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A Look at Gene Control: Tracking the CCND1 Gene

Bryan Anders
Western Kentucky University, bryan.anders970@topper.wku.edu

A LOOK AT GENE CONTROL: TRACKING THE CCND1 GENE

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By

Bryan J. Anders

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CE/T Committee:

Dr. Chandrakanth Emani, Chair

Dr. Nilesh Sharma

Ms. Cheryl Kirby-Stokes

ABSTRACT

Cancer occurs when the cell does not properly control its own cell cycle. It then replicates in an out of control fashion leading to the death of various organs and then the demise of the organism as a whole. As it seems to have always been a problem for cell-based life, certain safeguards against cancer have been evolved over time. One such method comes in the form of prevention via cyclin proteins, which are encoded from cyclin genes. The gene that is the focus of this research is the CCND1, or cyclin D1, gene that controls the progression through various parts of the cell cycle.

During the course of research, a portion of the human variant of the protein is ran through a database containing all known species that carry a similar gene. After filtering for differences, the species were compiled into an ancestry chart. This research could point to a deeper understanding of gene regulation and expression.

I dedicate this thesis to the Bryan Anders of the future. May this be just a brick laid in the path your success.

ACKNOWLEDGMENTS

I would like to thank my readers Dr. Chandrakanth Emani, Dr. Nilesh Sharma and Ms. Cheryl Kirby-Stokes. I have a very deep respect for educators who take time out of their summer schedule to help students. In particular, I would also like to thank Dr. Emani for his help in my research. I would like to thank the Office of Scholar Development for their help in various scholarships, as well as the staff at the Mahurin Honors College for their help in this process.

VITA

EDUCATION

Western Kentucky University, Bowling Green, KY — May 2020
B.S. in Biology – Mahurin Honors College Graduate
Honors Capstone: *A Look at Gene Control: Tracking the CCND1 Gene*

Bowling Green High School — May 2009

PROFESSIONAL EXPERIENCE

The Home Depot — Sept. 2014-Present
Retail Associate

AWARDS & HONORS

Gilman Scholar to Japan, Summer 2017

PROFESSIONAL MEMBERSHIPS

Beta Beta Beta (BBB)

INTERNATIONAL EXPERIENCE

Nicaragua — Aug. 2016
Global Brigades
Japan — June 2017
KIIS Japan
Belize, Guatemala — May 2018
CCSA Study Abroad

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PROJECT OVERVIEW

The goal of this project is to observe how various extracts from thyme (*Thymus vulgaris)*, primarily thymol and carvacrol, affects various forms of cancerous cells. These phenolic compounds have been associated with biocidal properties, which thyme exhibits, and are known as apoptotic regulators, arresting unregulated cell proliferation (Sobral, 2014). In this project, we will culture four different cancer cell lines (pancreatic, colon, breast, lung) to test the various extracts that thyme is able to produce. Each of these extracts have exhibited the ability to induce apoptosis in previous research (Fan K, 2015), and we hope to build on that research. We will primarily be looking at the genes responsible for transcribing proteins responsible for apoptosis (programmed cell death), such as BAX and FAS. By targeting these apoptotic regulators, we hope to decipher the action of the compounds found in thyme that will lead to the discovery of molecular elements in cancer prevention. We hope this will warrant further research into these phenolic components.

Four different cancer cell cultures will be grown in culture plates (breast, pancreatic, colon, and lung). After allowing them to grow for 48 hours, we will add the thyme extracts to the wells. We will set up different time frames to add the extracts to the wells in intervals of 24, 48, and 72 hours. This will allow us to obtain the cell cultures at different stages of cell cycle arrest and growth. We will also have the solvent dimethyl sulfide (DMSO) and the reaction buffer phosphate-buffered saline (PBS) alongside the

cells that have been treated with the extract to serve as controls. We will, then, harvest the cultured cells and extract the RNA that is being transcribed to synthesize cDNA. This will be a template for PCR amplification of the BAX and FAS genes. Finally, we will look at the results of the PCR amplifications to see if there is a higher, lower, or normal expression of each gene in the absence and presence of thymol and carvacrol. This will allow us to conclude if these compounds found in thyme are, indeed, effective against unregulated cell proliferation and warrant further scientific study.

After completing the PCR screenings, we will begin to consolidate the data from multiple runs with different DNA primers. By observing this data, we hope to see substantial increase in the production of one of the genes being tested. The results will show us that an increase in the transcription of these proteins help signal the damaged (cancerous) cells to undergo apoptosis via the intrinsic (BAX) or extrinsic (FAS) pathway. This will help us understand how we can use the thyme extracts as a potential alternative and/or complementary and integrative method of cancer treatment.

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CYCLIN D1 EXPLANATION

Cyclin D1 is a protein encoded by the CCND1 gene on the 11^{th} chromosome and belongs to the cyclin family. This gene is involved with regulation of the cell cycle, particularly the G1/S transition stage. It has also been shown to have a sustentative role in cancer and tumor suppression through its involvement with the tumor suppressor retinoblastoma (Rb). When cyclin D1 is observed to be noticeably damaged or mutated, there seems to be a strong correlation between its absence and a sharp rise in the occurrence of several diseases (Malacards, 2020). Cancer pathways have been observed when cyclin D1 has been amplified or overly expressed. In this report, I will explain cyclin D1's origin, class, function, and how its mutation (or lack of function) has a very probable chance of developing diseases such as Von Hippel-Lindau syndrome or myeloma.

Cyclins are a group of vital cell cycle regulators and occur in various types. They are generally grouped into one of four categories that represent stages in the cell cycle: G_1, G_1/S, S, and M. These categories correspond to the point in the cell cycle at which the protein most heavily promotes the changes they are designed to oversee. The proteins stay at low levels before their respective cell cycle stage, during which their amount will increase (Kahn Academy, 2020). The category most interesting to us is the G_1 cyclins, since cyclin D1 is a type of G_1 cyclin. The portion of the G_1 cycle that Cyclin D1 is active

is quite early on due its relationship to various pathways that kinases set off. Once synthesized, it will have a short half-life due to being regulated by ubiquitination (a process involving a regulation protein named ubiquitin) and proteasomal degradation (Khan Academy, 2020).

