

TFF3

Identity

Other names **ITF (Intestinal Trefoil Factor)**
Hugo **TFF3**
Location 21q22.3
Belongs to the TFF cluster

DNA/RNA

Description 3.3 kb gene, 3 exons
Transcription 600 bp

Protein

Description precursor 74 amino acids, mature peptide 51 aminoacids, trefoil domain from aminoacids residues 24 to 67. The 74 aminoacids TFF3 protein precursor contains a signal peptide. The mature secreted peptide of 51 aminoacids contains one TFF (TreFoil Factor) domain and one acidic C-terminal domain. The acidic C-terminal domain contains a free cystein residue that promotes homodimerization and heterodimerization.

Expression Under normal conditions TFF3 is expressed by goblet cell of the intesine and the colon. TFF3 expression was found in human respiratory tract, human conjunctival goblet cells and in human salivarygland. In addition TFF3 peptive was found in human hypothalamus.

Localisation In secreterory epithelia TFF3 is expressed by mucin-producing cells. In the brain TFF3 is expressed by a population of neurons of the human hypothamic paraventricular and supraoptic nuclei.

Function TFF3 promotes migration of epithelial cells in vitro and enhance mucosal healing and epithelial restitutions in vivo in the gastrointestinal mucosa. TFF3 deficient mice aresuceptible to colonic injury induced by standard agents and restitution is impaired. In addition TFF3 deficient mice have an increase in colonocyte apoptosis. The protective action of TFF3 involves activation of both EGF-R and PI3K-Akt pathways. The role of TFF3 in the brain is not clear yet.

Homology TFF3 belongs to the Trefoil peptide family (TFF) and possesse one TFF1 motif homologous to the TFF motif of [TFF1](#) and [TFF2](#). The TFF motif spans about 40 amino acids and is formed by 6 conserved cysteines residues involved in specific disulfites bridges.

Implicated in

Entity Inflammatory bowel diseases, TFF3 is expressed in cancer cells derived from the gastrointestinal tract, in [hepatocellular carcinoma](#) cells and in [small cell lung carcinoma](#) cells. Like TFF1, TFF3 is expressed in oestrogen-responsive breast cancer cell line and is expressed in [breast cancer](#).

External links

[Hugo](#) [TFF3](#)
[Nomenclature](#)

[GDB](#) [TFF3](#)
[Entrez Gene](#) [TFF3 7033](#) trefoil factor 3 (intestinal)

Cards

[Atlas](#) [TFF3ID265](#)

[GeneCards](#) [TFF3](#)

[Ensembl](#) [TFF3](#)

[CancerGene](#) [TFF3](#)

[Genatlas](#) [TFF3](#)

[GeneLynx](#) [TFF3](#)

[eGenome](#) [TFF3](#)

[euGene](#) [7033](#)

Genomic and cartography

[GoldenPath](#) [TFF3 - 21q22.3](#) [chr21:42605233-42608775 - 21q22.3](#) (hg17-May_2004)

[Ensembl](#) [TFF3 - 21q22.3 \[CytoView\]](#)

[NCBI](#) [Genes Cyto](#) [Gene Seq](#) [Map View - NCBI]

[OMIM](#) [Disease map \[OMIM\]](#)

[HomoloGene](#) [TFF3](#)

Gene and transcription

[Genbank](#) [AB038162](#) [SRS] [AB038162](#) [ENTREZ]

[Genbank](#) [AP001746](#) [SRS] [AP001746](#) [ENTREZ]

[Genbank](#) [U25657](#) [SRS] [U25657](#) [ENTREZ]

[Genbank](#) [AF432265](#) [SRS] [AF432265](#) [ENTREZ]

[Genbank](#) [BC017859](#) [SRS] [BC017859](#) [ENTREZ]

[RefSeq](#) [NM_003226](#) [SRS] [NM_003226](#) [ENTREZ]

[RefSeq](#) [NT_086913](#) [SRS] [NT_086913](#) [ENTREZ]

[AceView](#) [TFF3](#) AceView - NCBI

[TRASER](#) [TFF3](#) Traser - Stanford

[Unigene](#) [Hs.82961](#) [SRS] [Hs.82961](#) [NCBI] [HS82961](#) [spliceNest]

Protein : pattern, domain, 3D structure

[SwissProt](#) [Q07654](#) [SRS] [Q07654](#) [EXPASY] [Q07654](#) [INTERPRO]

[Prosite](#) [PS00025 P_TREFOIL](#) [SRS] [PS00025 P_TREFOIL](#) [Expasy]

[Interpro](#) [IPR000519 P_trefoil](#) [SRS] [IPR000519 P_trefoil](#) [EBI]

[CluSTr](#) [Q07654](#)

[Pfam](#) [PF00088 Trefoil](#) [SRS] [PF00088 Trefoil](#) [Sanger] [pfam00088](#) [NCBI-CDD]

[Smart](#) [SM00018 PD](#) [EMBL]

[Blocks](#) [Q07654](#)

[PDB](#) [1E9T](#) [SRS] [1E9T](#) [PdbSum], [1E9T](#) [IMB]

Polymorphism : SNP, mutations, diseases

[OMIM](#) [600633](#) [map]

[GENECLINICS](#) [600633](#)

[SNP](#) [TFF3](#) [dbSNP-NCBI]

[SNP](#) [NM_003226](#) [SNP-NCI]

[SNP](#) [TFF3](#) [GeneSNPs - Utah] [TFF3](#) [SNP - CSHL] [TFF3](#) [HGBASE - SRS]

General knowledge

[Family Browser](#) [TFF3](#) [UCSC Family Browser]

[SOURCE](#) [NM_003226](#)

[SMD](#) [Hs.82961](#)

[SAGE](#) [Hs.82961](#)

[Amigo](#) [process|defense response](#)

[Amigo](#) [process|digestion](#)
[Amigo](#) [component|extracellular region](#)
[BIOCARTA](#) [Trefoil Factors Initiate Mucosal Healing](#)
[PubGene](#) [TFF3](#)

Other databases

Probes

[Probe](#) [TFF3 Related clones \(RZPD - Berlin\)](#)

PubMed

[PubMed](#) [17 Pubmed reference\(s\) in LocusLink](#)

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Contributor(s)

Written 03-2001 Catherine Tomasetto

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