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Stem Cell

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Stem Cell Research Literatures

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Abstract: Stem cells are derived from embryonic and non-embryonic tissues. Most stem cell studies are for animal stem cells and plants have also stem cell. Stem cells were discovered in 1981 from early mouse embryos. Stem cells have the potential to develop into all different cell types in the living body. Stem cell is a body repair system. When a stem cell divides it can be still a stem cell or become adult cell, such as a brain cell. Stem cells are unspecialized cells and can renew themselves by cell division, and stem cells can also differentiate to adult cells with special functions. Stem cells replace the old cells and repair the damaged tissues. Embryonic stem cells can become all cell types of the body because they are pluripotent. Adult stem cells are thought to be limited to differentiating into different cell types of their tissue of origin. This article introduces recent research reports as references in the related studies.
[Herbert M. **Stem Cell Research Literatures.** *Stem Cell* 2020;11(4):30-110]. ISSN: 1945-4570 (print); ISSN: 1945-4732 (online). http://www.sciencepub.net/stem. 4. doi:10.7537/marsscj110420.04.

Key words: stem cell; life; research; literature; gene

Introduction

The stem cell is the origin of an organism's life that has the potential to develop into many different types of cells in life bodies. In many tissues stem cells serve as a sort of internal repair system, dividing essentially without limit to replenish other cells as long as the person or animal is still alive. When a stem cell divides, each new cell has the potential either to remain a stem cell or become another type of cell with a more specialized function, such as a red blood cell or a brain cell. This article introduces recent research reports as references in the related studies.

The following introduces stem cell gens as references in the related studies.

Severe acute respiratory syndrome coronavirus 2 isolate Wuhan-Hu-1, complete genome
NCBI Reference Sequence: NC_045512.2
LOCUS NC_045512 29903 bp ss-RNA linear VRL 18-JUL-2020
DEFINITION Severe acute respiratory syndrome coronavirus 2 isolate Wuhan-Hu-1, complete genome.
ACCESSION NC_045512
VERSION NC_045512.2
DBLINK BioProject: PRJNA485481
KEYWORDS RefSeq.
SOURCE Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)
ORGANISM Severe acute respiratory syndrome coronavirus 2
Viruses; Riboviria; Orthornavirae; Pisuviricota; Pisoniviricetes; Nidovirales; Cornidovirineae; Coronaviridae; Orthocoronavirinae; Betacoronavirus; Sarbecovirus.
REFERENCE 1 (bases 1 to 29903)
AUTHORS Wu,F., Zhao,S., Yu,B., Chen,Y.M., Wang,W., Song,Z.G., Hu,Y., Tao,Z.W., Tian,J.H., Pei,Y.Y., Yuan,M.L., Zhang,Y.L., Dai,F.H., Liu,Y., Wang,Q.M., Zheng,J.J., Xu,L., Holmes,E.C. and Zhang,Y.Z.
TITLE A new coronavirus associated with human respiratory disease in China
JOURNAL Nature 579 (7798), 265-269 (2020)
PUBMED 32015508
REMARK Erratum:[Nature. 2020 Apr;580(7803):E7. PMID: 32296181]

REFERENCE 2 (bases 13476 to 13503)
AUTHORS Baranov,P.V., Henderson,C.M., Anderson,C.B., Gesteland,R.F., Atkins,J.F. and Howard,M.T.
TITLE Programmed ribosomal frameshifting in decoding the SARS-CoV genome
JOURNAL Virology 332 (2), 498-510 (2005)
PUBMED 15680415
REFERENCE 3 (bases 29728 to 29768)
AUTHORS Robertson,M.P., Igel,H., Baertsch,R., Haussler,D., Ares,M. Jr. and Scott,W.G.
TITLE The structure of a rigorously conserved RNA element within the SARS virus genome
JOURNAL PLoS Biol 3 (1), e5 (2005)
PUBMED 15630477
REFERENCE 4 (bases 29609 to 29657)
AUTHORS Williams,G.D., Chang,R.Y. and Brian,D.A.
TITLE A phylogenetically conserved hairpin-type 3' untranslated region pseudoknot functions in coronavirus RNA replication
JOURNAL J Virol 73 (10), 8349-8355 (1999)
PUBMED 10482585
REFERENCE 5 (bases 1 to 29903)
CONSRTM NCBI Genome Project
TITLE Direct Submission
JOURNAL Submitted (17-JAN-2020) National Center for Biotechnology Information, NIH, Bethesda, MD 20894, USA
REFERENCE 6 (bases 1 to 29903)
AUTHORS Wu,F., Zhao,S., Yu,B., Chen,Y.-M., Wang,W., Hu,Y., Song,Z.-G., Tao,Z.-W., Tian,J.-H., Pei,Y.-Y., Yuan,M.L., Zhang,Y.-L., Dai,F.-H., Liu,Y., Wang,Q.-M., Zheng,J.-J., Xu,L., Holmes,E.C. and Zhang,Y.-Z.
TITLE Direct Submission
JOURNAL Submitted (05-JAN-2020) Shanghai Public Health Clinical Center & School of Public Health, Fudan University, Shanghai, China
COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The reference sequence is identical to MN908947.
On Jan 17, 2020 this sequence version replaced NC_045512.1.
Annotation was added using homology to SARSr-CoV NC_004718.3. ### Formerly called 'Wuhan seafood market pneumonia virus.' If you have questions or suggestions, please email us at info@ncbi.nlm.nih.gov and include the accession number NC_045512.### Protein structures can be found at https://www.ncbi.nlm.nih.gov/structure/?term=sars-cov-2.### Find all other Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) sequences at https://www.ncbi.nlm.nih.gov/genbank/sars-cov-2-seqs/