Cyclins perform their functions in a CDK, or a cyclin-dependent kinase. To put it simply, a kinase is a type of enzyme that phosphorylates, or attaches phosphate groups to, specific target proteins. These phosphate groups can make a protein activate its function or reduce it. This means that, when they are on their own, these subunits are basically inert and harmless. When a CDK meets with its particular cyclin protein, it not only achieves its full functionality, but will also direct itself towards activating CDK combinations for later stages in the cell's life cycle (Malumbres, 2014). This makes sense since CDK levels will stay mostly the same throughout the cell cycles where they mostly have a higher chance of interactions with their namesake cyclin proteins during their main phase of activity (Khan Academy, 2020). There are other proteins that work together with cyclin D1, such as the aforementioned ubiquitin, retinoblastoma (RB) protein—a type of pocket protein that aids in cell cycle regulation—and other types of complexes such as CDK inhibitors, which halt the cell cycle when DNA is compromised (Du et al., 2013). These processes of cell cycle regulation occur all throughout the eukaryotic kingdoms with no known exceptions.

Cancer refers to a condition when cells do not obey the correct checkpoints in their respective cell cycles and replicate uncontrollably. This state can be induced by a lack of cell regulators, like cyclin D1, or an overabundance of checkpoints. Cancer cells exhibit abnormal behavior, commonly not needing the body and its various signals to

replicate in a culture. They also have the ability to use certain biochemical pathways and trick neighboring cells into making growth factors, accelerating their rate of replication. They can also commit metastasis and make new blood vessels which spread throughout the body and invade other tissues (Khan Academy, 2020).

Von Hippel-Lindau syndrome is a hereditary condition that is characterized by the growth of tumors (which are not always cancerous) in multiple organs. Regardless of their cancer status, these tumors can cause life-threatening complications. They can appear in the eyes (causing blindness), central nervous system (headaches and loss of nerve functions), and the inner ear tract (hearing and balance loss). In order to combat this condition, doctors have relied on cyclin D1 repair, as well as stimulation, to restore certain checkpoints within the cell cycle to proper function (Malacards, 2020).

Multiple myeloma is a type of cancer that affects blood plasma production. When cyclin D1 development is impaired, the body responds by increasing the white blood cells, making it the majority of bone marrow cells produced. These tumors make bones brittle and can lead to an excess of calcium in the blood, leading to hypercalcemia. White blood cells produce proteins that inhibit the growth of red blood cells, which can cause people to become anemic (Malacards, 2020).

The cancers that originate from an amount of overexpression, or too much phosphorylation of the protein, seem to be rarer than cyclin D1's mutations, with the denaturation of this protein being rarer still. Some studies show that denaturation happens at around a 2% rate for most cancers and seems to stem from a random switch at codons, particularly codon 286 (Xu & Lin, 2018). Another study, which analyzed data from hundreds of studies, concluded that CCND1's rate of overexpression is approximately

4%, with CCND1 mutation occurring in 0.5% of the studied cases and theorized that the mutation would be predominately found in tumors of origin. Most defects in cyclin D1 seems to be in the c-terminus of the protein (Xu & Lin, 2018). This, in turn, causes the CDK 4/6 to be more active throughout all of the cell cycle, making tumorigenesis and cell proliferations more likely.

In regard to endometrial cancer, c-terminal mutations involving Thr286 and Pro287 appear to be a driving force in increasing nuclear accumulation of cyclin D1, gain-of-function, and cellular transformation (Xu & Lin, 2018). Although there is no FDA-official cure for cyclin D1 defective cancers, there is some hope. There has been some headway made in cures involving CDK 4/6 inhibition, as well as preventative CCND1 gene therapy (Sobral et al., 2014).

MY CONTRIBUTION

The purpose of this study is to study the cyclin D1 (CCND1) gene, which is a vital part of cell cycle regulation and has been shown to be a tumor suppressor. The goal of this study is to gain an understanding of CCND1's evolutionary history across species.

Using PSI-BLAST software, the gene sequence from humans was compared with homologous sequences from other species; the information drawn from the comparison was used to create a neighbor-joining phylogenetic tree (see Figure 1). The big-headed turtle (*Platysternon megacephalum*) was the most ancient identifiable species—with it being represented as the center dot of the tree—whereas the ring-necked pheasant (*Phasianus colchicus*) is the most recently developed species, as it is the outer-most split that is represented.

