

## Product datasheet for **SC103453**

### Glutamine Synthetase (GLUL) (AK092874) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Glutamine Synthetase (GLUL) (AK092874) Human Untagged Clone
Tag:	Tag Free
Symbol:	Glutamine Synthetase
Synonyms:	GLNS; GS; PIG43; PIG59
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL4</u>
E. coli Selection:	Ampicillin (100 ug/mL)

**Fully Sequenced ORF:** >OriGene sequence for AK092874 edited  
 GAATTCGGCAGGAGGTTTTGTAAATTTGTGATTGGTTTTGATTGTTTCTCTGATAG  
 TTTAGTATTTGGATAGTTTAGTGTTAACCTCAGCTACACTGAAGGAATAGACCTTAGTCC  
 TCACAAGTATAAGTTCTAGCTTGGAAAGCCTGGGTCTGCAGTAGCTGTGGAACCTAAGCC  
 TCTGAGCTCAGGGATGCAGAGGCATTGAGTTACTACCAAGGGCCTGATCTTTTCTTAGC  
 AGGCATCTGTGTTAATTGTTTCAAAGGTGGTATCAGTTTTACAGCCTATTATAAAGGA  
 GATTTTTGCCTACTATAAACTAATCCCCCTGAAAGAGTGAGTAAACATAACTTTTTGTG  
 TGTTGACTTCCACAAGGGAAGGAGTTGGCACTTACTCTGACTTTTGATTGAGTCGTC  
 TTCTTGAGCCATTTTTGCAGGGGATCAGTTTGGAGTGGCGTTAACAATGTTATTCTTTT  
 TTTCTTCCAGAACACCTTCCACCATGACCACCTCAGCAAGTCCCACTTAAATAAAGG  
 CATCAAGCAGGTGTACATGTCCCTGCCTCAGGGTGAGAAAGTCCAGGCCATGTATATCTG  
 GATCGATGGTACTGGAGAAGGACTGCGCTGCAAGACCCGACCCCTGGACAGTGAGCCAA  
 GTGTGTGGAAGAGTTGCCTGAGTGGAAATTCGATGGCTCCAGTACTTTACAGTCTGAGGG  
 TTCCAACAGTGACATGTATCTCGTGCCTGCTGCCATGTTTCGGGACCCCTTCCGTAAGGA  
 CCCTAACAAAGCTGGTGTATGTGAAGTTTTCAAGTACAATCGAAGGCCTGCAGGTGTGTT  
 ATAGCACAGCTATGGATACCCCTCTCAATCTGTGAATGCTGTGAAGGGGAGGGAGAAGA  
 CATTCTGAAATCAGCATTGGGAAGACTAGGCAATTTGAGCACTATTTAAGAATCTGAGT  
 GATTCCTTTCCCTGAACTTCTGCTTTGAGGAAGAGATAATATGGCCATCTTTCTATGGT  
 CTTCTCTGTTGGTTGCATAAAATAGCATTGGATTTGCCAGATCTGTTTGCCGGCTTGG  
 AGTCCCCAGTAACAGCCTTCTGCCTGGAATGTAGGCCAGGACAATGTAACCAATGGA  
 CAAATGTTTCTCAAAAATTATAGAATGGCTCCAAGTGCCTGAGAAATGAAGAATAAATCT  
 GACAACCAAGAGCAGCTGTCTTGTGAATAGAGGGTTAAGTGCCTGGCATTGGTCTTGG  
 GAGGTGGCCAGAATGCAGATAAGGTGAAAGTTGCCCTGTTCTAAATCCACTCCCATGTGA  
 CTTGGTTGTAAGTGAATTTAAACTGAAGTCTTTCAGAGTCTTCTACAGATGTAC  
 AATTAACAGCTTCTCTATTTTTCTGACTCGGTGATCCCAAGAAGGCCTATACTGGGTCA  
 GTTCATACCATAGTGCACACCTCAGTTGTATAGAATCCAAGGACTATTCTCCCATCAGCA  
 TCGGTATTCAGCATCTATGTCTTTAGATCCCTGATGGCGTATTATTGACTCTTTTTTCTA