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Assembly Method :: Megahit v. V1.1.3
Sequencing Technology :: Illumina
##Assembly-Data-END##
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proteinase, Y-domain, transmembrane domain 1 (TM1),
adenosine diphosphate-ribose 1"-phosphatase (ADRP);
produced by both pp1a and pp1ab"
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/gene="ORF1ab"
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/product="nsp4"
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produced by both pp1a and pp1ab"
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(Mpro); mediates cleavages downstream of nsp4. 3D
structure of the SARSr-CoV homolog has been determined
(Yang et al., 2003); produced by both pp1a and pp1ab"
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implies coordinates 29740:29758 form a noncanonical C:T
basepair, but the homologous positions form a highly
conserved C:G basepair in other viruses, including SARS
(NC_004718.3)"
/function="Coronavirus 3' stem-loop II-like motif (s2m)"
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121 cacgcagtat aattaataac taattactgt cgttgacagg acacgagtaa ctcgtctatc

181 ttctgcaggc tgcttacggt ttcgtccgtg ttgcagccga tcatcagcac atctaggttt
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FASTA Graphics
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ACCESSION NM_012676

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Muroidea; Muridae; Murinae; Rattus.
REFERENCE 1 (bases 1 to 1096)
AUTHORS Muslimovic A, Friden V, Tenstad O, Starnberg K, Nystrom S, Wesen E,
Esbjorner EK, Granholm K, Lindahl B and Hammarsten O.
TITLE The Liver and Kidneys mediate clearance of cardiac troponin in the
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JOURNAL Sci Rep 10 (1), 6791 (2020)
PUBMED 32322013
REMARK GeneRIF: The Liver and Kidneys mediate clearance of cardiac
troponin in the rat.
Publication Status: Online-Only
REFERENCE 2 (bases 1 to 1096)
AUTHORS Liu Y, Liao W, Wan L, Xiang T and Zhang W.
TITLE Correlation Between Relative Nasopharyngeal Virus RNA Load and
Lymphocyte Count Disease Severity in Patients with COVID-19
JOURNAL Viral Immunol (2020) In press
PUBMED 32297828
REMARK Publication Status: Available-Online prior to print
REFERENCE 3 (bases 1 to 1096)
AUTHORS Wijnker PJ, Li Y, Zhang P, Foster DB, dos Remedios C, Van Eyk JE,
Stienen GJ, Murphy AM and van der Velden J.
TITLE A novel phosphorylation site, Serine 199, in the C-terminus of
cardiac troponin I regulates calcium sensitivity and susceptibility
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JOURNAL J Mol Cell Cardiol 82, 93-103 (2015)
PUBMED 25771144
REFERENCE 4 (bases 1 to 1096)
AUTHORS Hao J, Galindo CL, Tran TL and Sawyer DB.
TITLE Neuregulin-1beta induces embryonic stem cell cardiomyogenesis via
ErbB3/ErbB2 receptors
JOURNAL Biochem J 458 (2), 335-341 (2014)
PUBMED 24364879
REFERENCE 5 (bases 1 to 1096)
AUTHORS Gollapudi SK, Gallon CE and Chandra M.
TITLE The tropomyosin binding region of cardiac troponin T modulates
crossbridge recruitment dynamics in rat cardiac muscle fibers
JOURNAL J Mol Biol 425 (9), 1565-1581 (2013)
PUBMED 23357173
REMARK GeneRIF: Replacement of the functionally corresponding N-terminal
end portion of rat fast skeletal cardiac muscle (RfsTnT) into
cardiac muscle troponin T (RcTnT), the observed functional
differences associate with a sequence variation.
REFERENCE 6 (bases 1 to 1096)
AUTHORS Watkins H, McKenna WJ, Thierfelder L, Suk HJ, Anan R, O'Donoghue A,
Spirito P, Matsumori A, Moravec CS, Seidman JG et al.
TITLE Mutations in the genes for cardiac troponin T and alpha-tropomyosin
in hypertrophic cardiomyopathy
JOURNAL N Engl J Med 332 (16), 1058-1064 (1995)
PUBMED 7898523
REFERENCE 7 (bases 1 to 1096)

AUTHORS Thierfelder L, Watkins H, MacRae C, Lamas R, McKenna W, Vosberg HP, Seidman JG and Seidman CE.
TITLE Alpha-tropomyosin and cardiac troponin T mutations cause familial hypertrophic cardiomyopathy: a disease of the sarcomere
JOURNAL Cell 77 (5), 701-712 (1994)
PUBMED 8205619
REFERENCE 8 (bases 1 to 1096)
AUTHORS Jin JP, Huang QQ, Yeh HI and Lin JJ.
TITLE Complete nucleotide sequence and structural organization of rat cardiac troponin T gene. A single gene generates embryonic and adult isoforms via developmentally regulated alternative splicing
JOURNAL J Mol Biol 227 (4), 1269-1276 (1992)
PUBMED 1433301
REFERENCE 9 (bases 1 to 1096)
AUTHORS Solaro RJ, el-Saleh SC and Kentish JC.
TITLE Ca2+, pH and the regulation of cardiac myofilament force and ATPase activity
JOURNAL Mol Cell Biochem 89 (2), 163-167 (1989)
PUBMED 2530435
REFERENCE 10 (bases 1 to 1096)
AUTHORS Jin JP and Lin JJ.
TITLE Isolation and characterization of cDNA clones encoding embryonic and adult isoforms of rat cardiac troponin T
JOURNAL J Biol Chem 264 (24), 14471-14477 (1989)
PUBMED 2760070
COMMENT PROVISIONAL REFSEQ: This record has not yet been subject to final NCBI review. The reference sequence was derived from M26051.1.

