3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

pTAC-MAT-Tag®-2 Expression Vector

Catalog Number **E5405**
Storage Temperature –20 °C

TECHNICAL BULLETIN

Product Description

pTAC-MAT-Tag-2 is a 5178 bp *Escherichia coli* expression vector used for cytoplasmic expression of a properly inserted open reading frame as a C-terminal MAT (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 ORF-MAT-Tag 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.

C-terminal MAT-Tag 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-2 Expression Vector, 10 µg, Catalog Number E4780, 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 R&D use only. Not for drug, household or other uses. 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

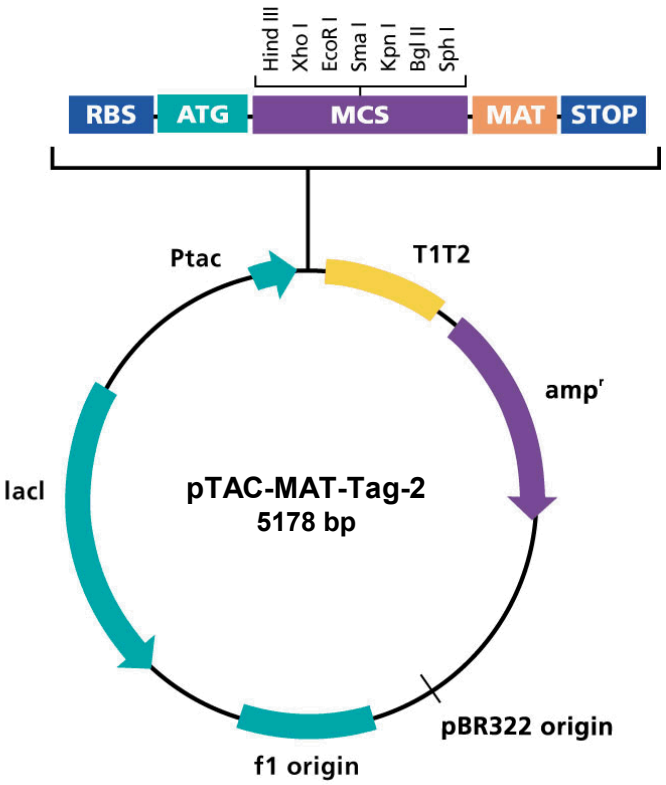
The following table provides map positions to key features in the pTAC-MAT-Tag-2 Expression Vector. Sequence verification of the MCS can be performed using the following recommended primers from Sigma-Genosys:

N-terminal Junction:
5′-CCGGGAGCTGCATGTGTCAGAGG-3’
C-terminal Junction:
5′-CTGTATCAGGCTGAAAATCTTCTC-3’

Feature	Map Position
Sequencing Primer Binding Site	195-217
tac Promoter	448-508
lacO	482-502
Ribosomal Binding Site	509-514
MCS	524-566
MAT-Tag	566-586
Sequencing Primer Binding Site	607-630
T1/T2 terminator	638-1008
β-lactamase (amp^r)	1107-1964
pBR322 ori	2172-2291
f1 ori	2955-3418
lacI	4096-5178

References

1. DeBoer, H. A., et al., The tac promoter: a functional hybrid derived from the trp and lac promoters. *Proc. Natl. Acad. Sci U.S.A.*, **80**, 21-25 (1983).
2. Russell, D. R. and Bennett, G. N., Construction and analysis of in vivo activity of E. coli promoter hybrids and promoter mutants that alter the -35 to -10 spacing. *Gene*, **20**, 231-243 (1982).



Multiple Cloning Site