

## Product datasheet for **SC114619**

### **NOP53 (NM\_015710) Human Untagged Clone**

#### **Product data:**

|                           |                                        |
|---------------------------|----------------------------------------|
| Product Type:             | Expression Plasmids                    |
| Product Name:             | NOP53 (NM_015710) Human Untagged Clone |
| Tag:                      | Tag Free                               |
| Symbol:                   | NOP53                                  |
| Synonyms:                 | GLTSCR2; PICT-1; PICT1                 |
| Mammalian Cell Selection: | None                                   |
| Vector:                   | <u>pCMV6-XL4</u>                       |
| E. coli Selection:        | Ampicillin (100 ug/mL)                 |



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**Fully Sequenced ORF:** >OriGene ORF within SC114619 sequence for NM\_015710 edited (data generated by NextGen Sequencing)

```
ATGGCGGCAGGAGGCAGTGGCGTTGGTGGGAAGCGCAGCTCGAAAAGCGATGCCGATTCT
GGTTTCCTGGGGCTGCGGCCACTTCGGTGGACCCAGCGCTGAGGCGGCGGCGGCGAGGC
CCAAGAAATAAGAAGCGGGGCTGGCGGCGGCTTGTCTAGGAGCCGCTGGGGCTGGAGGT
GACCAAGTTCCTGGAAGACGTGCGGCTACAGGAGCGCACGAGCGGTGGCTTGTGTCTAGAG
GCCCCAAATGAAAACTCTTCTCTGGGACACTGGCTCCAAGGAAAAAGGGCTGACAAAG
AAGAGAACCAAAAGTCCAGAAGAAGTCACTGCTTCTCAAGAAACCCCTTCGGGTTGACCTC
ATCCTCGAGAACACATCCAAAGTCCCTGCCCCAAAGACGTCTCGCCCAACAGGTCCCC
AACGCCAAGAAGCTCAGGCGGAAGGAGCAGCTATGGGAGAAGCTGGCCAAGCAGGGCGAG
CTGCCCCGGGAGGTGCGCAGGGCCAGGCCGCGCTCTCAACCTTCTGCAACAAGGGCC
AAGCCCGGGCCCCAGGACACCGTAGAGCGGCCCTTCTACGACCTCTGGGCTCAGACAAC
CCCCTGGACAGGCCGTTGGTTGGCCAGGATGAGTTTTTCTGGAGCAGACCAAGAAGAAA
GGAGTGAAGCGGCCAGCACGCTGCACACCAAGCCGTCCAGGCACCCGCGTGGAGGTG
GCGCCTGCCGAGCTTCTACAATCCATCCTTTGAAGACCACAGACCCTGCTCTCAGCG
GCCACAGAGGTGGAGTTGCAGCGGCAGAAAGGAGCGGAGAAGCTGGAGCGCAGCTGGCC
CTGCCCCGCCACGGAGCAGGCCGCCACCCAGGAGTCCACATTCCAGGAGCTGTGCGAGGGG
CTGCTGGAGGAGTCGGATGGTGGAGGGGAGCCAGGCCAGGGCGAGGGGCCGAGGCTGGG
GATGCCGAGGTCTGTCCACGCCCGCCGCTGGCCACCAAGAGAGAAGAAGCAGGAGCAG
CAGCGCGGCGGGGAGAAGGCTGTGCACAGGCTGCGGGTACAGCAGGCCGCGTTGCGGGCC
GCCCCGCTCCGGCACCAGGAGCTGTTCCGGCTGCGCGGGATCAAGGCCAGGTGGCCCTG
AGGCTGGCGGAGCTGGCGCGGCGGAGAGCGGCGGAGCGCGGCGGGAGGCTGAGGCT
GACAAGCCCCGAAGGCTGGGCGGCTCAAGTACCAGGCACCTGACATCGAGTGCAGCTG
AGCTCGGAGCTGACAGACTCGCTCAGGACCTGAAGCCGAGGGCAACATCCTTCGAGAC
CGTTCAAGAGCTTCCAGAGGAGGAATATGATCGAGCCTCGAGAGAGAGCCAAGTTCAAA
CGCAAGTACAAGGTGAAGCTGGTGGAGAAGCGGCGTTCCGTGAGATCCAGTTGTAG
```

Clone variation with respect to NM\_015710.4

**5' Read Nucleotide Sequence:**

```
>OriGene 5' read for NM_015710 unedited
TCAGATTTTGTAAACGACTTCACTATAGGGCGGCCGGAATTCGACCAGNAGAACTAG
TCTCGAGTTTTTTTTTTTTTTTTTTTGGACAAGATGGCGGCAGGAGCAGTGGCGTTGGT
GGGAAGCGCAGCTCGAAAAGCGATGCCGATTCTGGTTTCTGGGGCTGCGGCCCACTTCG
GTGGACCCAGCGCTGAGGCGGCGGCGGCGAGGCCCAAGAAATAAGAAGCGGGGCTGGCGG
CGGCTTGTCTAGGAGCCGCTGGGGCTGGAGGTTGACCAAGTTCCTGGAAGACGTGCGGCTA
CAGGAGCGCACGAGCGGTGGCTTGTGTCTAGAGGCCCAATGAAAACTCTTCTTCGTG
GACACTGGCTCCAAGGAAAAAGGGCTGACAAAGAAGAGAACCAAGTCCAGAAGAAGTCA
CTGCTTCTCAAGAAACCCCTTCGGGTTGACCTCATCCTCGAGAACACATCCAAAGTCCCT
GCCCCCAAGACGTCTCGCCCAACAGGTCCCCAACGCCAAGAAGCTCAGGCGGAAGGAG
CAGCTATGGGAGAAGCTGGCCAAGCAGGGCGAGCTGCCCCGGGAGGTGCGCAGGGCCAG
GCCCCGCTCTCAACCTTCTGCAAAAGGGCCAAGCCCGGGCCCCAGGACACCGTAGAGC
GGCCCTTCTACGACCTCTGGGCTCAGACAACCCCTGGACAGGCCGTTGGTTGGCCAGG
ATGAGTTTTTCTGGAGCAGACCAAGAAGAAAGGAGTGAAGCGGCCAGCACGCTGCACA
CCAAGCCGTCCAGGCACCCGCGTGGGAGTGGCGCTGCCGNAGCTTCTACAATCCAT
CCCTTTGAAGACACCAGAACCTGCTCTCAGCGGCCACNAGGTGGAGTTGCAACGCANAA
GGAGGCGAAAAGTGGAGCGCAGCTGGCCTGCCCGCACGNACAGCCGCCCCCAGATCCAC
ATCCAGGG
```