Summary: tropomyosin-binding subunit of troponin; confers calcium-sensitivy to actinomysin ATPase activity in striated muscle [RGD, Feb 2006].

Publication Note: This RefSeq record includes a subset of the publications that are available for this gene. Please see the Gene record to access additional publications.

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The above contents are the collected information from Internet and public resources to offer to the people for the convenient reading and information disseminating and sharing.

References

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Homo sapiens microRNA 1207 (MIR1207), microRNA

NCBI Reference Sequence: NR_031612.1

FASTA Graphics

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VERSION NR_031612.1
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REFERENCE 1 (bases 1 to 87)
AUTHORS Bertolazzi G, Cipollina C, Benos PV, Tumminello M and Coronnello C.
TITLE miR-1207-5p Can Contribute to Dysregulation of Inflammatory Response in COVID-19 via Targeting SARS-CoV-2 RNA
JOURNAL Front Cell Infect Microbiol 10, 586592 (2020)
PUBMED 33194826
REMARK GeneRIF: miR-1207-5p Can Contribute to Dysregulation of Inflammatory Response in COVID-19 via Targeting SARS-CoV-2 RNA. Publication Status: Online-Only
REFERENCE 2 (bases 1 to 87)
AUTHORS Yan Y, Su M and Qin B.
TITLE CircHIPK3 promotes colorectal cancer cells proliferation and metastasis via modulating of miR-1207-5p/FMNL2 signal
JOURNAL Biochem Biophys Res Commun 524 (4), 839-846 (2020)
PUBMED 32046858
REMARK GeneRIF: CircHIPK3 promotes colorectal cancer cells proliferation and metastasis via modulating of miR-1207-5p/FMNL2 signal.
REFERENCE 3 (bases 1 to 87)
AUTHORS Cui M, Chang Y, Fang QG, Du W, Wu JF, Wang JH, Liu ST and Luo SX.
TITLE Non-Coding RNA Pvt1 Promotes Cancer Stem Cell-Like Traits in Nasopharyngeal Cancer via Inhibiting miR-1207
JOURNAL Pathol Oncol Res 25 (4), 1411-1422 (2019)
PUBMED 30141114
REMARK GeneRIF: Low expression of MIR1207 is associated with Nasopharyngeal Cancer.
REFERENCE 4 (bases 1 to 87)
AUTHORS Chao PC, Cui MY, Li XA, Jiang Y, Lin BC and Li ZB.
TITLE Correlation between miR-1207-5p expression with steroid-induced necrosis of femoral head and VEGF expression
JOURNAL Eur Rev Med Pharmacol Sci 23 (7), 2710-2718 (2019)
PUBMED 31002120
REMARK GeneRIF: Correlation between miR-1207-5p expression with steroid-induced necrosis of femoral head and VEGF expression.
REFERENCE 5 (bases 1 to 87)
AUTHORS Song P and Yin SC.
TITLE Long non-coding RNA 319 facilitates nasopharyngeal carcinoma carcinogenesis through regulation of miR-1207-5p/KLF12 axis
JOURNAL Gene 680, 51-58 (2019)
PUBMED 30243935
REMARK GeneRIF: Data found that miR-1207 expression was decreased in nasopharyngeal carcinoma (NPC) tissues, and LINC00319 facilitated cell proliferation in vitro via sponging miR-1207-5p in NPC cells.
REFERENCE 6 (bases 1 to 87)
AUTHORS Chen L, Lu MH, Zhang D, Hao NB, Fan YH, Wu YY, Wang SM, Xie R, Fang DC, Zhang H, Hu CJ and Yang SM.
TITLE miR-1207-5p and miR-1266 suppress gastric cancer growth and invasion by targeting telomerase reverse transcriptase
JOURNAL Cell Death Dis 5, e1034 (2014)
PUBMED 24481448
REMARK GeneRIF: MiR-1207-5p and miR-1266 suppress gastric cancer growth and invasion by targeting TERT.

Publication Status: Online-Only
REFERENCE 7 (bases 1 to 87)
AUTHORS Alvarez ML, Khosroheidari M, Eddy E and Kiefer J.
TITLE Role of microRNA 1207-5P and its host gene, the long non-coding RNA Pvt1, as mediators of extracellular matrix accumulation in the kidney: implications for diabetic nephropathy
JOURNAL PLoS One 8 (10), e77468 (2013)
PUBMED 24204837
REMARK GeneRIF: miR-1207-5p, a PVT1-derived microRNA, is abundantly expressed in kidney cells, and is upregulated by glucose and TGF-beta1.
Erratum:[PLoS One. 2016 Dec 9;11(12):e0168353. PMID: 27936176]
Publication Status: Online-Only
REFERENCE 8 (bases 1 to 87)
AUTHORS Papagregoriou G, Erguler K, Dweep H, Voskarides K, Koupepidou P, Athanasiou Y, Pierides A, Gretz N, Felekkis KN and Deltas C.
TITLE A miR-1207-5p binding site polymorphism abolishes regulation of HBEGF and is associated with disease severity in CFHR5 nephropathy
JOURNAL PLoS One 7 (2), e31021 (2012)
PUBMED 22319602
REMARK GeneRIF: variant 1936T prevents hsa-miR-1207-5p from down-regulating HBEGF in podocytes
REFERENCE 9 (bases 1 to 87)
AUTHORS Huppi K, Volfovsky N, Runfola T, Jones TL, Mackiewicz M, Martin SE, Mushinski JF, Stephens R and Caplen NJ.
TITLE The identification of microRNAs in a genomically unstable region of human chromosome 8q24
JOURNAL Mol Cancer Res 6 (2), 212-221 (2008)
PUBMED 18314482
REFERENCE 10 (bases 1 to 87)
AUTHORS Griffiths-Jones S, Grocock RJ, van Dongen S, Bateman A and Enright AJ.
TITLE miRBase: microRNA sequences, targets and gene nomenclature
JOURNAL Nucleic Acids Res 34 (Database issue), D140-D144 (2006)
PUBMED 16381832
COMMENT PROVISIONAL REFSEQ: This record is based on preliminary annotation provided by NCBI staff in collaboration with miRBase. The reference sequence was derived from AC103705.5.