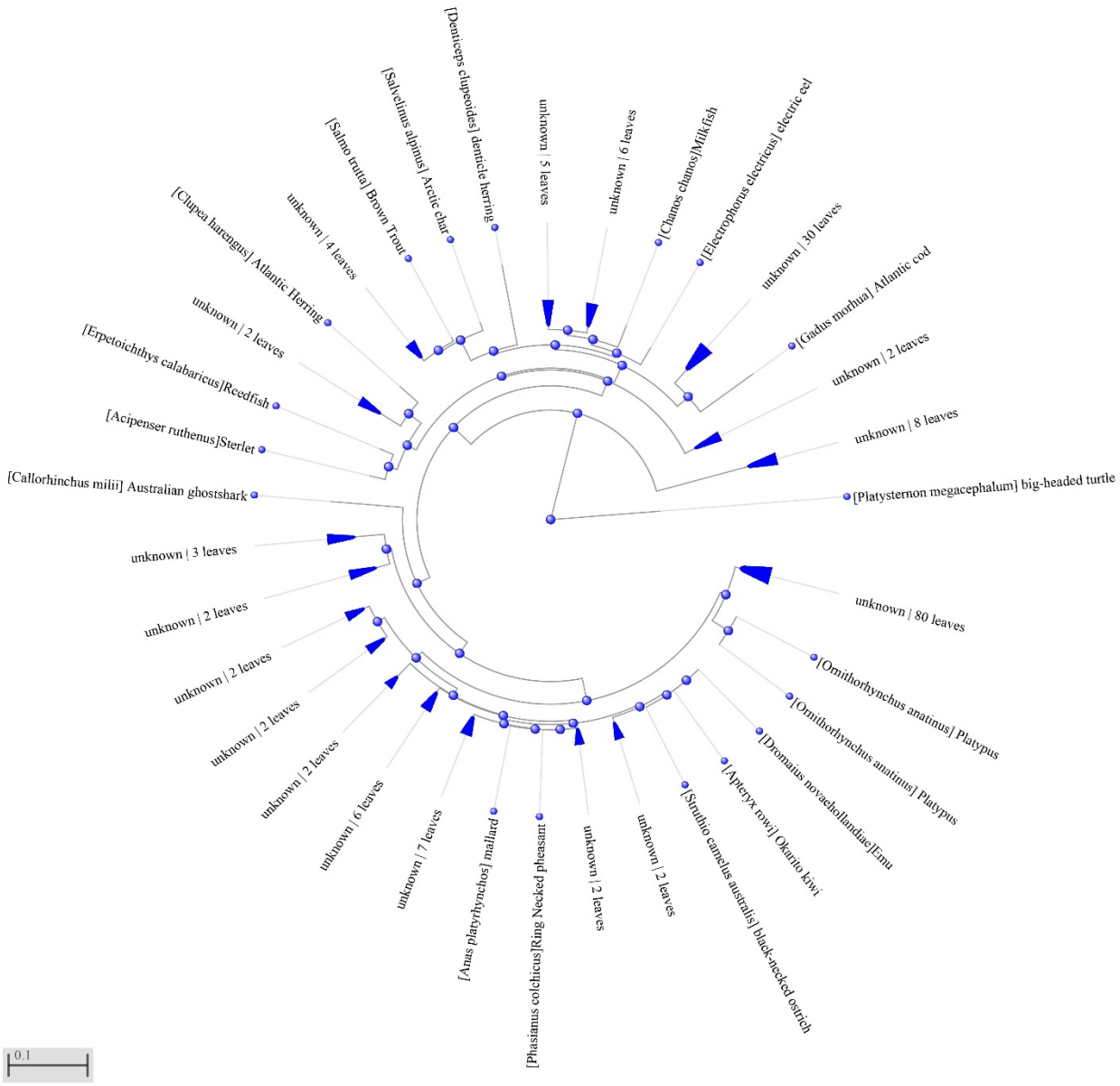

Figure 1. Phylogenetic tree based off of CCND1 sequences found on p.11-77

Sources

Du, Zhaoyang., Tong, Xiaomei. and Xin Ye. Cyclin D1 Promotes Cell Cycle Progression through Enhancing the Kinase Activity of NDR1/2 Independent of Cyclin Dependent Kinase 4. *JBC,* 29 July, 2013. doi: 10.1074/jbc.M113.466433. Accessed 20 April, 2020.

Fan K, Li X, Cao Y, et al. Carvacrol inhibits proliferation and induces apoptosis in human colon cancer cells. *Anticancer Drugs*. 2015;26(8):813-823. doi:10.1097/CAD.0000000000000263

GeneCards. (n.d). *CCND1 Gene Overview*. https://www.genecards.org/cgibin/carddisp.pl?gene= CCND1#protein.

Ikeda, Y., Oda, K., Hiraike-Wada, O., Koso, T., Miyasaka, A., Kashiyama, T., ... & Kawana, K. (2013). Cyclin D1 harboring the T286I mutation promotes oncogenic activation in endometrial cancer. *Oncology Reports*, *30*(2), 584-588.

Khan Academy. (n.d.). *Cancer and the Cell Cycle.* www.khanacademy.org/science/biology/cellular-molecular-biology/stem-cells-and-cancer/a/cancer.

Khan Academy. (n.d.). *Cell Cycle Regulators.* www.khanacademy.org/science/biology/cellular-molecular-biology/stem-cells-and-cancer/a/cell-cycle-regulators.

Malacards. (n.d.). *Myeloma, Multiple (MM).*

https://www.malacards.org/card/myeloma_ multiple.

MalaCards. (n.d.).*Von Hippel-Lindau Syndrome (VHL).*

https://www.malacards.org/card/von_hippel_lindau_syndrome.

Malumbres, M. Cyclin-dependent kinases. *Genome Biol* 15, 122 (2014).

Doi: 10.1186/gb4184

Sobral, M. V., Xavier, A. L., Lima, T. C., & de Sousa, D. P. (2014). Antitumor activity of monoterpenes found in essential oils. *TheScientificWorldJournal*, *2014*, 953451. https://doi.org/10.1155/2014/953451.

UniProt. (n.d.). *UniProtKB – P24385 (CCND1_HUMAN).*

https://www.uniprot.org/uniprot/P24385#function

Xu, Jia, and Douglas I Lin. "Oncogenic c-terminal cyclin D1 (CCND1) mutations are enriched in endometrioid endometrial adenocarcinomas." *PloS one* vol. 13,7 e0199688. 3 Jul. 2018, doi:10.1371/journal.pone.0199688

Yang, Vincent W. *Physiology of the Gastrointestinal Tract.* 6th ed., Academic Press, 2018, London (197-219).

