pGEX Vectors*(GST Gene fusion)

All of the GST gene fusion vectors offer:

- *A* tac *promoter for chemically inducible, high-level expression.*

pGEX-1λT (27-4805-01)
Thrombin
Leu Val Pro Arg↓Gly Ser Pro Glu Phe Ile Val Thr Asp
CTG GTT CCG CGT GGA TCC CCG GAA TTC ATC GTG ACT GAC TGA CGA
BamH I EcoR I Stop codons

pGEX-2T (27-4801-01)
Thrombin
Leu Val Pro Arg↓Gly Ser Pro Gly Ile His Arg Asp
CTG GTT CCG CGT GGA TCC CCG GGA ATT CAT CGT GAC TGA CTG ACG
BamH I Sma I EcoR I Stop codons

pGEX-2TK (27-4587-01)
Thrombin Kinase
Leu Val Pro Arg↓Gly Ser Arg Arg Ala Ser Val
CTG GTT CCG CGT GGA TCT CGT CGT GCA TCT GTT GGA TCC CCG GGA ATT CAT CGT GAC TGA
BamH I Sma I EcoR I Stop codons

pGEX-4T-1 (27-4580-01)
Thrombin
Leu Val Pro Arg↓Gly Ser Pro Glu Phe Pro Gly Arg Leu Glu Arg Pro His Arg Asp
CTG GTT CCG CGT GGA TCC CCG GAA TTC CCG GGT CGA CTC GAG CGG CCG CAT CGT GAC TGA
BamH I EcoR I Sma I Sal I Xho I Not I Stop codons

pGEX-4T-2 (27-4581-01)
Thrombin
Leu Val Pro Arg↓Gly Ser Pro Gly Ile Pro Gly Ser Thr Arg Ala Ala Ala Ser
CTG GTT CCG CGT GGA TCC CCA GGA ATT CCC GGG TCG ACT CGA GCG GCC GCA TCG TGA
BamH I EcoR I Sma I Sal I Xho I Not I Stop codon

pGEX-4T-3 (27-4583-01)
Thrombin
Leu Val Pro Arg↓Gly Ser Pro Asn Ser Arg Val Asp Ser Ser Gly Arg Ile Val Thr Asp
CTG GTT CCG CGT GGA TCC CCG AAT TCC CGG GTC GAC TCG AGC GGC CGC ATC GTG ACT GAC TGA
BamH I EcoR I Sma I Sal I Xho I Not I Stop codons

pGEX-3X (27-4803-01)
Factor Xa
Ile Glu Gly Arg↓Gly Ile Pro Gly Asn Ser Ser
ATC GAA GGT CGT GGG ATC CCC GGG AAT TCA TCG TGA CTG ACT GAC
BamH I Sma I EcoR I Stop codons

pGEX-5X-1 (27-4584-01)
Factor Xa
Ile Glu Gly Arg↓Gly Ile Pro Glu Phe Pro Gly Arg Leu Glu Arg Pro His Arg Asp
ATC GAA GGT CGT GGG ATC CCC GAA TTC CCG GGT CGA CTC GAG CGG CCG CAT CGT GAC TGA
BamH I EcoR I Sma I Sal I Xho I Not I Stop codons

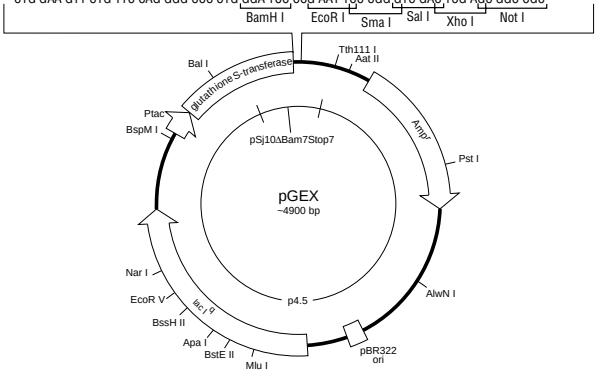
pGEX-5X-2 (27-4585-01)
Factor Xa
Ile Glu Gly Arg↓Gly Ile Pro Gly Ile Pro Gly Ser Thr Arg Ala Ala Ala Ser
ATC GAA GGT CGT GGG ATC CCC GGA ATT CCC GGG TCG ACT CGA GCG GCC GCA TCG TGA
BamH I EcoR I Sma I Sal I Xho I Not I Stop codon

pGEX-5X-3 (27-4586-01)
Factor Xa
Ile Glu Gly Arg↓Gly Ile Pro Arg Asn Ser Arg Val Asp Ser Ser Gly Arg Ile Val Thr Asp
ATC GAA GGT CGT GGG ATC CCC AGG AAT TCC CGG GTC GAC TCG AGC GGC CGC ATC GTG ACT GAC TGA
BamH I EcoR I Sma I Sal I Xho I Not I Stop codons