Summary: microRNAs (miRNAs) are short (20-24 nt) non-coding RNAs that are involved in post-transcriptional regulation of gene expression in multicellular organisms by affecting both the stability and translation of mRNAs. miRNAs are transcribed by RNA polymerase II as part of capped and polyadenylated primary transcripts (pri-miRNAs) that can be either protein-coding or non-coding. The primary transcript is cleaved by the Drosha ribonuclease III enzyme to produce an approximately 70-nt stem-loop precursor miRNA (pre-miRNA), which is further cleaved by the cytoplasmic Dicer ribonuclease to generate the mature miRNA and antisense miRNA star (miRNA*) products. The mature miRNA is incorporated into a RNA-induced silencing complex (RISC), which recognizes target mRNAs through imperfect base pairing with the miRNA and most commonly results in translational inhibition or destabilization of the target mRNA. The RefSeq represents the predicted microRNA stem-loop. [provided by RefSeq, Sep 2009].

Sequence Note: This record represents a predicted microRNA stem-loop as defined by miRBase. Some sequence at the 5' and 3' ends may not be included in the intermediate precursor miRNA produced by Drosha cleavage.

Publication Note: This RefSeq record includes a subset of the publications that are available for this gene. Please see the Gene record to access additional publications.

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Rattus norvegicus ferritin heavy chain 1 (Fth1), mRNA
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Muroidea; Muridae; Murinae; Rattus.
REFERENCE 1 (bases 1 to 828)
AUTHORS Zhang Y, Li H, Zhang J, Cao Y, Zhao X, Yu N, Gao Y, Ma J, Zhang H, Zhang J, Guo X and Liu X.
TITLE The clinical characteristics and outcomes of patients with diabetes and secondary hyperglycaemia with coronavirus disease 2019: A single-centre, retrospective, observational study in Wuhan
JOURNAL Diabetes Obes Metab 22 (8), 1443-1454 (2020)
PUBMED 32406594
REFERENCE 2 (bases 1 to 828)
AUTHORS Hou H, Zhang B, Huang H, Luo Y, Wu S, Tang G, Liu W, Mao L, Mao L, Wang F and Sun Z.
TITLE Using IL-2R/lymphocytes for predicting the clinical progression of patients with COVID-19
JOURNAL Clin Exp Immunol 201 (1), 76-84 (2020)
PUBMED 32365221
REFERENCE 3 (bases 1 to 828)
AUTHORS Mu T, Qin Y, Liu B, He X, Liao Y, Sun J, Qiu J, Li X, Zhong Y and Cai J.
TITLE In Vitro Neural Differentiation of Bone Marrow Mesenchymal Stem Cells Carrying the FTH1 Reporter Gene and Detection with MRI
JOURNAL Biomed Res Int 2018, 1978602 (2018)
PUBMED 30046590
REMARK GeneRIF: FTH1 gene expression did not affect mesenchymal stem cell differentiation into neurons and was not affected by neural differentiation
Publication Status: Online-Only
REFERENCE 4 (bases 1 to 828)
AUTHORS Festa L, Gutoskey CJ, Graziano A, Waterhouse BD and Meucci O.
TITLE Induction of Interleukin-1beta by Human Immunodeficiency Virus-1 Viral Proteins Leads to Increased Levels of Neuronal Ferritin Heavy Chain, Synaptic Injury, and Deficits in Flexible Attention
JOURNAL J Neurosci 35 (29), 10550-10561 (2015)
PUBMED 26203149
REMARK GeneRIF: This work demonstrates the key role of the cytokine IL-1beta in the regulation of a novel intracellular mediator [i.e., the protein ferritin heavy chain (FHC)] of HIV-induced dendritic damage and the resulting neurocognitive impairment.
REFERENCE 5 (bases 1 to 828)
AUTHORS Lane DJ, Merlot AM, Huang ML, Bae DH, Jansson PJ, Sahni S, Kalinowski DS and Richardson DR.
TITLE Cellular iron uptake, trafficking and metabolism: Key molecules and

