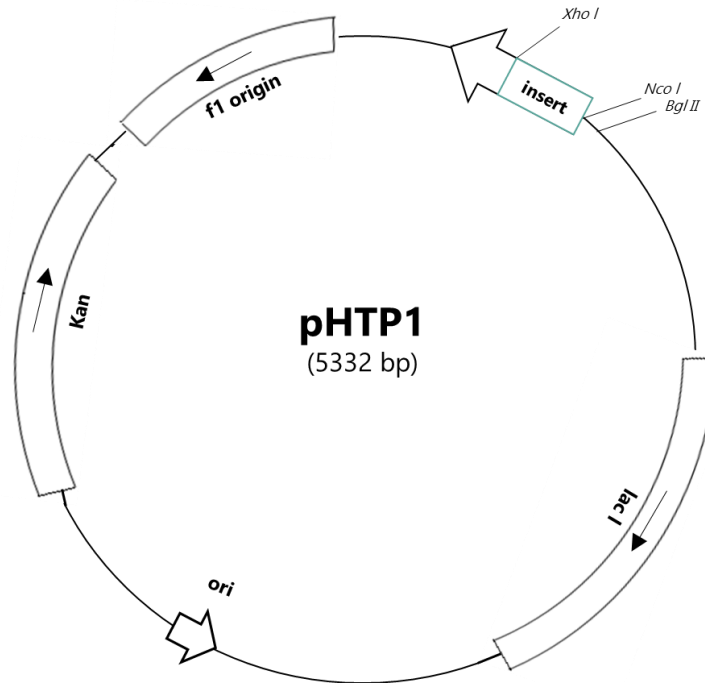


pHTP1 Vector

pHTP1 was designed for the cloning and expression of high-levels of recombinant proteins in *Escherichia coli*. This vector, included in the portfolio of NZYtech pHTP expression vectors, is part of the NZYEasy Cloning & Expression System. pHTP1, contains two poly-histidine (6xHis) sequences (N- and C-terminal) which allow subsequent recombinant protein purification by immobilized metal ion affinity chromatography (IMAC).

1. Vector Map



pHTP1 Cloning/Expression Region

<i>Nco I</i>	His-Tag	
<u>CCATGG</u> GCAGCAGCCATCATCATCATCACAGCAGCGGCCCTCAGCAAGGGCTGAGG	/ ⤵ /	CCTCAGCTTCCGCTGAGGTCGTCGACAAGCTTGGCGCC
MetGlySerSerHisHisHisHisHisHisSerSerGlyProGlnGlnGlyLeuArg / ⤵ / ProGlnLeuProLeuArgSerValAspLysLeuAlaAla		
<i>Xho I</i>	His-Tag	<i>STOP</i>
GCA <u>CTCGAG</u> CACCACCACCACCAC	TGAGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCC	
AlaLeuGluHisHisHisHisHisHis*		

⤵ Represents the site where the gene will be inserted.

Note: For correct expression, inserted gene needs to be in frame with pHTP1 5' gene sequence. Inserts correctly cloned into pHTP1 will maintain reading frames starting on the ATG codon.