[View online »](#)

GAGACCAATTTGAGGCACACCTGTAAACGGATAATGGACATGGTGAGCAACCAGCACCCC  
 TGGTTTGGCATGGAGCAGGAGTATACCCTCATGGGGACAGATGGGCACCCCTTTGGTTGG  
 CCTTCCAACGGCTTCCCAGGGCCCCAGGGTAAGTCTCCTTGGGTTAGAGGTGAAATTC  
 AGAAGTGTCTAACTGTGCAGGAATGCCCTTCCCAGGGATGGGAATGACTTTCAGAATCA  
 AGAAGCAAAAATAACAGTAAAGGCGAAACAGCCCTCACATCACCAAAGTCCAAAAATGG  
 ATATGAATATATAAAGTAAGGTTTTAGGGGGAACGTTTGGCCCCACTGAAGCTGTGGTGA  
 AGAGGAACCTCCCCTATTGCCCTCCCCTGCCCGCACCTGCAGATGAAGGCAAGGATAGT  
 GATTCAGAGGGCAAGGCTTAAGGGCCTTCTGATCTGACTTTGGGATTCTCTGGATTT  
 CTTGACTCTTAGCGTTTTGTCTGATGCTTCTGTAGGTCCATATTACTGTGGTGTGGGAG  
 CAGACAGAGCCTATGGCAGGGACATCGTGGAGGCCATTACCGGGCTGCTTGTATGCTG  
 GAGTCAAGATTGCGGGGACTAATGCCGAGGTGATGCTGCCAGGTAAGTATAGCTCCAA  
 TCCATCAATGAAGAAGGGTAGGTAGGTGCACATAGGACTTTTGTAGTAAGGGCTGCTGA  
 TACACCACTCACTAACCCAAAACCTAAGAACGGGTTGGAGTACAGGTGAGAAGAGAACAG  
 GTTTAGGAGATTCTGAGTTGGAGTGAGCAGTTAGCTTTGTTTTAATGGCCAAGCTTCTCG  
 TTTCTAGTGGGAATTCAGATTGGACCTTGTGAAGGAATCAGCATGGGAGATCATCTCTG  
 GGTGGCCCGTTTTATCTTGCATCGTGTGTGAAGACTTTGGAGTGATAGCAACCTTTGA  
 TCCTAAGCCCATTCTGGGAAGTGAATGGTGCAGGCTGCCATACCAACTTCAGCACCAA  
 GGCCATGCGGGAGGAGAAATGGTCTGAAGTGAGTACCTTCTGCTGGGGCCATCTTTAATCT  
 CCTGTGGCAGAAAACCTTGGGAGGAGACTTAGCAATCTCTCAGCAAAGTCTCCTTTGCAGG  
 ATGACTTGCAAATATTTGCCAAAGATGAGTAAACTTGACTTCTCAGTCTGGACGTA  
 AGGTGTTGACACTTGCCCTCACATTCTCTCATTGTTTCTTATTTGAAAAATACCAAATA  
 ATACTTCTGATTCACAGTGATAAATATTTGTTATAATTTATATAATATATATTAGTCATA  
 TATCATTATATAAATATATATCGATATATATATTTGTGACATGTCATGGTGACAGGGAAA  
 AGTTGACAAATTCATGCATTTGAAAATCTTTTAGAACTAAATTAGTAACAATACAGGCAT  
 GTGGATAAGCTTAATGCTTATGAGGGGGAGAAAGTTTCAAATGATTAGTCTTTTCAACAA  
 ACAGTAACTTTGTACTGCTTGTGCGGCACTGTTCTCACCCTGAGACACACAGGTAAGAA  
 GATGCAGCCACTGCCCTCATGAAGTATTTGTTCTACTGGTATCATATTTTGGTGCACCTC  
 ATTCTTGGCTCCATACCTGGAGACAAGTTGGACTGCCATCTTTTCTGTTTACTCTAGGT  
 ACATCGAGGAGGCCATTGAGAACTAAGCAAGCGGCACCAGTACCACATCCGTGCCTATG  