mechanisms and their roles in disease
JOURNAL Biochim Biophys Acta 1853 (5), 1130-1144 (2015)
PUBMED 25661197
REMARK Review article
REFERENCE 6 (bases 1 to 828)
AUTHORS Wu CG, Groenink M, Bosma A, Reitsma PH, van Deventer SJ and Chamuleau RA.
TITLE Rat ferritin-H: cDNA cloning, differential expression and localization during hepatocarcinogenesis
JOURNAL Carcinogenesis 18 (1), 47-52 (1997)
PUBMED 9054589
REFERENCE 7 (bases 1 to 828)
AUTHORS Ursini MV and de Franciscis V.
TITLE TSH regulation of ferritin H chain messenger RNA levels in the rat thyroids
JOURNAL Biochem Biophys Res Commun 150 (1), 287-295 (1988)
PUBMED 2827671
REFERENCE 8 (bases 1 to 828)
AUTHORS Murray MT, White K and Munro HN.
TITLE Conservation of ferritin heavy subunit gene structure: implications for the regulation of ferritin gene expression
JOURNAL Proc Natl Acad Sci U S A 84 (21), 7438-7442 (1987)
PUBMED 3478702
REFERENCE 9 (bases 1 to 828)
AUTHORS Krawetz,S.A., Connor,W., Cannon,P.D. and Dixon,G.H.
TITLE A vector-primer-cloner-sequencer plasmid for the construction of cDNA libraries: evidence for a rat glyceraldehyde-3-phosphate dehydrogenase-like mRNA and a ferritin mRNA within testis
JOURNAL DNA 5 (5), 427-435 (1986)
PUBMED 3780374
REMARK Erratum:[DNA 1986 Oct;6(3):281]
REFERENCE 10 (bases 1 to 828)
AUTHORS Leibold,E.A., Aziz,N., Brown,A.J. and Munro,H.N.
TITLE Conservation in rat liver of light and heavy subunit sequences of mammalian ferritin. Presence of unique octopeptide in the light subunit
JOURNAL J Biol Chem 259 (7), 4327-4334 (1984)
PUBMED 6546756
COMMENT PROVISIONAL REFSEQ: This record has not yet been subject to final NCBI review. The reference sequence was derived from U58829.1.
On Aug 30, 2012 this sequence version replaced NM_012848.1.

Summary: overexpressed during hepatic tumor development; used as an early marker for hepatocellular carcinoma [RGD, Feb 2006].

Publication Note: This RefSeq record includes a subset of the publications that are available for this gene. Please see the Gene record to access additional publications.

##Evidence-Data-START##
Transcript exon combination :: U58829.1, FQ229789.1 [ECO:0000332]
RNAseq introns :: single sample supports all introns
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[ECO:0000348]
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Anguilla japonica esrs34e10-5 mRNA for spermatogonial stem-cell renewal factor, complete cds
GenBank: AB097149.1
FASTA Graphics
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VERSION AB097149.1
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Anguillidae; Anguilla.
REFERENCE 1
AUTHORS Miura,T., Ohta,T., Miura,C.I. and Yamauchi,K.
TITLE Complementary deoxyribonucleic acid cloning of spermatogonial stem
cell renewal factor
JOURNAL Endocrinology 144 (12), 5504-5510 (2003)
PUBMED 12960007
REFERENCE 2 (bases 1 to 1711)
AUTHORS Miura,T.
TITLE Direct Submission
JOURNAL Submitted (28-NOV-2002) Takeshi Miura, Ehime University, Laboratoly
of Fish Reproductive Physiology, Faculty of Agriculture;
3-5-7Tarumi, Matuyama, Ehime 790-8566, Japan
(E-mail:miutake@agr.ehime-u.ac.jp, Tel:81-89-946-9818,
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WO 2017078176-A/1: A method for producing immortal stem cell and a sell produced

GenBank: LX157047.1

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DEFINITION  WO 2017078176-A/1: A method for producing immortal stem cell and a
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ACCESSION   LX157047
VERSION     LX157047.1
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REFERENCE   1  (bases 1 to 3928)
  AUTHORS   Yamashita,Y.
  TITLE     A method for producing immortal stem cell and a sell produced
  JOURNAL   Patent: WO 2017078176-A 1 11-MAY-2017;
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WO 2017078176-A/2: A method for producing immortal stem cell and a sell produced

GenBank: LX157048.1

FASTA Graphics

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LOCUS LX157048 2556 bp DNA linear PAT 28-SEP-2017

DEFINITION WO 2017078176-A/2: A method for producing immortal stem cell and a sell produced.

ACCESSION LX157048
VERSION LX157048.1
KEYWORDS WO 2017078176-A/2.
SOURCE synthetic construct
ORGANISM synthetic construct
other sequences; artificial sequences.
REFERENCE 1 (bases 1 to 2556)
AUTHORS Yamashita,Y.
TITLE A method for producing immortal stem cell and a sell produced
JOURNAL Patent: WO 2017078176-A 2 11-MAY-2017;
Quarrymen and Co Inc
COMMENT OS Artificial Sequence
PN WO 2017078176-A/2
PD 11-MAY-2017
PF 07-NOV-2016 WO 2016JP082975
PR 05-NOV-2015 JP 2015-217428
PA Quarrymen and Co Inc
PI yasuhiro yamashita
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Hydra vulgaris FoxO transcription factor mRNA, complete cds

GenBank: JX118843.1

FASTA Graphics

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LOCUS JX118843 2206 bp mRNA linear INV 29-NOV-2012
DEFINITION Hydra vulgaris FoxO transcription factor mRNA, complete cds.
ACCESSION JX118843
VERSION JX118843.1
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ORGANISM Hydra vulgaris
Eukaryota; Metazoa; Cnidaria; Hydrozoa; Hydroidolina;
Anthoathecata; Aplanulata; Hydridae; Hydra.
REFERENCE 1 (bases 1 to 2206)
AUTHORS Boehm,A.M., Khalturin,K., Anton-Erxleben,F., Hemmrich,G.,
Klostermeier,U.C., Lopez-Quintero,J.A., Oberg,H.H., Puchert,M.,
Rosenstiel,P., Wittlieb,J. and Bosch,T.C.
TITLE FoxO is a critical regulator of stem cell maintenance in immortal
Hydra
JOURNAL Proc. Natl. Acad. Sci. U.S.A. 109 (48), 19697-19702 (2012)
PUBMED 23150562
REFERENCE 2 (bases 1 to 2206)
AUTHORS Boehm,A.-M., Hemmrich,G., Khalturin,K., Puchert,M.,
Anton-Erxleben,F., Wittlieb,J., Klostermeier,U.C., Rosenstiel,P.,
Oberg,H.-H. and Bosch,T.C.G.
TITLE Direct Submission
JOURNAL Submitted (30-MAY-2012) Zoological Institute, Christian-Albrechts
University, Olshausenstrasse 40, Kiel 24098, Germany
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Hydra vulgaris PIWI mRNA, complete cds
GenBank: JX118847.1
FASTA Graphics
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DEFINITION Hydra vulgaris PIWI mRNA, complete cds.
ACCESSION JX118847

