pTAT thioredoxin fusion vectors

```
     T7 promoter          lac operator          (XbaI) T7 ribosome binding site
1    TAATACGACTCACTATAGGGAATTGTGAGCGGATAACAATTCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATATCC   85
                                          SpeI                SpeI
86   ATGAACACCATTCATCACCATCACCATCACAACACTAGTATG— TrxA —ACTAGTGGATCTGGTGGTGGTGGCGGCCGC  481
     M  N  T  I  H  H  H  H  H  H  N  T  S  M                T  S  G  S  G  G  G  G  G  R
```

pTAT5

```
                (BamHI)
                     NcoI       EcoRI  SalI XhoI (BamHI)                      NsiI HindIII
CTGGTTCCGAGGGGATCCATGGATATCGAATTCGTCGACCTCGAGGGATCCGGGCCCTCTAGATGCGGCCGCATGCATAAGCTT
L  V  P  R△G  S  M  D  I  E  F
        Thrombin
```

pTAT6

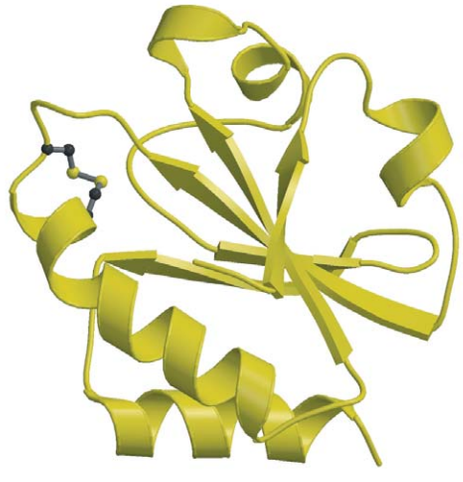
```
                (BamHI)                                NcoI       EcoRI  SalI XhoI (BamHI)
CTGGTTCCGAGGGGATCCATGTCTGAAAACCTGTACTTCCAGGGTTCCATGGATATCGAATTCGTCGACCTCGAGGGATCCGGGC
L  V  P  R△G  S  M  S  E  N  L  Y  F  Q△G  S  M  D  I  E  F
        Thrombin                       TEV
                     NsiI HindIII
CCTCTAGATGCGGCCGCATGCATAAGCTT
```

```
     SP6 promoter
GAGTATTCTATAGTGTCACCTAAATCCCAGCTTGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACC

        T7 transcription terminator
GCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTTGCTGAAAGG
```

Feature table

	Position in pTAT5
T7 promoter	1 - 17
lac operator	21 - 42
T7 gene 10 RBS	50 - 80
His-tag	98 - 115
Thioredoxin	125 - 448
Polylinker	494 - 565
SP6 promoter	571 - 589
T7 transcription terminator	668 - 709
LacI gene (coding region)	1119 - 2200
β-lactamase (coding region)	2970 - 3820
Origin of replication	3895 - 4590



Thioredoxin, PDB:2trx

Fusion protein data

(until the protease cleavage site)

	pTAT5	pTAT6
Length	136 aa	146 aa
Molecular weight	14630.63	15787.89
pI	6.62	6.39
ε_{280} ($M^{-1}cm^{-1}$)	13940	15220

References:

pTAT5 has been created by Johan Peränen, and should be cited as: J. Peränen, unpublished.
pTAT6 has been created by inserting TrxA from pTAT5 into pHAT4 by Marko Hyvönen, and should be cited as: M. Hyvönen, unpublished.

Reference for the original non-fusion and His-tag vectors is:
Peränen J., Rikkonen M.,Hyvönen M., Kääriäinen L. (1996)
T7 vectors with modified T7*lac* promoter for expression of proteins in *Escherichia coli*. Anal. Biochem., 236:371-373

For more information, see http://www-cryst.bioc.cam.ac.uk/~marko/vector, or email marko@cryst.bioc.cam.ac.uk

Notes:
All the data on this page is correct to the best of our knowledge, yet you should use it at your own risk.

Restriction sites indicated in paranthesis cut the vector twice, but are thought to be useful in some instances and shown to your benefit

Plasmid map on page 2 was orginally created using Plasmapper web server at http://wishart.biology.ualberta.ca/PlasMapper/ and edited by hand.