 ATCCCAAGGGAGGCTGGACAATGCCCGACGTCTAACTGGATTCCATGAAACCTCCAACA  
 TCAACGACTTTTCTGCTGGTGTAGCCAATCGTAGCGCCAGCATACGCATTCGCCGACTG  
 TTGGCCAGGAGAAGAAGGTTACTTTGAAGATCGTCGCCCTCTGCCAATGCGACCCCT  
 TTTCTGGTGACAGAAGCCCTCATCCGCACGTGTCTTCTCAATGAAACCGGCGATGAGCCCT  
 TCCAGTACAAAAATTAAGTGGACTAGACCTCCAGCTGTTGAGCCCTCCTAGTCTTTCAT  
 CCCACTCCAACCTTCCCCCTCTCCCAGTTGTCCCGATTGTAACCTCAAAGGGTGGAAAT  
 CAAGGTCGTTTTTTTTCATTCCATGTGCCAGTTAATCTTGCTTTCTTTGTTTGGCTGGGA  
 TAGAGGGGTCAAGTTATTAATTTCTTACACCTACCCTCCTTTTTTTTCCCTATCACTGA  
 AGCTTTTTTAGTGCAATTAGTGGGAGGAGGGTGGGAGACATAACCACTGCTTCCATTTAA  
 TGGGGTGACCTGTCCAATAGGCGTAGCTATCCGGACAGACGTTTGCAGAAGGGGGA  
 CTCTTCTCCAGGTAGCTGAAAGGGGAAGACCTGACGACTCTGGTTAGGTTAGGACTTG  
 CCCTCGTGGTGGAACTTTTCTTAAAAAGTTATAACCAACTTTTCTATTAAGGTTGGGAA  
 TTAGGAGAGAAGGTAGGGGTTGGGAATCAGAGAGAATGGCTTTGGTCTCTTGTGCTTGGG  
 ACTAGCCTGGCTTGGGACTAAATGCCCTGCTCTGAACACGAAGCTTAGTATAAAGTATG  
 GATATCCCTACCTTGAAGAAGAAAAGGTTCTTACTGCTTGGTCCCTTGATTTATCACACA  
 AAGCAGAATAGTATTTTATATTTAAATGTAAGACAAAAAACTATATGTATGGTTTTGT  
 GGATTATGTGTGTTTTGCTAAAGGAAAAAACCATCCAGGTACGGGGCACCAAATTTGAG  
 ACAAATAGTCGGATTAGAAATAAAGCATCTCATTTTGTAGTACAGCAAGGGAAGTGGTT  
 CTAGATGGTGATCTGGGATTAGCCCTCAAGACCCTTTTGGGTTTCTGCCCTGCCACC  
 CTCTGGAGAAGGTGGGCACTGGATTAGTTAACAGACGACACGTTACTAGCAGTCACTTGA  
 TCTCCGTGGCTTTGGTTTAAAAGACACACTTGTCCACATAGGTTTAGAGATAAGAGTTGG  
 CTGGTCAACTTGAGCATGTTACTGACAGAGGGGGTATTGGGGTTATTTTCTGGTAGGAAT  
 AGCATGCTACTAAAGCAGGCCTTTTGATATTAATTTTTTAAAAAGCAAAATATAGAAG

```
TTTAGATTTTAATCAAATTTGTAGGGTTTCTAGGTAATTTTTACAGAATTGCTTGTTTGC
TTCAACTGTCTCCTACCTCTGCTCTTGGAGGAGATGGGGACAGGGCTGGAGTCAAAACAC
TTGTAATTTTGTATCTTGATGTCTTTGTTAAGACTGCTGAAGAATTATTTTTTTCTTTT
ATAATAAGGAATAAACCCACCTTTATTCCTTCATTTTCATCTACCATTTTCTGGTTCTTG
TGTTGGCTGTGGCAGGCCAGCTGTGGTTTTCTTTGCCATGACAACCTTCTAATTGCCATG
TACAGTATGTTCAAAGTCAAATAACTCCTCATTGTAACAAAACCTGTGAACTGCCAAAAG
CAGCACTTATAAATCAGCCTAACATAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAACTCGAC
```