2. Vector Sequence (5332 bp)

TGGCGAATGGGACGCGCCCTGTAGCGCGCATTAAGCGCGCGGGGTGGTGGTTACGCGCAGCGTGACCCTACACTTGGCCAGCGCCCTAGCGCCCGCTCCTTTTCGCTTTTCCCTTCCTTTCTCGCCACGTTTCGCGCGGCTTTCCCGCTCAAGCTCTAAATCGGGGGCTCCCTTAGGGTTCGGATTAGTGTCTTACGGCACCTCGACCCCAAAAAAAGTTGATTAGGGTGATG
GTTACGAGTAGTGGGCCATCGCCCTGATAGACGGTTCGCGCTTTGACGTTGGAGTCCACGTTCTTTAATAGTGGACTCTGTTCCAAACTGGAAACAACCTCAACCTATCTCGGT
CTATTCTTTGATTATAAGGGATTTGCGGATTTCCGGCTATTGGTTAAAAATGAGCTGATTTAACAAAAATTTAACGGAATTTAACAAAAATATAACGTTTACAATTTACAGGT
GGCACTTTTCGGGAAATGTGCGCGAACCCCTATTGTTTATTTCCTAAATACATTCAAATATGATCCGCTCATGAATTAATTCTAGAAAACTCATCGAGCATCAAATGAAAC
TGCAATTTATTCATATCAGGATTATCAATACCATATTTTGGAAAAAGCCGTTCTGTAATGAAGGAGAAAACTACCAGGAGGTTCCATAGGATGGCAAGATCCTGGTATCGGCTG
CGATTCGACTCGTCCAACATCAACACTATTAATTTCCCTCGTCAAAAAAAGGTTATCAAGTGAATAACCATACCATGAGTACGACTGAATCCGGTGAGAAATGGCAAAAGTTT
ATGCATTTCTTTCCAGACTTTGTTCAACAGCGCCAGCCATTACGCTCGTCAAAAATCACTGCATCAACCAAAACCGTTATTCATTCGTTGTTGCGCTGAGCGAGACGAAATACGCGA
TCGCTGTTAAAAGGACAAATACAACAGGAATCGAAATGCAACCGCGCAGGAACACTGCCAGCGCATCAACAATATTTACCTGAATCAGGATATTTCTTAATACCTGGAAATGCTG
TTTTCCCGGGATCGCAGTGGTGAATACCATGCATCATCAGGAGTACGGATAAAATGCTTGTATGGTGGAGAGGCAATAAATCCGTCAGCCAGTTTAGTCTGACCATCTCATCTGT
AACATCATTTGGCAACGCTACCTTTGCCATGTTTTCAGAAACAACCTTGGCGCATCGGGCTTCCCATCAATCGATAGATGTCGACCTGATTGCCGACATTAATCGCGAGCCATTTA
TACCCATATAAACTCAGCATCCATGTTGGAATTTAATCGCGCCTAGAGCAAGACGTTCCGTTGAATTTACACCCGATTAACACCCCTTGATTTAGTAAAGCAGACAGTTT
TTGTTTCATGACCAAAAATCCCTTAACTGAGTTTTCGTTCCACTGAGCGTCAGACCCGTTAGAAAAGATCAAAGGATCTCTTTGAGATCCTTTTTTCTGCGCGTAATCTGCTGCTTGC
AAACAAAAAACACCCTACCAGCGGTGTTGTTTTCGCGGATCAAGAGCTACCAACTCTTTTTCGGAAGGTAAGTGGCTTACGAGAGCGCAGATACCAAAATACTCTCTTCTAGT
GTAGCCGATGTTAGGCCACACTTCAAGAACTCTGTAGCACCGCTACATCTCGCTCTGTAATCTGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTCTGCTTACCAGGTTG
GACTCAAGACGATAGTTACCGGATGAGCGGCGGCTCGGGCTGAGCGGAGGTTCTGTGCACACAGCCAGCTTGGAGCGAACGACCTACACCGAATGAGATACCTACAGCGTGA
TATGAGAAAGCGCCAGCTTCCCGAAGGGAGAAAGCGGACAGGATTCGGTAAGCGGCGAGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGAAACGCTGGTATCTTTA
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AGTCAAGTGAAGCGGATGTTACCGGATGAGCGGATGATGCGGTTTCTCCTACGACGCTTCCGCTGATTTACACCCGATATATGTTGCTCACTCAGTCAATCTGCTGATCGCGCA
TAGTTAAGCCAGTATACACTCCGCTATCGCTACGTGACTGGGTCATGGCTCGCGCCGACACCCGCAACACCCGCTGACGCGCCTGACGGCTTGTCTGCTCCCGGCTACCGCTTA
CAGACAGCTGTGACCTCTCCGGAGCTGCATGTTGTCAGAGTTTTCACGCTCATACCAGAAACGCGCAGGAGCTGCGGTAAGTCTCATCAGCGTGGTCTGAAGCGATTCACAG