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3' Read Nucleotide Sequence:</b> | <p>&gt;OriGene 3' read for NM_015710 unedited</p> <pre> ATATGATGNACCGCGCCGATTCTANGATCGATTTTTTTTTTTTTTTTTTTTTTTTTTTTTT TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGAACAATAAAAAAATTTTATTGAA GGGGGAATCTCCGGCATTGATGGGAGCTACAACCTGGGTTTAAGGAACCCCGCTTTTC CACCAACTTTACCTTGGACTTGCCTTTGAACCTGGCTCTTCTCGAGGCTCGATCAAATT CCCCCCTGGAACTCTTGAACCCGCTCTAAAAGAAGTTGCCCGGGCTTTAAGGGCCT GAACGAATTTGTCAACTCCCACTCAACTGCACCTTAATGTGAGGGGGCCGGGACTTGAA CCCCCCAACCTTTGGGGCTTGGTAACCTTAAACTTCCGCCGGGCCTGGCGCCGCCTTTG GCGCCGGGCCAGCTTCGCCAACCTTAGGGCCACCTGGGCCTTGATCCCCCAACCGGAA CAACTCCTGGTGCCGAACCGGGCGGCCCAACGCGGCCTGGTGTACCGCAACCTGTG CACAACCTTTTCCGCCCGCTGGTGGTCCGTTTTTTTTTTTGGGGGGGCAAGCCGGC GGGCGTGGGACAAAATTTGGGATTCCAGCCTCCGGGCCCTCGCCTGGGCTGGGTCCC CTTAACATTGCAATTCTCAGAAGCCCTTGACAAGTTCTGGAATGGGACTCTGGGT GGCGGCCTGCTCCCTGGCGGGCAGGGCCAAATGGCGNTCAAATTTTCGCCTCTTTTG CGGTTGAACTCCACCTNTGGGCCCTGAAAACAAGTTCTGGGGGCCTTCAAAGGATGGAT TGAAGAACTCCGAGGGCCACCTCCACGGGGGTGCCTGGGACGCTTTGTGTGAACCTT C </pre> |
| <b>Restriction Sites:</b>           | NotI-NotI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>ACCN:</b>                        | NM_015710                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Insert Size:</b>                 | 1750 bp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>OTI Disclaimer:</b>              | 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).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Components:</b>                  | 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).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Reconstitution Method:</b>       | <ol style="list-style-type: none"> <li>1. Centrifuge at 5,000xg for 5min.</li> <li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li> <li>3. Close the tube and incubate for 10 minutes at room temperature.</li> <li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li> <li>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.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>RefSeq:</b>                      | <u>NM_015710.3, NP_056525.1</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>RefSeq Size:</b>                 | 1567 bp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>RefSeq ORF:</b>                  | 1437 bp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Locus ID:</b>                    | 29997                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>UniProt ID:</b>                  | <u>Q9NZM5</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Cytogenetics:</b>                | 19q13.33                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Protein Families:</b>            | Druggable Genome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

**Gene Summary:**

Nucleolar protein which is involved in the integration of the 5S RNP into the ribosomal large subunit during ribosome biogenesis (PubMed:24120868). In ribosome biogenesis, may also play a role in rRNA transcription (PubMed:27729611). Also functions as a nucleolar sensor that regulates the activation of p53/TP53 in response to ribosome biogenesis perturbation, DNA damage and other stress conditions (PubMed:21741933, PubMed:24120868, PubMed:27829214). DNA damage or perturbation of ribosome biogenesis disrupt the interaction between NOP53 and RPL11 allowing RPL11 transport to the nucleoplasm where it can inhibit MDM2 and allow p53/TP53 activation (PubMed:24120868, PubMed:27829214). It may also positively regulate the function of p53/TP53 in cell cycle arrest and apoptosis through direct interaction, preventing its MDM2-dependent ubiquitin-mediated proteasomal degradation (PubMed:22522597). Originally identified as a tumor suppressor, it may also play a role in cell proliferation and apoptosis by positively regulating the stability of PTEN, thereby antagonizing the PI3K-AKT/PKB signaling pathway (PubMed:15355975, PubMed:16971513, PubMed:27729611). May also inhibit cell proliferation and increase apoptosis through its interaction with NF2 (PubMed:21167305). May negatively regulate NPM1 by regulating its nucleoplasmic localization, oligomerization and ubiquitin-mediated proteasomal degradation (PubMed:25818168). Thereby, may prevent NPM1 interaction with MYC and negatively regulate transcription mediated by the MYC-NPM1 complex (PubMed:25956029). May also regulate cellular aerobic respiration (PubMed:24556985). In the cellular response to viral infection, may play a role in the attenuation of interferon-beta through the inhibition of DDX58/RIG-1 (PubMed:27824081).[UniProtKB/Swiss-Prot Function]