

Product Information

pTAC-MAT-Tag®-1 Expression Vector

Catalog Number **E5530**

Storage Temperature -20 °C

TECHNICAL BULLETIN

Product Description

pTAC-MAT-Tag-1 Expression Vector is a 5358 bp *Escherichia coli* expression vector used for cytoplasmic expression of a properly inserted open reading frame as an N-terminal MAT-Tag (Metal Affinity Tag) fusion protein. The MAT-Tag (HNHRHKH) is a transition metal binding, e.g., Ni⁺² and Co⁺², sequence useful for high quality purification. The promoter-regulatory region of the strong *tac* promoter (a hybrid of the *trp* and *lac* promoters from *E.coli*)^{1,2} drives transcription of MAT-Tag-ORF fusion constructs. Control of transcription is regulated by the presence of the *lacO* sequences and inclusion of the *lac* repressor gene (*lacI*) on the plasmid.

pTAC-MAT-Tag-1 may be used in conjunction with the Director™ Universal PCR System, Catalog Number RDC1, for a simple, rapid and universal method to directionally clone and express PCR products. The MCS has been optimized for use with the *Hind* III and *Bgl* II restriction enzymes often used in the Director system.

N-terminal MAT-Tagged fusion proteins may be purified utilizing the metal affinity properties of the MAT tag by using HIS-Select® Nickel Affinity Gel, Catalog Number P6611. Sigma-Aldrich offers a wide selection of related HIS-Select products. Please visit www.sigma-aldrich.com for a complete listing of resins and affinity capture plates.

Reagents

- pTAC-MAT-Tag-1 Expression Vector, 10 µg, Catalog Number E4655, 0.5 mg/ml in 10 mM Tris-HCl, pH 8.0, 1 mM EDTA.
- pTAC-MAT-Tag-2-BAP Control Vector, 1 µg, Catalog Number C7864, 0.05 mg/ml in 10 mM Tris-HCl, pH 8.0, 1 mM EDTA,

Precautions and Disclaimer

This product is for laboratory use only. Not for drug, household or other uses. Please consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

This product ships on dry ice and storage at -20 °C is recommended.

Vector Features

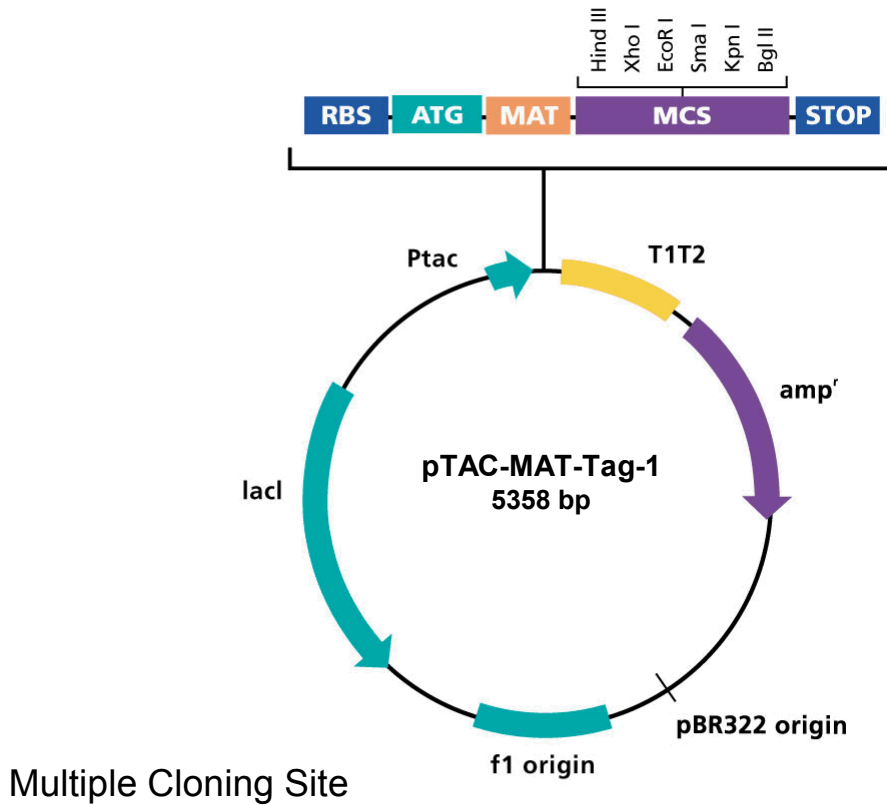
The following table provides map positions of key features in the pTAC-MAT-Tag-1 vector. Sequence verification of the MCS can be performed using the N-26 Sequencing Primer, Catalog Number P7832, and C-24 Sequencing Primer, Catalog Number P7957.

Feature	Map Position
N-26 Sequencing Primer Binding Site	578-603
<i>tac</i> Promoter	616-676
<i>lacO</i>	650-670
Ribosomal Binding Site	677-682
MAT tag	689-715
MCS	716-748
C-24 Sequencing Primer Binding Site	787-810
T1/T2 terminator	818-1188
beta-lactamase (<i>amp</i> ^r)	1287-2144
pBR322 ori	2352-2471
f1 ori	3135-3598
<i>lacI</i>	4276-5358

References

1. Moffet, B. A., et al., *J. Mol. Biol.*, **189**, 113-130 (1986).
2. Rosenberg, A. H., et al., *Gene*, **56**, 125-135 (1987).

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MAT Sequence									
Met	Ala	His	Asn	His	Arg	His	Lys	His	Hind III
ATG	GCT	CAC	AAC	CAC	CGT	CAC	AAA	CAC	AAG CTT
TAC	CGA	GTG	TTG	GTG	GCA	GTG	TTT	GTG	TTC GAA

Xho I	EcoR I	Sma I	Kpn I	Bgl II	Stop Codons				
CTC	GAG	AAT	TCC	CGG	GTA	CCA	AGA	TCT	TGA
GAG	CTC	TTA	AGG	GCC	CAT	GGT	TCT	AGA	ACT
									TAC
									TTA
									CTC
									GAT
									CGA

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