pGEX-6P-1 (27-4597-01)
PreScission™ Protease
Leu Glu Val Leu Phe Gln↓Gly Pro Leu Gly Ser Pro Glu Phe Pro Gly Arg Leu Glu Arg Pro His
CTG GAA GTT CTG TTC CAG GGG CCC CTG GGA TCC CCG GAA TTC CCG GGT CGA CTC GAG CGG CCG CAT
BamH I EcoR I Sma I Sal I Xho I Not I

pGEX-6P-2 (27-4598-01)
PreScission™ Protease
Leu Glu Val Leu Phe Gln↓Gly Pro Leu Gly Ser Pro Gly Ile Pro Gly Ser Thr Arg Ala Ala Ala Ser
CTG GAA GTT CTG TTC CAG GGG CCC CTG GGA TCC CCA GGA ATT CCC GGG TCG ACT CGA GCG GCC GCA TCG
BamH I EcoR I Sma I Sal I Xho I Not I

pGEX-6P-3 (27-4599-01)
PreScission™ Protease
Leu Glu Val Leu Phe Gln↓Gly Pro Leu Gly Ser Pro Asn Ser Arg Val Asp Ser Ser Gly Arg
CTG GAA GTT CTG TTC CAG GGG CCC CTG GGA TCC CCG AAT TCC CGG GTC GAC TCG AGC GGC CGC
BamH I EcoR I Sma I Sal I Xho I Not I



Map of the glutathione S-transferase fusion vectors showing the reading frames and main features. Even though stop codons in all three frames are not depicted in this map, all thirteen vectors have stop codons in all three frames downstream from the multiple cloning site.

ORDERING INFORMATION

Product	Quantity	Code Number
Glutathione S-transferase Gene Fusion Vectors*		
pGEX-1λT *Eco*R I/BAP	5 µg	27-4805-01
pGEX-2T	25 µg	27-4801-01
pGEX-2TK	25 µg	27-4587-01
pGEX-3X	25 µg	27-4803-01
pGEX-4T-1	25 µg	27-4580-01
pGEX-4T-2	25 µg	27-4581-01
pGEX-4T-3	25 µg	27-4583-01
pGEX-5X-1	25 µg	27-4584-01
pGEX-5X-2	25 µg	27-4585-01
pGEX-5X-3	25 µg	27-4586-01
pGEX-6P-1	25 µg	27-4597-01
pGEX-6P-2	25 µg	27-4598-01
pGEX-6P-3	25 µg	27-4599-01

* *All vectors include* E. coli *BL21 cells.*

Related Products	Code Number	Refer To
GST Purification Modules	various	page 481
GST Detection Module	27-4590-01	page 482
Glutathione Sepharose 4B (function-tested)	various	page 481
Site-Specific Proteases	various	page 483
Anti-GST Antibody	27-4577-01	page 482
pGEX Sequencing Primers	various	page 481
pGEX U.S.E. Mutagenesis Primers	various	page 499
E. coli BL21 Cells	27-1542-01	page 496

- An internal *lac* I^q gene for use in any *E. coli* host.
- Very mild elution conditions for release of fusion proteins from the affinity matrix, thus minimising effects on antigenicity and functional activity.
- PreScission, thrombin or factor Xa protease recognition sites for cleaving the desired protein from the fusion product.

Thirteen pGEX vectors are available (see figure). Nine of the vectors have an expanded multiple cloning site (MCS) that contains six restriction sites. The expanded MCS facilitates the unidirectional cloning of cDNA inserts obtained from libraries constructed using many available lambda vectors including λ ExCell Cloning Vector (27-5013-01 or 27-5011-01; see page 318 for more details) and Lambda ZAP. pGEX-6P-1, pGEX-6P-2 and pGEX-6P-3 each encode the recognition sequence for site-specific cleavage by PreScission Protease (27-0843-01) between the GST domain and the multiple cloning site. pGEX -4T-1, pGEX-4T-2 and pGEX-4T-3 are derived from pGEX-2T and contain a thrombin recognition site. pGEX-5X-1, pGEX-5X-2, and pGEX5X-3 are derivatives of pGEX-3X and possess a factor Xa recognition site.

pGEX-2TK is uniquely designed to allow the detection of expressed proteins by directly labelling the fusion products *in vitro* (1). This vector contains the recognition sequence for the catalytic subunit of cAMP-dependent protein kinase obtained from heart muscle. The protein kinase site is located between the GST domain and the MCS. Expressed proteins can be directly labelled using protein kinase and [γ-^{32}P]ATP and readily detected using standard radiometric or autoradiographic techniques. pGEX-2TK is a derivative of pGEX-2T; its fusion proteins can be cleaved with thrombin.

Collectively, the pGEX vectors provide all three translational reading frames beginning with the EcoR I restriction site. pGEX-1λT, pGEX-6P-1, pGEX-4T-1 and pGEX-5X-1 can directly accept and express cDNA inserts isolated from λ gt11 libraries.

* *Note: For research use only. Not for diagnostic or therapeutic purposes. A license for commercial use of GST gene fusion vectors must be obtained from AMRAD Corporation, Ltd., 17-27 Cotham Road, Kew, Victoria 3101 Australia.*

Reference

1. Kaelin, W.G. *et al., Cell* 70, 351 (1992).