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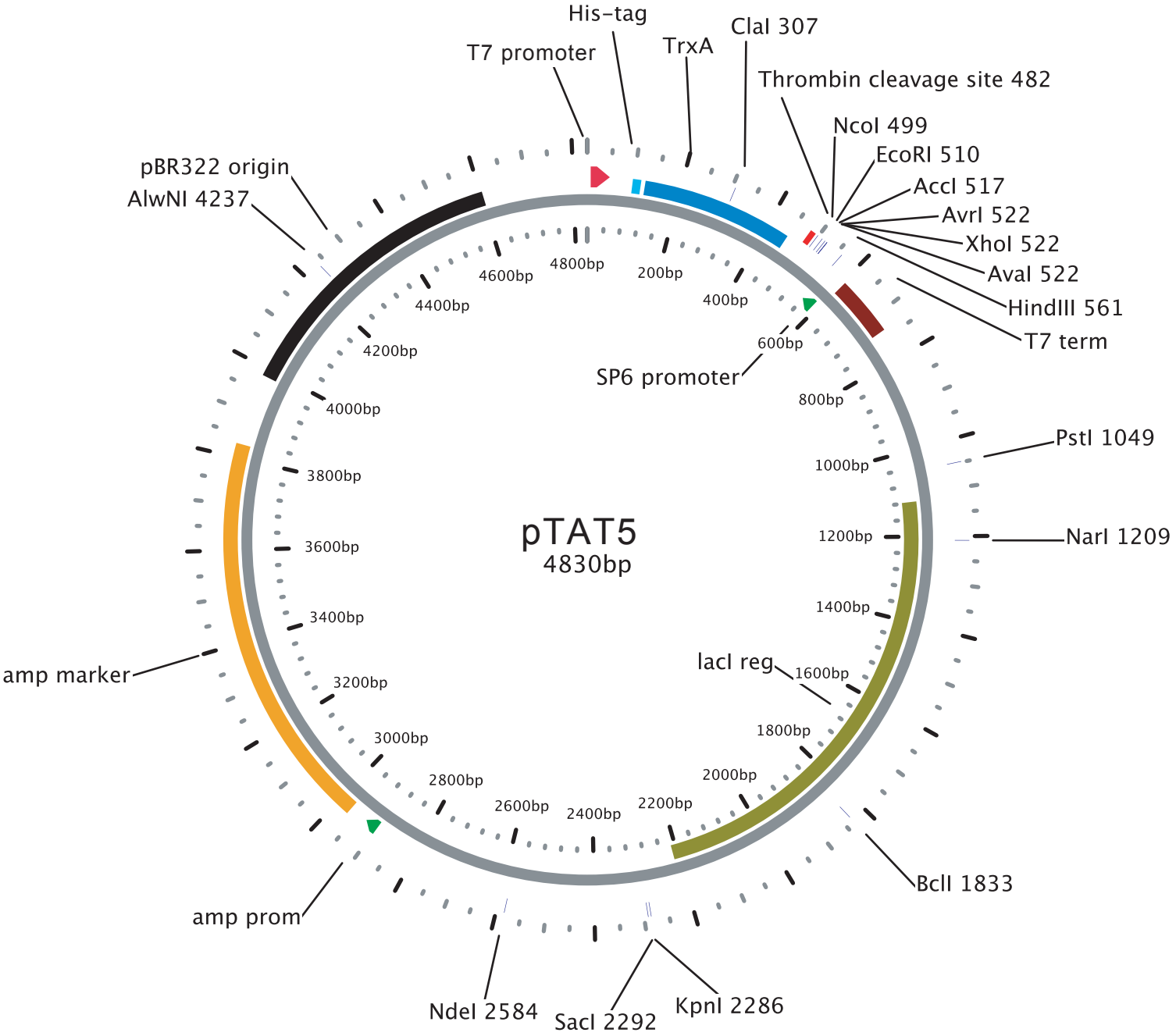
His-tag
T7 promoter
TrxA
ClaI 307
Thrombin cleavage site 482
NcoI 499
EcoRI 510
AccI 517
AvrI 522
XhoI 522
AvaI 522
HindIII 561
T7 term
pBR322 origin
AlwNI 4237
PstI 1049
NarI 1209
SP6 promoter
lacI reg
amp marker
amp prom
BclI 1833
NdeI 2584
SacI 2292
KpnI 2286
pTAT5
4830bp
200bp
400bp
600bp
800bp
1000bp
1200bp
1400bp
1600bp
1800bp
2000bp
2200bp
2400bp
2600bp
2800bp
3000bp
3200bp
3400bp
3600bp
3800bp
4000bp
4200bp
4400bp
4600bp
4800bp