VERSION JX118847.1
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SOURCE Hydra vulgaris (swiftwater hydra)
ORGANISM Hydra vulgaris
Eukaryota; Metazoa; Cnidaria; Hydrozoa; Hydroidolina;
Anthoathecata; Aplanulata; Hydridae; Hydra.
REFERENCE 1 (bases 1 to 3231)
AUTHORS Boehm,A.M., Khalturin,K., Anton-Erxleben,F., Hemmrich,G.,
Klostermeier,U.C., Lopez-Quintero,J.A., Oberg,H.H., Puchert,M.,
Rosenstiel,P., Wittlieb,J. and Bosch,T.C.
TITLE FoxO is a critical regulator of stem cell maintenance in immortal
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JOURNAL Proc. Natl. Acad. Sci. U.S.A. 109 (48), 19697-19702 (2012)
PUBMED 23150562
REFERENCE 2 (bases 1 to 3231)
AUTHORS Boehm,A.-M., Hemmrich,G., Khalturin,K., Puchert,M.,
Anton-Erxleben,F., Wittlieb,J., Klostermeier,U.C., Rosenstiel,P.,
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TITLE Direct Submission
JOURNAL Submitted (30-MAY-2012) Zoological Institute, Christian-Albrechts
University, Olshausenstrasse 40, Kiel 24098, Germany
FEATURES Location/Qualifiers
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Echinococcus multilocularis argonaute-like protein 2 (ago2-A) mRNA, partial cds
GenBank: KF768022.1
FASTA Graphics
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LOCUS KF768022 2410 bp mRNA linear INV 12-APR-2014
DEFINITION Echinococcus multilocularis argonaute-like protein 2 (ago2-A) mRNA, partial cds.
ACCESSION KF768022

VERSION KF768022.1
KEYWORDS .
SOURCE Echinococcus multilocularis
ORGANISM Echinococcus multilocularis
Eukaryota; Metazoa; Spiralia; Lophotrochozoa; Platyhelminthes;
Cestoda; Eucestoda; Cyclophyllidea; Taeniidae; Echinococcus.
REFERENCE 1 (bases 1 to 2410)
AUTHORS Koziol,U., Rauschendorfer,T., Zanon Rodriguez,L., Krohne,G. and
Brehm,K.
TITLE The unique stem cell sysem of the immortal larva of the human
parasite Echinococcus multilocularis
JOURNAL Evodevo 5 (1), 10 (2014)
PUBMED 24602211
REMARK Publication Status: Online-Only
REFERENCE 2 (bases 1 to 2410)
AUTHORS Koziol,U., Rauschendorfer,T., Zanon Rodriguez,L. and Brehm,K.
TITLE Direct Submission
JOURNAL Submitted (25-OCT-2013) Institute for Hygiene and Microbiology,
University of Wuerzburg, Josef-Schneider-Strasse 2 / Bau E1,
Wuerzburg, Bayern 97080, Germany
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Echinococcus multilocularis hdac1 (hdac1) mRNA, complete cds

GenBank: KF768025.1

FASTA Graphics

Go to:

LOCUS KF768025 1739 bp mRNA linear INV 12-APR-2014
DEFINITION Echinococcus multilocularis hdac1 (hdac1) mRNA, complete cds.
ACCESSION KF768025
VERSION KF768025.1
KEYWORDS .
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ORGANISM Echinococcus multilocularis
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Cestoda; Eucestoda; Cyclophyllidea; Taeniidae; Echinococcus.
REFERENCE 1 (bases 1 to 1739)
AUTHORS Koziol,U., Rauschendorfer,T., Zanon Rodriguez,L., Krohne,G. and
Brehm,K.
TITLE The unique stem cell sysem of the immortal larva of the human
parasite Echinococcus multilocularis
JOURNAL Evodevo 5 (1), 10 (2014)
PUBMED 24602211
REMARK Publication Status: Online-Only