**5' Read Nucleotide Sequence:**

```
>OriGene 5' read for AK092874 unedited
NGGGGTTCACATTTGTATACGACTCATATAGGCGGCCGGAATTCGGCACGAGGGTTTTG
TAAATTTGTGATTGGTTTTGATTTGTTTCCTCTGATAGTTTGTATTTGGATAGTTTAG
TGTTAACCTCAGCTACACTGAAGGAATAGACCTTAGTCCTCACAAGTATAAGTTCTAGCT
TGGAAGCCTGGGTTCTGCAGTAGCTGTGGAACCTAAGCCTCTGAGCTCAGGGATGCAGAG
GCATTGAGTTACTACCAAGGCCTGATCTTTTCTTTAGCAGGCATCTGTGTTAATTGTTT
CAAAAGGTGGTATCAGTTTTACAGCCTATTATAAAGGAGATTTTGCCTACTATAAAAC
TAATCCCCTGAAAGAGTGAGTAAACATAACTTTTTGTGTGTTGACTCCACAAGGGAAG
GAGTTGGCACTTACACTCTGACTTTTGATTGAGTCGTCCTTCTTGAGCCATTTTGCAGG
GGATCAGTTTGGAGTGGGCGTTAACAATGTTATCTTTTTTCTCTCCAGAACACCTTC
CACCATGACCACCTCAGCAAGTCCCCTAAATAAAGGCATCAAGCANGTGTACATGTCC
CTGCCTCAGGNTGAGAAAGTCCAGGCCATGTATATCTGGATCGATGGTACTGGAGAAGGA
CTGCGCTGCAAGACCCCGACCTGGACAGTGAGCCCAAGTGTGGAAGAAGTGCCTGAGT
GGAATTTGATGCTCCAGTACTTTACAGTCTGAGGGTTCCAACAGTGACATGTATCTCG
TGCTGCTGCCATGTTTCGGGACCCCTCCGTAAGGACCCTAACAGCTGGGTGTATGTG
AAGTTTTCAAGTACAATCGAAGGCCTGCNNAGTGTGTATAGCACAGCTATGGATACCCCT
NCTCATCTGTATGCCTGTGTGAAGGG
```

**Restriction Sites:**

NotI-NotI

**ACCN:**

AK092874

**Insert Size:**

4700 bp

**OTI Disclaimer:**

Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).

**Components:**

The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

**Reconstitution Method:**

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

**RefSeq:**

[AK092874.1](#), [BAG52617.1](#)

**RefSeq Size:**

2265 bp

RefSeq ORF:	2265 bp
Locus ID:	2752
Cytogenetics:	1q25.3
Domains:	gln-synt_N
Protein Pathways:	Alanine, aspartate and glutamate metabolism, Arginine and proline metabolism, Metabolic pathways, Nitrogen metabolism
Gene Summary:	<p>The protein encoded by this gene belongs to the glutamine synthetase family. It catalyzes the synthesis of glutamine from glutamate and ammonia in an ATP-dependent reaction. This protein plays a role in ammonia and glutamate detoxification, acid-base homeostasis, cell signaling, and cell proliferation. Glutamine is an abundant amino acid, and is important to the biosynthesis of several amino acids, pyrimidines, and purines. Mutations in this gene are associated with congenital glutamine deficiency, and overexpression of this gene was observed in some primary liver cancer samples. There are six pseudogenes of this gene found on chromosomes 2, 5, 9, 11, and 12. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Dec 2014]</p>