

**Name:** Elongation factor Tu

**Function:** This protein promotes the GTP-dependent binding of aminoacyl-tRNA to the A-site of ribosomes during protein biosynthesis

**Source:** As we had an E.C. number on this protein, we searched on BRENDA, where we found the following information:

“ this enzyme comprises a family of proteins involved in prokaryotic as well as eukaryotic protein synthesis. In the initiation factor complex, it is IF-2b (98kDa) that binds GTP and subsequently hydrolyses it in prokaryotes. in eukaryotes, it is eIF-2 (150 kDa) that binds GTP. In the elongation phase, the GTP-hydrolysing proteins are the EF-Tu polypeptide of the prokaryotic transfer factor (43 kDa), the eukaryotic elongation factor EF-1a (53 kDa), the prokaryotic EF-G (77 kDa), the eukaryotic EF-2 (70-110 kDa) and the signal recognition particle that play a role in endoplasmic reticulum protein synthesis (325 kDa). EF-Tu and EF-1a catalyse binding of aminoacyl-tRNA to the ribosomal A-site, while EF-G and EF-2 catalyse the translocation of peptidyl-tRNA from the A-side to the P-side. GTPase activity is also involved in polypeptide release from the ribosome with the aid of the pRFs and eRFs”

Here are some diseases related to the malfunction of the protein:

## Disease on EC 3.6.5.3 - protein-synthesizing GTPase

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DISEASE

TITLE OF PUBLICATION

LINK TO PUBMED

Acquired Immunodeficiency Syndrome

Adenocarcinoma

Adenoma

Adenomatous Polyposis Coli

African Swine Fever

Alzheimer Disease

Anemia

Astrocytoma

Ataxia

Azoospermia

Babesiosis

Bacterial Infections

Blast Crisis

Blister

Brain Diseases

Brain Ischemia

Brain Neoplasms

Breast Neoplasms

Bronchitis

Burkholderia Infections

Burkitt Lymphoma

Carcinogenesis

Carcinoma

Carcinoma, Ehrlich Tumor

Carcinoma, Hepatocellular

Carcinoma, Non-Small-Cell Lung  
Carcinoma, Squamous Cell  
Cardiomegaly  
Cardiomyopathies  
Cerebellar Ataxia  
Choriocarcinoma  
Classical Swine Fever  
Clostridium Infections  
Cockayne Syndrome  
Coinfection  
Colitis  
Colonic Neoplasms  
Colorectal Neoplasms  
Congenital, Hereditary, and Neonatal Diseases and Abnormalities  
Crohn Disease  
Cysts  
Demyelinating Diseases  
Dengue  
Dental Caries  
Diabetes Mellitus  
Diabetes Mellitus, Type 2  
Diphtheria  
Down Syndrome  
Dysentery, Amebic  
Echinococcosis  
Encephalomyelitis, Autoimmune, Experimental  
Endometrial Neoplasms  
Enzootic Bovine Leukosis  
Epilepsy  
Epilepsy, Temporal Lobe  
Equine Infectious Anemia  
Fatty Liver  
Fetal Growth Retardation  
Fibroadenoma  
Fuchs' Endothelial Dystrophy  
Fusariosis  
Gastrointestinal Neoplasms  
Glioblastoma  
Glioma  
Glomerulonephritis, Membranous  
Glycogen Storage Disease Type II  
Granuloma  
Hearing Loss  
Heart Failure  
Hemolytic-Uremic Syndrome  
Hemophilia A  
Hepatitis  
Hepatitis B  
Hepatitis B, Chronic  
Hepatitis C  
Herpes Simplex  
Huntington Disease  
Hydatidiform Mole  
Hydrocephalus  
Hyperalgesia  
Hypersensitivity  
Hypertension

Hypertension, Pulmonary  
Hypertrophy, Left Ventricular  
Hypoglycemia  
Hypothyroidism  
Infection  
Influenza, Human  
Insulin Resistance  
Intellectual Disability  
Intestinal Volvulus  
Ischemic Attack, Transient  
Latex Hypersensitivity  
Leukemia  
Leukemia, Erythroblastic, Acute  
Leukemia, Myelogenous, Chronic, BCR-ABL Positive  
Leukemia, Myeloid  
Leukemia, Myeloid, Acute  
Leukemia, T-Cell  
Leukoencephalopathies  
Liver Failure  
Liver Neoplasms  
Lung Neoplasms  
Lymphoma  
Lymphoma, B-Cell  
Lymphoma, Follicular  
Macular Degeneration  
Malaria  
Medulloblastoma  
Melanoma  
Meningioma  
Mental Retardation, X-Linked  
Microphthalmos  
Mitochondrial Diseases  
Multiple Myeloma  
Multiple Sclerosis  
Murine Acquired Immunodeficiency Syndrome  
Muscle Cramp  
Muscular Atrophy  
Muscular Diseases  
Muscular Dystrophy, Duchenne  
Mycetoma  
Myelodysplastic Syndromes  
Myeloproliferative Disorders  
Myxoma  
Neoplasm Metastasis  
Neoplasms  
Neoplasms, Germ Cell and Embryonal  
Neoplasms, Squamous Cell  
Nervous System Diseases  
Neurilemmoma  
Neuroblastoma  
Neurodegenerative Diseases  
Neurofibromatoses  
Neurofibromatosis 1  
Nevus  
Newcastle Disease  
Obesity  
Osteoporosis

Osteosarcoma  
Ovarian Neoplasms  
Pancreatic Neoplasms  
Pancreatitis  
Papilloma  
Paralysis  
Parkinson Disease  
Pheochromocytoma  
Plasmacytoma  
Polycystic Kidney, Autosomal Dominant  
Polymicrogyria  
Porcine Reproductive and Respiratory Syndrome  
Precursor Cell Lymphoblastic Leukemia-Lymphoma  
Primary Ovarian Insufficiency  
Prion Diseases  
Prostatic Neoplasms  
Protein Deficiency  
protein-synthesizing gtpase deficiency  
Rabies  
Retinitis Pigmentosa  
Retinoblastoma  
Rhabdomyosarcoma  
Rift Valley Fever  
Rotavirus Infections  
Sarcoma, Avian  
Seizures, Febrile  
Seminoma  
Sepsis  
Severe Acute Respiratory Syndrome  
Sleep Deprivation  
Smallpox  
Spinal Cord Ischemia  
Spinal Dysraphism  
Starvation  
Status Epilepticus  
Stomach Neoplasms  
Thymoma  
Tick Infestations  
Tinea  
Trypanosomiasis, African  
Tuberculosis  
Tuberous Sclerosis  
Urinary Bladder Neoplasms  
Usher Syndromes  
Uterine Cervical Neoplasms  
Vaccinia  
Varicose Veins  
Vascular System Injuries  
Vesicular Stomatitis  
Whooping Cough  
Xeroderma Pigmentosum  
Yellow Fever