REFERENCE 2 (bases 1 to 1739)
AUTHORS Koziol,U., Rauschendorfer,T., Zanon Rodriguez,L. and Brehm,K.
TITLE Direct Submission
JOURNAL Submitted (25-OCT-2013) Institute for Hygiene and Microbiology,
University of Wuerzburg, Josef-Schneider-Strasse 2 / Bau E1,
Wuerzburg, Bayern 97080, Germany
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Homo sapiens prostate stem cell antigen (PSCA), RefSeqGene on chromosome 8
NCBI Reference Sequence: NG_011722.3
FASTA Graphics
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DEFINITION Homo sapiens prostate stem cell antigen (PSCA), RefSeqGene on chromosome 8.
ACCESSION NG_011722
VERSION NG_011722.3
KEYWORDS RefSeq; RefSeqGene.
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 19418)
AUTHORS Wu C, Wang G, Yang M, Huang L, Yu D, Tan W and Lin D.
TITLE Two genetic variants in prostate stem cell antigen and gastric cancer susceptibility in a Chinese population
JOURNAL Mol Carcinog 48 (12), 1131-1138 (2009)
PUBMED 19554573
REFERENCE 2 (bases 1 to 19418)
AUTHORS Matsuo K, Tajima K, Suzuki T, Kawase T, Watanabe M, Shitara K, Misawa K, Ito S, Sawaki A, Muro K, Nakamura T, Yamao K, Yamamura Y, Hamajima N, Hiraki A and Tanaka H.
TITLE Association of prostate stem cell antigen gene polymorphisms with the risk of stomach cancer in Japanese
JOURNAL Int J Cancer 125 (8), 1961-1964 (2009)
PUBMED 19582881
REFERENCE 3 (bases 1 to 19418)
AUTHORS Wu,X., Ye,Y., Kiemeney,L.A., Sulem,P., Rafnar,T., Matullo,G., Seminara,D., Yoshida,T., Saeki,N., Andrew,A.S., Dinney,C.P., Czerniak,B., Zhang,Z.F., Kiltie,A.E., Bishop,D.T., Vineis,P., Porru,S., Buntinx,F., Kellen,E., Zeegers,M.P., Kumar,R., Rudnai,P., Gurzau,E., Koppova,K., Mayordomo,J.I., Sanchez,M., Saez,B., Lindblom,A., de Verdier,P., Steineck,G., Mills,G.B., Schned,A., Guarrera,S., Polidoro,S., Chang,S.C., Lin,J., Chang,D.W., Hale,K.S., Majewski,T., Grossman,H.B., Thorlacius,S., Thorsteinsdottir,U., Aben,K.K., Witjes,J.A., Stefansson,K., Amos,C.I., Karagas,M.R. and Gu,J.
TITLE Genetic variation in the prostate stem cell antigen gene PSCA confers susceptibility to urinary bladder cancer
JOURNAL Nat Genet 41 (9), 991-995 (2009)
PUBMED 19648920
REMARK Erratum:[Nat Genet. 2009 Oct;41(10):1156. Guarrera, Simonetta [added]; Polidoro, Silvia [added]]
REFERENCE 4 (bases 1 to 19418)
AUTHORS Sakamoto H, Yoshimura K, Saeki N, Katai H, Shimoda T, Matsuno Y, Saito D, Sugimura H, Tanioka F, Kato S, Matsukura N, Matsuda N, Nakamura T, Hyodo I, Nishina T, Yasui W, Hirose H, Hayashi M, Toshiro E, Ohnami S, Sekine A, Sato Y, Totsuka H, Ando M, Takemura R, Takahashi Y, Ohdaira M, Aoki K, Honmyo I, Chiku S, Aoyagi K, Sasaki H, Ohnami S, Yanagihara K, Yoon KA, Kook MC, Lee YS, Park

SR, Kim CG, Choi IJ, Yoshida T, Nakamura Y and Hirohashi S.
CONSRTM Study Group of Millennium Genome Project for Cancer
TITLE Genetic variation in PSCA is associated with susceptibility to diffuse-type gastric cancer
JOURNAL Nat Genet 40 (6), 730-740 (2008)
PUBMED 18488030
REFERENCE 5 (bases 1 to 19418)
AUTHORS Schlosser E, Otero C, Wuensch C, Kessler B, Edelmann M, Brunisholz R, Drexler I, Legler DF and Groettrup M.
TITLE A novel cytosolic class I antigen-processing pathway for endoplasmic-reticulum-targeted proteins
JOURNAL EMBO Rep 8 (10), 945-951 (2007)
PUBMED 17853904
COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The reference sequence was derived from AC108002.3 and KC877375.1.
This sequence is a reference standard in the RefSeqGene project.
On Jan 20, 2016 this sequence version replaced NG_011722.2.

Summary: This gene encodes a glycosylphosphatidylinositol-anchored cell membrane glycoprotein. In addition to being highly expressed in the prostate it is also expressed in the bladder, placenta, colon, kidney, and stomach. This gene is up-regulated in a large proportion of prostate cancers and is also detected in cancers of the bladder and pancreas. This gene includes a polymorphism that results in an upstream start codon in some individuals; this polymorphism is thought to be associated with a risk for certain gastric and bladder cancers. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Feb 2010].

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Homo sapiens HECT, UBA and WWE domain containing E3 ubiquitin protein ligase 1 (HUWE1), mRNA
NCBI Reference Sequence: NM_031407.7
FASTA Graphics