APPENDIX: CCND1 SEQUENCES

>[Homo sapiens] “Human”

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
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AVQGLNLRSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
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VDLACTPTDVRDVDI

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>RXN17639.1 G1 S-specific cyclin-D1 [Labeo rohita]

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>AKH40946.1 cyclin D1 [Cyprinus carpio carpio]

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MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRYLSFEPLKKTRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPNELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEDSKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGNTNAFLSYQCLTHFLSKVIKCDPDCLRACQEQIESLLESSLRQAQQH
NISSETKTVEDEADL

SCTPTDVRDVNI

>XP_005150615.1 G1/S-specific cyclin-D1 [Melopsittacus undulatus]

MEHQLLCCEVETIRRAYHDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILP
YMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDIKF
ISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_030340549.1 G1/S-specific cyclin-D1 [Strigops habroptila]

MEHQLLCCEVETIRRAYHDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILP
YMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDIKF
ISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_007425592.1 G1/S-specific cyclin-D1 [Python bivittatus]

MEHQLLCCEVETIRRAYQDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILP
YMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRYLSFEPIKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPNELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLNKMPVAEDSKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGNTNSFLSYQCLTPFLSKVIKCDPDCLRACQEQIESLLESSLRQAQQH
NISSETKTVEEEADL

SCTPTDVRDVNI

>XP_012958115.1 G1/S-specific cyclin-D1 isoform X2 [Anas platyrhynchos]

MEHQLLCCEVETIRRAYLDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_031449160.1 G1/S-specific cyclin-D1 [Phasianus colchicus]

MEHQLLCCEVETIRRAYLDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_032045136.1 G1/S-specific cyclin-D1 isoform X1 [Aythya fuligula]

MEHQLLCCEVETIRRAYLDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_023851095.1 G1/S-specific cyclin-D1 [Salvelinus alpinus]

MEHQLLCCEVETIRRAYQDANLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIIP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVELTNKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSIRPSDLLQM

ELLTLNKLKWDLASVTPHDFIDHFLSKLPVHQNTKQILRKHAQTFVALCATDVK
FIANPPSMIAAGSVAA

AVQGLYLKSKDGALSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQH
NVSTETKRVDEDVDL

SCTPTDVRDINI

>XP_018619398.1 G1/S-specific cyclin-D1 [Scleropages formosus]

MEHELLCCEAESVRRAYRDGNLLTDRVLQTMLKAEDSYLPSANYFKCVQKEILP
YMRKIVATWMLEVCEE

QKCEEEVFPLAMNYFDRFLSVEPIKKTRLQLLGATCMFLASKMKETIPLTAEKLC
IYTDNSIRPSELLQM

ELLALNKLKWDLASVTPHDFIEHFLTKLPIQKDTKQILRKHAQTFVALCATDIKFI
ACPPSMVAAGSVAA

AVQGLHLKSADSLLSSQSLTDFLSQVIKSDPDCLRSCQEQIESLLESSLRQAHQQQ
HGVSTDTKGVEDEA

DLSCTPTDVRDVNI

>XP_021462691.1 G1/S-specific cyclin-D1 [Oncorhynchus mykiss]

MEHQLLCCEVETIRRAYQDANLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIIP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEPTNKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSIRPSDLLQM

ELLTLNKLKWDLASVTPHDFIDHFLSKLPIHQHTKQILRKHAQTFVALCATDVKFI
ALPPSMIAAGSVAA

AVQGLYLKSKDGALSSQNLTNFLSQVIRSDPDCLKSCQEQIESLLESSLRQAQQH
SVSTETKRVEEDVDL

SCTPTDVRDINI

>XP_026786126.1 G1/S-specific cyclin-D1 [Pangasianodon hypophthalmus]

MEHQLFCCEVDTIRRAYHDANLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEHTKKTRLQLLGAACMFLASKMKETVPLTAEKL
CIYTDNSIRPCELLQM

ELLVLNKLKWDLASVTPHDFIEHFLTKLPIHQSAKQILRKHAQTFVALCATDVNFI
ASPPSMIAAGSVAA

AVQGLYLKGADSSLSSQNLTNYLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQQS
NSTESKRVEEDVDL

SCTPTDVRDINI

>XP_007254687.2 G1/S-specific cyclin-D1 [Astyanax mexicanus]

MEHQLLCCEVDAVRRAYHDTNLLNDRVLQTMLRAEETYLPSPNYFKCVQKEIV
PKMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEPTKKSRLQLLGAACMFLASKMKETVPLTAEKL
CIYTDNSIRPCELLQM

ELLALNKLKWDLASVTPHDFIEHFLTKLQIHQGTKQILRKHAQTFVALCATDVNF
IASPPSMIAAGSVAA

AVQGLYLKNSDSSLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHSI
STETKRVEEDVDL

SCTPTDVRDINI

>XP_020638518.1 G1/S-specific cyclin-D1 [Pogona vitticeps]

MEHQLLCCEVETIRRAYQDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILP
YMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRYLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPNELLQM

ELLLVNKLKWNLAATTPHDFIEHFLNKMPVAEDSKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSKVIKCDPDCLRACQEQIESLLESSLRQAQQH
NISSETKTVEDEADL

SCTPTDVRDVNI

>XP_007068004.1 G1/S-specific cyclin-D1 isoform X1 [Chelonia mydas]

MEHQLLCCEVETIRRAYLDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKNRLQLLGATCMFVASKMKETIPLTAEKLS
IYTDNSIRPDELLQM

ELFLVNKLKWNLAAMTPHDFIEHFLTKMPVAEDTKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGDTNTFLSYQSLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NISSETKTVEDEADL

SCTPTDVRDVNI

>XP_026520527.1 G1/S-specific cyclin-D1 [Notechis scutatus]

MEHQLLCCEVETIRRAYQDANLLNDRVLQTLLKAEETCSPSVSYFKCVQKEILPY
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRYLSFEPIKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAATTPHDFIEHFLNKMPVAEDSKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGNTNSFLSYQCLTPFLSKVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEEEADL

SCTPTDVRDVNI

>XP_008496513.1 G1/S-specific cyclin-D1 [Calypte anna]

MEHQLLCCEVETIRRGYLDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDIKF
ISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NASSETKTVEDEADL

SCTPTDVRDVNI

>KFV88214.1 G1/S-specific cyclin-D1 [Struthio camelus australis]

MEHQLLCCEVETIRRAYLDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKMVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGDTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_025945110.1 G1/S-specific cyclin-D1 [Apteryx rowi]

MEHQLLCCEVETIRRAYLDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKMVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGDTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_025950310.1 G1/S-specific cyclin-D1 [Dromaius novaehollandiae]

MEHQLLCCEVETIRRAYLDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKMVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGDTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_024274408.1 G1/S-specific cyclin-D1-like [Oncorhynchus tshawytscha]

MEHQLLCCEVETIRRAYQDANLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIIP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEPTNKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNYIRPSDLLQM

ELLTLNKLKWDLASVTPHDFIDHFLSKLPIQQHTKQILRKHAQTFVALCATDVKFI
ANPPSMIAAGSVAA

AVQGLYLKSKDGALSSQNLTNFLSQVIRSDPDCLKSCQEQIESLLESSLRQAQQH
SVSAETKRVEEDVDL

SCTPTDVRDINI

>XP_020333222.1 G1/S-specific cyclin-D1 [Oncorhynchus kisutch]

MEHQLLCCEVETIRRAYQDANLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIIP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEPTNKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNYIRPSDLLQM

ELLTLNKLKWDLASVTPHDFIDHFLSKLPIQQHTKQILRKHAQTFVALCATDVKFI
ANPPSMIAAGSVAA

AVQGLYLKSKDGALSSQNLTNFLSQVIRSDPDCLKSCQEQIESLLESSLRQAQQH
SVSTETKRVEEDVDL

SCTPTDVRDINI

>XP_006111531.1 G1/S-specific cyclin-D1 [Pelodiscus sinensis]

MEHQLLCCEVETIRRAYLDTNLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELFLVNKLKWNLAAMTPHDFIEHFLTKMPVAEDTKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGNNHTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NISSETKTVEDEADL

SCTPTDVRDVNI

>NP_990712.1 G1/S-specific cyclin-D1 [Gallus gallus]

MEHQLQCCEVETIRRAYLDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILP
YMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_029494750.1 G1/S-specific cyclin-D1-like [Oncorhynchus nerka]

MEHQLLCCEVETIRRAYLDANLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIIPK
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEPTNKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNYIRPSDLLQM

ELLTLNKLKWDLASVTPHDFIDHFLSKLPIQQHTKQILRKHAQTFVALCATDVKFI
ANPPSMIAAGSVAA

AVQGLYLKSKDGALSSQNLTNFLSQVIRSDPDCLKSCQEQIESLLESSLRQAQQH
SVSTETKRVEEDVDL

SCTPTDVRDINI

>KFP14487.1 G1/S-specific cyclin-D1 [Egretta garzetta]

MEHQLLCCEVETIRRAHLDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDIKF
ISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_021384218.1 G1/S-specific cyclin-D1 [Lonchura striata domestica]

MEHQLLCCEVETIRRAYLDASLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDIKF
ISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_006014750.1 G1/S-specific cyclin-D1 [Alligator sinensis]

MEHQLLCCEVETIRRAYLDANLLNDRVLLAMLKAEETCTPSGFYFKCVQKEILP
YMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAVTPHDFIEHFLTKMPLTEDTKQIIRKHAQTFVALCATDVKF
ISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NISSETKTVEDEADL

SCTPTDVRDVNI

>KYO21884.1 G1/S-specific cyclin-D1 [Alligator mississippiensis]

MEHQLLCCEVETIRRAYLDANLLNDRVLLAMLKAEETCTPSGFYFKCVQKEILP
YMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAVTPHDFIEHFLTKMPLTEDTKQIIRKHAQTFVALCATDVKF
ISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NISSETKTVEDEADL

SCTPTDVRDVNI

>KGL83496.1 G1/S-specific cyclin-D1 [Tinamus guttatus]

MEHQLLCCEVETIRRAHLDANLLNDRVLQTMLKAEETCAPSVSYFKCVQREILP
YMRKMVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGDTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_005491716.1 G1/S-specific cyclin-D1 isoform X1 [Zonotrichia albicollis]

MEHQLLCCEVETIRRAYLDASLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDIKF
ISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
SVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_028812424.1 G1/S-specific cyclin-D1 [Denticeps clupeoides]

MEHQLLCCESETIRRAYQDSNLLNDRVLQTMLKAEESYLPSPNYFKCVQKEILPR
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSIESTKKTMLQLLGATCMFLASKMKGTVPLTAEKL
CVYTDNSIRPCDLLQM

ELMALNKLKWDLASVTAHDFIDYLLSKLQIHPSTKHILHKHAQTFVALCATDVN
FIASPPSMIAAASVAA

AVQGLYIKSTDSALSSQNLTNFFSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHSI
ATETKMVEEDANL

PCTPTDVRDVNI

>KFM01532.1 G1/S-specific cyclin-D1 [Aptenodytes forsteri]

MEHQLLCCEVETIRRAYLDANLLNDRVLQTMLKAEETCSPSVSYFKCVQKEILPY
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYFYRFLSFEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDIKF
ISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_025890450.1 G1/S-specific cyclin-D1 isoform X1 [Nothoprocta perdicaria]

MEHQLLCCEVETIRRAHLDANLLTDRVLQTMLKAEETCAPSVSYFKCVQREILPY
MRKMVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLTKMPLAEDTKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGNTNTFLSYQCLTHFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
NVSSETKTVEDEADL

SCTPTDVRDVNI

>XP_003798339.1 G1/S-specific cyclin-D1 [Otolemur garnettii]

MEHQLLCCEVETIRRAYPDGNLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLGSPNQFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
LDPKAAEEEEEEEEE

VDLACTPTDVRDVDI

>NP_001265375.1 G1/S-specific cyclin-D1 [Macaca mulatta]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLGSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
MDPKAAEEEEEEEEE

VDLACTPTDVRDVDI

>XP_003909472.1 G1/S-specific cyclin-D1 [Papio anubis]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLGSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
MDPKAAEEEEEEEEE

VDLACTPTDVRDVDI

>XP_011719475.1 G1/S-specific cyclin-D1 [Macaca nemestrina]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLGSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
MDPKAAEEEEEEEEE

