

Product datasheet for **RN202615**

Dyrk3 (NM_001024767) Rat Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Dyrk3 (NM_001024767) Rat Untagged Clone
Tag:	Tag Free
Symbol:	Dyrk3
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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Fully Sequenced ORF: >RN202615 representing NM_001024767
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGGAGGCGCAGCCCGCAGCGCGGGAGGAAGGACGCGCGCTGCCGGGGCCGGGCTCCCGCCGAGC
 AGCGGAGGTTGGGGATGGTGTCTATGATACCTTCATGATGATAGATGAAACCAAGTGCCACCCTATAC
 AACACACTTTGCAATCCCTCTGAAGCACCTGTCTCCAGAAGGCTAAATATTACCACTGAGCCATTCACG
 AGAGGCCACACTCAGCACTTCGTGAGTGGGGTGTGATGAAGGTGGAGCAACTGTTTCAAGAATTTGGCA
 GCAGAAGAACCAGTACTCTCCAGTCCGATGGCGTCAGCAACTCCGAAAAGTCCTCTCCTGCTTCTCAGGG
 GAAGAGTTCAGACAGCCTGGGTACAGTGAAGTGCAGCCTCTCATCCAGACCATCTAAGGTGCTCCCGCTG
 ACTCCTGAGCAAGCTCTGAAGCAGTACAAGCACCTCACCGCCTACGAGAAGTGGAGATCATCAGCT
 ACCCAGAAATCTACTTCGTGGGCCGAATGCCAAGAAGCGGCAAGGAGTTATTGGTGGTCCCAATAACGG
 GGGTACGACGATGCGGACGGGGCTATATCCAGTGCCTCGAGACCATCTGGCTTACCCTATGAGGTG
 CTGAAAATTATTGGCAAGGGGAGTTTTGGACAGGTAGCCCGGCTACGATCACAAACTCCGACAGTACG
 TGGCCCTGAAAATGGTGCACAACGAGAAGCGCTTTCACCGCCAGGCAGCCGAGGAGATCCGATTCTGGA
 GCATCTTAAAAAGCAAGACAAAAGTGGGAGCATGAATGTCATCCACATGTTAGAAAGCTTACCTTCCGG
 AACCACGTGTGCATGGCCTTTGAGTTGCTAAGCATAGACCTGTACGAGCTCATAAAAAAACAAGTTTC
 AGGGCTTCAGCGTCCAGTTGGTCCGGAAGTTCGCCAGTCCATCCTGCAGTCTTGGACGCCCTTACAA
 AAATAAGATCATTCACTGTGATCTGAAGCCTGAGAACATCTCCTGAAGCATCACGGACGGAGCGCGACC
 AAGGTCACTGACTTCGGTCCAGCTGTTTGGATCAGAACTTACACGTACATCCAGTCCCGTTTCT
 ACAGAGCCCGGAAATCATCTTGGGTGCCGCTACAGCACGCAATTGACATATGGAGTTTGGTTGCAT
 CCTCGCAGAACTTTTACAGGACAGCCCTGTTCCAGGAGAGGATGAAGGAGACCAGTTGGCCTGCATG
 ATGGAGTTGCTAGGAATGCCACCACAGAACTTCTGGAGCAATCCAAACGTGCCAAGTACTTTATTAAGT
 CCAAAGGCTTGCCTCGATACTGCTCCGTAAGTACCAGACGGACGGGAGGTTGTGCTTCTCGGGGGCCG
 CTCACGCAGGGTAAAAAGCAGGCCCACCAGGCAGCAAAGACTGGGCAGCCGCGCTGAAGGGTGCAT
 GACTACTTGTTCATAGAGTTTCTGAAAAGGTGCCTTCAAGTGGGACCCCTCTGCCGCTCACCCAGCTC
 AAGCATTAAAGACATCCTGGATTAGCAAGTCTGCACCCAGGCCCTCACACGGACAAGGTGTCAAGGAA
 ACGGGTAGTTAATCCTACAAATGCTTCCAGGACTGGGCTCAAAGCTGCCTCCAGTCGTTGGAATCGCC
 AGTAAGCTTAAAGCTAACCTAATGTCGAAACCAAGTGGTAGTATACCTCTGTGCAGTGTATTGCCAAGC
 TGATCAGCT**TAA**

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

- Restriction Sites:** SgfI-MluI
- ACCN:** NM_001024767
- Insert Size:** 1761 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: [NM_001024767.1](#), [NP_001019938.1](#)

RefSeq Size: 2146 bp

RefSeq ORF: 1761 bp

Locus ID: 304775

UniProt ID: [Q4V8A3](#)

Cytogenetics: 13q13

Gene Summary: Dual-specificity protein kinase that promotes disassembly of several types of membraneless organelles during mitosis, such as stress granules, nuclear speckles and pericentriolar material. Dual-specificity tyrosine-regulated kinases (DYRKs) autophosphorylate a critical tyrosine residue in their activation loop and phosphorylate their substrate on serine and threonine residues. Acts as a central dissolvase of membraneless organelles during the G2-to-M transition, after the nuclear-envelope breakdown: acts by mediating phosphorylation of multiple serine and threonine residues in unstructured domains of proteins, such as SRRM1 and PCM1. Does not mediate disassembly of all membraneless organelles: disassembly of P-body and nucleolus is not regulated by DYRK3. Dissolution of membraneless organelles at the onset of mitosis is also required to release mitotic regulators, such as ZNF207, from liquid-unmixed organelles where they are sequestered and keep them dissolved during mitosis. Regulates mTORC1 by mediating the dissolution of stress granules: during stressful conditions, DYRK3 partitions from the cytosol to the stress granule, together with mTORC1 components, which prevents mTORC1 signaling. When stress signals are gone, the kinase activity of DYRK3 is required for the dissolution of stress granule and mTORC1 relocation to the cytosol: acts by mediating the phosphorylation of the mTORC1 inhibitor AKT1S1, allowing full reactivation of mTORC1 signaling. Also acts as a negative regulator of EPO-dependent erythropoiesis: may place an upper limit on red cell production during stress erythropoiesis. Inhibits cell death due to cytokine withdrawal in hematopoietic progenitor cells. Promotes cell survival upon genotoxic stress through phosphorylation of SIRT1: this in turn inhibits p53/TP53 activity and apoptosis.[UniProtKB/Swiss-Prot Function]