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GGCGATAAATGGCTGCTTCTCGCCGAAACGCTTATGCGCGGACAGTACGAAAGGTTGAGCGAGGGCGTGAAGATTCGGAATACCAGCAAGGACAGCGCCGATCATCTGCGCTC
CAGCGAAAGCGGCTCCTCGCGAAAAATGACCCAGAGCGCTCGCGCACCTGTCTACGAGTGCATGATAAAGAAGACAGTCAAGTGGCGGACGATAGTCAATGCCCGCGCCACC
GGAAAGAGCTGACTGGTTGAAGGCTCTCAAGGGCATCGGTCGAGATCCCGGTGCTTAATGAGTGAAGTAACTTACATTAATGCGTTGCGCTCACTGCCGCTTCCAGTCCGGAAA
CCTGCTGTCGAGCTGCATTAATGAATCGGCAACGCGCGGGGAGAGGGGTTTTCGCTATTTGGCGCCAGGGTGGTTTTTCTTTTACCAGTGAGACGGGCAACAGCTGATTGCCCTT
CACCCCTGGCCCTGAGAGAGTTGACAGCAAGCGGTCACCGTGGTTTTCGCCAGCAGCGGAAATCTGTTTATGTTGGTTAACGGCGGGATATAACATGAGCTGCTTCCGTTATCG
TCGATATCCACTACCGAGATATCCGACCAACGCGCAGCCGACTCGGTAATGGCGCGCATGCGCCAGCGCCATCTGATCGTTGGCAACCAGCATCGCAGTGGAAACGATGCCCT
CATTCAGCATTTGATGGTTGTTGAAACCGGACATGGCACTCCAGTTCGCTTCCGTTCCGCTATCGGTTGAATTTGATTGCGAGTGAATATTTAGCCAGCGCAGCCAGACGAG
ACGCGCCGAGACAGAACTAATGGGCGCGTAACAGCGCGATTTGCTGGTACCCAAATGCGACAGATGCTCCACGCCAGTCCGCTACCTGCTTCTCATGGGAGAAAAATAACTGTTG
ATGGTGTCTGGTCAGAGACATCAAGAAATAACGCCGGAACATTAGTGCAGGACGCTTCCACAGCAATGGCATCCTGGTCACTCCAGCGGATAGTTAATGATAGCCACTGACGGGTT
GCGCAGAAAGATTGTGACCCGCTTTACAGGCTTTCGACGCGCTTCTGTTTACCATCGACACCACCGCTGGCACCCAGTTGATCGCGCGGAGATTAAATCGCCGACAAATTTG
CGACGGCGGTGACAGGCGCAGACTGGAGTTGGCAACGCCAATCAGCAACGACTGTTTGCCTGCGCAGTTGTTGTCGACGCGGTTGGGAATGTAATTCAGCTCCGCCATCGCCGCTTCC
ACTTTTTCCCGCTTTTCGAGAAACGCTGGCTGGCTGTTTCCACCGCGGAAACGGTCTGATAAGAGACACCGGCATCTCTGCGACATCGTATAACGTTACTGGTTTACATTTCA
CCACCCTGAATGACTCTTTCGCGCGCTATCATGCCATACCCGAAAGGTTTTGCGCATTCGATGGTGTCCGGGATCTCGACGCTCTCCCTTATGCGACTCCTGCATTAGGAAGC
AGCCAGTAGTAGGTTGAGCCGTTGAGCACCCGCGCAAGGAAATGTTGATGCAAGGAGATGGCGCCCAACAGCTCCCGCGCCAGGGCTGCCACCATACCCAGCCGAAACA
AGCGCTCATGAGCCGAAGTGGCGAGCCGATCTTCCCATCGTGTATGTCGGGATATAGCGCCAGCAACCGCAGCTGTGGCGCGGTTGATGCGCCACGATGCGTCCGCGGTAG
AGGATCGAGATCTCGATCCCGGAAATTAATACGACTCACTATAGGGGAAATTTGAGCGGATAACAATTTCCCTTAGAAATAATTTGTTTAACTTTAAGAAGGAGATATCCATGG
GCAGCAGCATCATCATCATCACAGCAGCGCCCTCAGCAAGGGCTGAGG/ /CCTCAGCTTCCGCTGAGGTCGCGACAAGCTTGGCGCCGCACTCGAGCACCAACCCAC
CACAC TGAGATCCGGCTGCTAAACAAAGCCGAAAGGAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAAATAGCATAAACCCTTGGGGCCTTAACCGGGTCTGAGGGGTTTT
TGCTGAAAGGAGGAACATATCCGGAT

pHP1 sequence landmarks:

- **T7 promoter:** in gray
- **First ATG (methionine):** in yellow
- **His•Tag coding sequences:** in purple
- **Cloning region:** ✂
- **T7 terminator:** in dark gray
- **Sequencing primers (T7 universal and T7 terminator):** underlined
- **BglII, NcoI & XhoI recognition sites:** in bold

Sequence added to the final recombinant protein (2.11 KDa):

MGSSHHHHHSSGPQQGLR