VDLACTPTDVRDVDI

>XP_025211085.1 G1/S-specific cyclin-D1 isoform X2 [Theropithecus gelada]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLGSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
MDPKAAEEEEEEEEE

VDLACTPTDVRDVDI

>XP_006171301.1 G1/S-specific cyclin-D1 [Tupaia chinensis]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKVVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLGSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
LDPKATEEEEEEEEE

VDLACTPTDVRDVDI

>XP_016776923.1 G1/S-specific cyclin-D1 [Pan troglodytes]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLRSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
MDPKAAEEEEEEEEE

VDLACTPTDVRDVDI

>XP_030871781.1 G1/S-specific cyclin-D1 [Gorilla gorilla gorilla]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLRSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
MDPKAAEEEEEEEEE

VDLACTPTDVRDVDI

>XP_030773261.1 G1/S-specific cyclin-D1 [Rhinopithecus roxellana]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIQPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLGSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
MDPKAAEEEEEEEEE

VDLACTPTDVRDVDI

>XP_012613124.1 G1/S-specific cyclin-D1 [Microcebus murinus]

MEHQLLCCEVEAIRRAYPDGNLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLGSPNPFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
LDPKATEEEEEEEEE

VDLACTPTDVRDVDI

>XP_003278068.1 G1/S-specific cyclin-D1 [Nomascus leucogenys]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEDVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLRSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
MDPKAAEEEEEEEEE

VDLACTPTDVRDVDI

>XP_032009642.1 G1/S-specific cyclin-D1 [Hylobates moloch]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEDVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLRSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
MDPKAAEEEEEEEEE

VDLACTPTDVRDVDI

>XP_023041951.2 G1/S-specific cyclin-D1 [Piliocolobus tephrosceles]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIQPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLGSPNNFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
MDPKAAEEEEEEEEE

ADLACTPTDVRDVDI

>AGS58209.1 G1/S-specific cyclin-D1 [Clarias batrachus]

MEHQLFCCEVDTTRRAYHDANLLNDRVLKTMLKAEENYLPSPNYFKCVQKEIV
PRMRKIVSTWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVDQTKKTRLQLLGAACMFLASKMKETVPLTAEK
LCIYTDNSIRPCELLQM

ELLVLNKLKWDLASVTPHDFIEHFLTKLPIHQSTKQILRKHAQTFVALCATDVNFI
ASPPSMIAAGSVVA

AVQGLYLKSADVSLSSQNLTNYLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQQS
ISTESKRVEEDADL

SCTPTDVRDINI

>EHB12330.1 G1/S-specific cyclin-D1 [Heterocephalus glaber]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSPNNFLTCYRLTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
LDPKATEEEEEEEEE

VDLACTPTDVRDVDI

>XP_003468369.1 G1/S-specific cyclin-D1 [Cavia porcellus]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSPNNFLTCYRLTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
LDPKAAEEEEEEEEE

ADLACTPTDVRDVDI

>AFK11583.1 cyclin D1 [Callorhinchus milii]

MEHQLLCYEVETIRRAYKDPNLLNDRVLQTMLRTEENCLPSLSYFKCVQKEILPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRYLSIELTKKTHLQLLGATCMFLASKMKETIPLTAEKLC
IYTDNSIKPEELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLPVPKDSKQIIRKHAQTFVALCATDVKFI
SNPPSMIAAGSMAA

AVHGLHLGNSNSFLSYQPLTDFLSQIIKCDPDCLRACQEQIESLLETSLRQVQHNSI
PSETKTVEDELDL

SCTPTDVRDVNL

>NP_001124773.1 G1/S-specific cyclin-D1 [Pongo abelii]

MEHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAALTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVKF
ISNPPSMVAAGSVVA

AVQGLNLRSPNSFLSYYRLTRFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
MDPKAAEEEEEEEEE

VDLACTPTDVRDVDI

>AWP02073.1 G1/S-specific cyclin-D1 [Scophthalmus maximus]

MEDQLLCCEVDSVRRAHQDVNLLTDRVLRTMLRAEESYLPSPNYFKCVQREIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATGKTRLQLLGAACMFLASKMKETVPLTAEKL
CIYTDNSIRPAELLHM

ELLVLSKLKWDLASVTPHDFIEHFLSKLDIHPSAKQVLRKHAQTFVALCATDVNF
IASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTHFLSQIIRSDPDCLRSCQEQIESLLESSLRQAQQQQ
HGSSTETKRMDEDV

DLSCTPTDVRDINI

>XP_028373238.1 G1/S-specific cyclin-D1 [Phyllostomus discolor]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEIVP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPMKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAATTPHDFIEHFLSKMPVTEENKQVIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVS

AVQGLHLGSCGSFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLEASLRQAQQQ
SLDPKAAEEEEEEEE

VDLACTPTDVRDVDI

>XP_012308408.1 G1/S-specific cyclin-D1 [Aotus nancymaae]

MEHQLLCCEVEAIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIQPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLGSPNHFLSYYRLTCFLSRVIKCDPDCLRACQEQIEGLLESSLRQAQQN
QDPKASEEEEEEEE

VDLACTPTDVRDVDI

>XP_032138424.1 G1/S-specific cyclin-D1 [Sapajus apella]

MEHQLLCCEVEAIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEVLP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIQPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLNLGSPNHFLSYYRLTCFLSRVIKCDPDCLRACQEQIEGLLESSLRQAQQN
QDPKASEEEEEEEEE

VDLACTPTDVRDVDI

>KAA0723745.1 G1/S-specific cyclin-D1 [Triplophysa tibetana]

MEHQLFCCEVDTIKRAYHDTNLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEPTRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSIRPSELLQM

ELLALNKLKWDLASVTPHDFIEHFLAKLPIHQSSKQILRKHAQTFVALCATDVNFI
ACPPSMIAAGSVVA

AVQGLYLKSSDSSLSSQNLTHFLSKVIRSDPDCLRSCQEQIESLLESSLRQAQQHSI
STETKRVEEDEDL

SCTPTDVRDINI

>XP_011285404.1 G1/S-specific cyclin-D1 [Felis catus]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELVLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVLA

AVQGLPLGSSNSFLSYPRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQS
LDPKAVAEEEEEEE

ADLACTPTDVRDVNI

>XP_019121253.1 G1/S-specific cyclin-D1 [Larimichthys crocea]

MIKQSSSSSSGQLVVNVPHSVGDTLRFLLNVCRVKQKKESERTKRGLTLFTHYTL
LLFPPVTEAASYSLT

SSQKVGTLLSATCGADLRLLLEAKSKPVLLFASTVARRKPLKQTSVSVHGRGRS
MEPQLLCCEGDRPAIR

RAYRDSNLLTDRVLHTLLRAEDKYLPAPNYFKCVQREVVPYMRRIVATWMLEV
CEEQKCEEEVFLLAMNY

MDRFLSVEHTKKSHLQLLGATCMFLASKLKETIPLTAEKLCIYTDNSVAPSQLLQ
MELLVLNKLKWDLAS

VTPLDFIDHFLSQLPVRTENRSILRKHAQTFVALCATDVKFIASPPSMVAAGSMV
AAVEGLQMRMVGNAM

MSQKLTEQLAQTIRSDPDCLRACQEQIESLLETSLRQAQQPNNSVTIEETKNISDG
QDLSTTPTDVRDVN

I

>XP_030189291.1 G1/S-specific cyclin-D1 [Lynx canadensis]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELVLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVLA

AVQGLPLGSSNSFLSYPRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQS
LDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>VFV37954.1 g1 s-specific cyclin-d1 [Lynx pardinus]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELVLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVLA

AVQGLPLGSSNSFLSYPRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQS
LDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>XP_023682923.1 G1/S-specific cyclin-D1 [Paramormyrops kingsleyae]

MEHQLLCCEVESIRRAYQDANLLNDRVLQTMLKAEDNYLPSANYFKCVQKDIV
PYMRRIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEPTKKSRLQLLGATCMFLASKMKETIPLTAEKLC
IYTDNSIRPSELLQM

ELLTLNKLKWDLASVTPHDFIEHFLSKLPIHQETKQILRKHAQTFVALCATDVKFI
ASPPSMVAAGSVAA

AVQGLHLKSTDSILSSQNLTDFLSQVIKSDPDCLRACQEQIESLLESSLRQAQQQS
HGASTDTKAAGDEA

DLSCTPTDVRDVNI

>TKS74060.1 G1/S-specific cyclin-D1 [Collichthys lucidus]

MRTLFTHFTLLLFSPVTEAAPYSLTSSQKVGTLLSATCGADHRLLLEAKSKPVLLF
ASTVARRKSLKQTS

VSVHGRGGSMEPQLLCCEGDRPAIRRAYRDSNLLTDRVLHTLLRAEDKYLPASN
YFKCVQREVVPYMRRI

VATWMLEVCEEQKCEEEVFLLAMNYMDRFLSVEHTKKNHLQLLGATCMFLAS
KLKETIPLTAEKLCIYTD

NSVAPSQLLQMELLVLNKLKWDLASVTPLDFIDHFLSQLPVRTENRSILRKHAQT
FVALCATDVKFIASP

PSMVAAGSMVAAVQGLQMRMVGNAMMSQKLTEHLAQTIRSDPDCLRACQEQI
ESLLETSLRQAQQPNNSV

TMETKNISEGQDLSTTPTDVRDVNI

>XP_030282858.1 G1/S-specific cyclin-D1-like [Sparus aurata]

MEPQLMCCEGNRPAIRRAYRDSNLLTDRVLHALLRAEDKYLPASNYFKCVQREI
APYMRRIVATWMLEVC

EEQKCEEEVFPLAMNYMDRFLSVEPTKKNHLQLLGAACMFLASKLKETIPLTAE
KLCIYTDNSVRPTQLL

QMELLVLNKLKWDLASVTPLDFIDHFLSQLPIRRENRPILRKHAQTFVALCATDV
KFIASPPSMVAAGSM

VAAVEGLQMRMVGNAMMSQKLTEQLAQTIKSDPDCLRACQEQIESLLETSLRQ
AQQQQHSVTMEVKNISE

GQDLSTTPTDVRDVNI

>XP_026901480.1 G1/S-specific cyclin-D1 [Acinonyx jubatus]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELVLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVLA

AVQGLPLGSSNSVLSCPRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQS
LDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>XP_028258169.1 G1/S-specific cyclin-D1 [Parambassis ranga]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVHPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLNIYPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDTSLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHS
CTTETKHVDEDVDL

SCTPTDVRDINI

>XP_030056597.1 G1/S-specific cyclin-D1 [Microcaecilia unicolor]

MEHQLLCCEVETVRRASLDCNLLNDRVVEIMMKAEERYSASVSYFKCVQKEILP
CMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEPLKKSRLQLLGATCMLVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELFILNKLKWDLASVTPHDFIEHFLRKMPLSLDTKQIIRKHAQTFVALCATDMKFI
SNPPSMIAAGSVAA

AVQGLHLGNVHSFLSCQRLTRFLSQVIKGDPDCLRACQEQIESLLESSLRQAQQH
SISSETKTVEDEADL

SCTPTDVRDVNI

>XP_022600177.1 G1/S-specific cyclin-D1 [Seriola dumerili]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEETYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKIYPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQLS
SSTETKRVDEDVDL

SCTPTDVRDINI

>XP_023281318.1 G1/S-specific cyclin-D1 [Seriola lalandi dorsalis]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEETYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKIYPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQLS
SSTETKRVDEDVDL

SCTPTDVRDINI

>TSL68257.1 G1/S-specific cyclin-D1 [Bagarius yarrelli]

MEHQLFCCEVDTIRRAYHDANLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVERTKKTRLQLLGAACMFLASKMKETVPLTAEKL
CIYTDNSIRPCELLQV