Go to:
LOCUS NM_031407 14731 bp mRNA linear PRI 12-DEC-2020
DEFINITION Homo sapiens HECT, UBA and WWE domain containing E3 ubiquitin protein ligase 1 (HUWE1), mRNA.
ACCESSION NM_031407 NM_005703 NM_017627 XM_497119
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 14731)
AUTHORS Crawford LJ, Campbell DC, Morgan JJ, Lawson MA, Down JM, Chauhan D, McAvera RM, Morris TC, Hamilton C, Krishnan A, Rajalingam K, Chantry AD and Irvine AE.
TITLE The E3 ligase HUWE1 inhibition as a therapeutic strategy to target MYC in multiple myeloma
JOURNAL Oncogene 39 (27), 5001-5014 (2020)
PUBMED 32523091
REMARK GeneRIF: The E3 ligase HUWE1 inhibition as a therapeutic strategy to target MYC in multiple myeloma.
REFERENCE 2 (bases 1 to 14731)
AUTHORS Zhang Y, Zhang Y and Xu H.
TITLE LIMCH1 suppress the growth of lung cancer by interacting with HUWE1 to sustain p53 stability
JOURNAL Gene 712, 143963 (2019)
PUBMED 31279706
REMARK GeneRIF: LIMCH1 is a negative regulator involved in a new molecular mechanism for the pathogenesis of lung cancer with HUWE1 and p53
REFERENCE 3 (bases 1 to 14731)
AUTHORS Lee HJ, Li CF, Ruan D, He J, Montal ED, Lorenz S, Girnun GD and Chan CH.
TITLE Non-proteolytic ubiquitination of Hexokinase 2 by HectH9 controls tumor metabolism and cancer stem cell expansion
JOURNAL Nat Commun 10 (1), 2625 (2019)
PUBMED 31201299
REMARK GeneRIF: Study in cancer cell lines identify that K63-linked ubiquitination by HECTH9 regulates the mitochondrial localization and function of hexokinase 2 (HK2). Histological analyses show that HECTH9 expression is upregulated and correlated with disease progression in prostate cancer. Results suggest that HECTH9 is a novel regulator of HK2 and cancer metabolism.
Publication Status: Online-Only
REFERENCE 4 (bases 1 to 14731)
AUTHORS Bernassola F, Karin M, Ciechanover A and Melino G.
TITLE The HECT family of E3 ubiquitin ligases: multiple players in cancer development
JOURNAL Cancer Cell 14 (1), 10-21 (2008)
PUBMED 18598940
REMARK Review article
REFERENCE 5 (bases 1 to 14731)
AUTHORS Zhong Q, Gao W, Du F and Wang X.
TITLE Mule/ARF-BP1, a BH3-only E3 ubiquitin ligase, catalyzes the polyubiquitination of Mcl-1 and regulates apoptosis
JOURNAL Cell 121 (7), 1085-1095 (2005)

PUBMED 15989957
REMARK GeneRIF: Mule is both required and sufficient for the polyubiquitination of Mcl-1; Mule is a unique BH3-containing E3 ubiquitin ligase apical to Bcl-2 family proteins during DNA damage-induced apoptosis
GeneRIF: Mule (HUWE1) poly-ubiquitinates anti-apoptotic gene Mcl-1.
REFERENCE 6 (bases 1 to 14731)
AUTHORS Chen D, Kon N, Li M, Zhang W, Qin J and Gu W.
TITLE ARF-BP1/Mule is a critical mediator of the ARF tumor suppressor
JOURNAL Cell 121 (7), 1071-1083 (2005)
PUBMED 15989956
REMARK GeneRIF: study modifies the current view of ARF-mediated p53 activation and reveals that ARF-BP1 is a critical mediator of both the p53-independent and p53-dependent tumor suppressor functions of ARF
GeneRIF: Ubiquitin ligase activity of ARF-BP1 (HUWE1) is inhibited by Arf.
REFERENCE 7 (bases 1 to 14731)
AUTHORS Liu Z, Oughtred R and Wing SS.
TITLE Characterization of E3Histone, a novel testis ubiquitin protein ligase which ubiquitinates histones
JOURNAL Mol Cell Biol 25 (7), 2819-2831 (2005)
PUBMED 15767685
REFERENCE 8 (bases 1 to 14731)
AUTHORS Gu J, Dubner R, Fornace AJ Jr and Iadarola MJ.
TITLE UREB1, a tyrosine phosphorylated nuclear protein, inhibits p53 transactivation
JOURNAL Oncogene 11 (10), 2175-2178 (1995)
PUBMED 7478539
REFERENCE 9 (bases 1 to 14731)
AUTHORS Turner G, Gedeon A and Mulley J.
TITLE X-linked mental retardation with heterozygous expression and macrocephaly: pericentromeric gene localization
JOURNAL Am J Med Genet 51 (4), 575-580 (1994)
PUBMED 7943042
REFERENCE 10 (bases 1 to 14731)
AUTHORS Gu J, Ren K, Dubner R and Iadarola MJ.
TITLE Cloning of a DNA binding protein that is a tyrosine kinase substrate and recognizes an upstream initiator-like sequence in the promoter of the preprodynorphin gene
JOURNAL Brain Res Mol Brain Res 24 (1-4), 77-88 (1994)
PUBMED 7968380
COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The reference sequence was derived from DQ097177.1, BX323845.7, AY772009.1, AC231658.3, AB002310.3 and R60532.1.
This sequence is a reference standard in the RefSeqGene project.
On Nov 22, 2018 this sequence version replaced NM_031407.6.

Summary: This gene encodes a protein containing a C-terminal HECT (E6AP type E3 ubiquitin protein ligase) domain that functions as an E3 ubiquitin ligase. The encoded protein is required for the ubiquitination and subsequent degradation of the anti-apoptotic protein Mcl1 (myeloid cell leukemia sequence 1 (BCL2-related)). This protein also ubiquitinates the p53 tumor suppressor, core histones, and DNA polymerase beta. Mutations in this gene are associated with Turner type X-linked syndromic cognitive

disability. [provided by RefSeq, Aug 2013].

Publication Note: This RefSeq record includes a subset of the publications that are available for this gene. Please see the Gene record to access additional publications.

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YIVFEGEEGQDAGGLLREWYMIISREMFNPMYALFRTSPGDRVTYTINPSSHCNPNHL
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KQLAAFLEGFYEIIPKRLISIFTEQELELLISGLPTIDIDDLKSNTEYHKYQSNSIQI
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MRXST; MULE; URE-B1; UREB1"
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ECO:0000244|PubMed:20068231, ECO:0000244|PubMed:21406692,
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phosphorylation site"

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/note="Phosphothreonine.
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phosphorylation site"
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/note="Phosphotyrosine.
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