005423 [SRS] NM_005423 [ENTREZ]
RefSeq	NT_086913 [SRS] NT_086913 [ENTREZ]
AceView	TFF2 AceView - NCBI
TRASER	TFF2 Traser - Stanford
Unigene	Hs.2979 [SRS] Hs.2979 [NCBI] HS2979 [spliceNest]
	Protein : pattern, domain, 3D structure
SwissProt	Q03403 [SRS] Q03403 [EXPASY] Q03403 [INTERPRO]
Prosite	PS00025 P_TREFOIL [SRS] PS00025 P_TREFOIL [Expasy]
Interpro	IPR000519 P_trefoil [SRS] IPR000519 P_trefoil [EBI]
CluSTr	Q03403
Pfam	PF00088 Trefoil [SRS] PF00088 Trefoil [Sanger] pfam00088 [NCBI-CDD]
Smart	SM00018 PD [EMBL]
Blocks	Q03403
	Polymorphism : SNP, mutations, diseases
OMIM	182590 [map]
GENECLINICS	182590
SNP	TFF2 [dbSNP-NCBI]
SNP	NM_005423 [SNP-NCI]
SNP	TFF2 [GeneSNPs - Utah] TFF2 [SNP - CSHL] TFF2 [HGBASE - SRS]
	General knowledge
Family Browser	TFF2 [UCSC Family Browser]
SOURCE	NM_005423
SMD	Hs.2979
SAGE	Hs.2979
Amigo	process defense response
Amigo	process digestion

[PubGene](#)

[TFF2](#)

Other databases

Probes

[Probe](#)

[TFF2 Related clones \(RZPD - Berlin\)](#)

PubMed

[PubMed](#)

[19 Pubmed reference\(s\) in LocusLink](#)

Bibliography

The amino acid sequence of pancreatic spasmolytic polypeptide.

Thim L, Thomsen J, Christensen M, Jorgensen KH.
Biochim Biophys Acta 1985; 827: 410-418.

Breast cancer-associated pS2 protein: synthesis and secretion by normal stomach mucosa.

Rio MC, Bellocq JP, Daniel JY, Tomasetto C, Lathe R, Chenard MP, Batzenschlager A, Chambon P.
Science 1988; 241: 705-708.

A new family of growth factor-like peptides. 'Trefoil' disulphide loop structures as a common feature in breast cancer associated peptide (pS2), pancreatic spasmolytic polypeptide (PSP), and frog skin peptides (spasmolysins).

Thim L.
FEBS Lett 1989; 250: 85-90.

hSP, the domain-duplicated homolog of pS2 protein, is co-expressed with pS2 in stomach but not in breast carcinoma.

Tomasetto C, Rio MC, Gautier C, Wolf C, Hareuveni M, Chambon P, Lathe R.
EMBO J 1990; 9: 407-414.

Induction of pS2 and hSP genes as markers of mucosal ulceration of the digestive tract.

Rio MC, Chenard MP, Wolf C, Marcellin L, Tomasetto C, Lathe R, Bellocq JP, Chambon P.
Gastroenterology 1991; 100: 375-379.

Expression of the breast cancer associated gene pS2 and the pancreatic spasmolytic polypeptide gene (hSP) in diffuse type of stomach carcinoma.

Theisinger B, Welter C, Seitz G, Rio MC, Lathe R, Chambon P, Blin N.
Eur J Cancer 1991; 27: 770-773.

Association of the human spasmolytic polypeptide and an estrogen-induced breast cancer protein (pS2) with human pancreatic carcinoma.

Welter C, Theisinger B, Seitz G, Tomasetto C, Rio MC, Chambon P, Blin N.
Lab Invest 1992; 66: 187-192.

Pancreatic spasmolytic polypeptide: first three-dimensional structure of a member of the mammalian trefoil family of peptides.

Gajhede M, Petersen TN, Henriksen A, Petersen JF, Dauter Z, Wilson KS, Thim L.
Structure 1993;1: 253-262.

The mouse one P-domain (pS2) and two P-domain (mSP) genes exhibit distinct patterns of expression.

Lefebvre O, Wolf C, Kedinger M, Chenard MP, Tomasetto C, Chambon P, Rio MC. J Cell Biol 1993; 122: 191-198.

Trefoil peptide gene expression in gastrointestinal epithelial cells in inflammatory bowel disease.

Wright NA, Poulsom R, Stamp G, Van Noorden S, Sarraf C, Elia G, Ahnen D, Jeffery R, Longcroft J, Pike C, et al. Gastroenterology 1993; 104: 12-20.

Human spasmolytic polypeptide is a cytoprotective agent that stimulates cell migration.

Playford RJ, Marchbank T, Chinery R, Evison R, Pignatelli M, Boulton RA, Thim L, Hanby AM. Gastroenterology 1995; 108: 108-116.

Oral trefoil peptides protect against ethanol- and indomethacin-induced gastric injury in rats.

Babyatsky MW, de Beaumont M, Thim L, Podolsky DK. Gastroenterology 1996; 110: 489-497.

The three human trefoil genes TFF1, TFF2, and TFF3 are located within a region of 55 kb on chromosome 21q22.3.

Seib T, Blin N, Hilgert K, Seifert M, Theisinger B, Engel M, Dooley S, Zang KD, Welter C. Genomics 1997; 40: 200-202.

[REVIEW articles](#) *automatic search in PubMed*

[Last year publications](#) *automatic search in PubMed*

[BiblioGene - INIST](#)

Contributor(s)

Written 12-2000 Catherine Tomasetto

Citation

This paper should be referenced as such :

Tomasetto C . TFF2 (TreFoil Factor 2). Atlas Genet Cytogenet Oncol Haematol. December 2000 .

URL : <http://www.infobiogen.fr/services/chromcancer/Genes/TFF2ID264.html>

© *Atlas of Genetics and Cytogenetics in Oncology and Haematology*