ELLVLNKLKWDLASVTPHDFIEHFLTKLPIHQSAKQILRKHAQTFVALCATDVNFI
ASPPSMIAAGSVAA

AVQGLYLKGADSALSSQNLTNYLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQQ
SISTESKRVEEDVDL

SCTPTDVRDINI

>XP_029282202.1 G1/S-specific cyclin-D1 [Cottoperca gobio]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKICPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHS
NTTETKHVDEDVDL

SCTPTDVRDINI

>XP_031142801.1 G1/S-specific cyclin-D1 [Sander lucioperca]

MGDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKIYPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHG
NTTESKHVDEDVDL

SCTPTDVRDINI

>XP_027711897.1 G1/S-specific cyclin-D1 [Vombatus ursinus]

MEHQLLCCEVETIRRAYLDANLLNDRALQTMLKAEETCSPSVSYFKCVQKDILP
YMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDHSVRPEELLHM

ELLLVNKLKWHLAAMTPHDFIEHFLSKMPVLEENKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGSTNSFLTYQRLTRFLSQVIKCDPDCLRACQEQIEALLESSLRQAQQH
SSSSVPKNMEEEGDL

SYTPTDVRDVNI

>XP_031797127.1 G1/S-specific cyclin-D1 [Sarcophilus harrisii]

MEHQLLCCEVETIRRAYLDANLLNDRALQTMLKAEETCSPSVSYFKCVQKDILP
YMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDHSVRPEELLHM

ELLLVNKLKWHLAAMTPHDFIEHFLSKMPVLEENKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGSTNSFLTYQRLTRFLSQVIKCDPDCLRACQEQIEALLESSLRQAQQH
SSSSVPKNMEEEGDL

SYTPTDVRDVNI

>XP_020487169.1 G1/S-specific cyclin-D1 [Labrus bergylta]

MEDQLLCCEVDSIRRAYQDVNLLTDRVLHTLLRAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLEIHPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQNASLSSQNLTNFLSQVIRSDPDCLRACQEQIESLLESSLRQAQQH
AGSTESKRVDEDVDL

SCTPTDVRDINI

>XP_026868340.1 G1/S-specific cyclin-D1 [Electrophorus electricus]

MEHQLFCCEVDTIRRAYQDANLLNDRVLQTMLKTEENYLPSPNYFKCVQKEILP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEPTKKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSIRPCELLQM

ELLALNKLKWDLAAVTPHDFIEHFLTKLPIHQSTKQILRKHAQTFVALCATDVNF
IANPPSMVAAGSVAA

AVQGLYLKSSNGSLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLELSLRQAQQHS
ISTETKRVEEDADL

SCTPTDVRDVNI

>XP_020826506.1 G1/S-specific cyclin-D1 [Phascolarctos cinereus]

MEHQLLCCEVETIRRAYLDANLLNDRALQTMLKAEETCSPSVSYFKCVQKDILP
YMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDHSVRPEELLHM

ELLLVNKLKWHLAAMTPHDFIEHFLSKMPVLEENKQIIRKHAQTFVALCATDVK
FISNPPSMIAAGSVVA

AVQGLHLGSTNPFLTYQRLTRFLSQVIKCDPDCLRACQEQIEALLESSLRQAQQH
SSSSVPKNMEEEGDL

SYTPTDVRDVNI

>NP_001080245.1 G1/S-specific cyclin-D1 [Xenopus laevis]

MELLCCEVDTIRRAHLDRNLITDRVLQTMLKAEETSCPSMSYFKCVQKEILPNMR
KIVATWMLEVCEEQK

CEEEVFPLAMNYLDRFLSVEPLRKSWLQLLGATCMFLASKMKETIPLTAEKLCIY
TDNSIRPDELLIMEL

RVLNKLKWDLASVTPHDFIEHFLNKMPLTEDTKQIIRKHAQTFVALCATDVNFIS
NPPSMIAAGSVAAAV

QGLNLGNADSVFSTQRLTLFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQQHN
ASSDTKNMVDEVDIS

CTPTDVRDVNI

>XP_004383690.1 G1/S-specific cyclin-D1 [Trichechus manatus latirostris]

MEHQLLCCEVETIRRAYPDANLLNDRVLQAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAQENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGGTNGFLSYHRLTRFLSKVIKCDPDCLRACQEQIEALLESSLRQAQQQ
SLDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>XP_029438366.1 G1/S-specific cyclin-D1 [Rhinatrema bivittatum]

MEPQLLCCEVETVRRGYLDGNLLTERVLQKMLRAEENYAPSVSYFKCVQREILP
CMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLTVEPLKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSVRAGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLRKMPLSQDTKQIIRKHAQTFVALCATDVKF
ISNPPSMIAAGSVAA

AVQGLHLGNVNSLLSCQRLMCFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQH
ISSSESKTVEHEAGL

SCTPADLSCTPTDVRDVNI

>XP_023510387.1 G1/S-specific cyclin-D1 [Equus caballus]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEDNKQVIRKHAQTFVALCATDV
KFISNPPSMVAAGSVVA

AVQGLHLGSTNSFLSYHRLTRFLSKVIKCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>NP_001039738.1 G1/S-specific cyclin-D1 [Bos taurus]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLHM

ELVLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVAA

AAQGLHLGSANGFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>XP_006072419.1 G1/S-specific cyclin-D1 [Bubalus bubalis]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLHM

ELVLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVAA

AAQGLHLGSANGFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>XP_027388719.1 G1/S-specific cyclin-D1 [Bos indicus x Bos taurus]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLHM

ELVLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVAA

AAQGLHLGSANGFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>ASR74718.1 cyclin D1 [Bos grunniens]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLHM

ELVLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVAA

AAQGLHLGSANGFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>OWK17577.1 CCND1 [Cervus elaphus hippelaphus]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLHM

ELVLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSANGFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>XP_006210791.1 G1/S-specific cyclin-D1 [Vicugna pacos]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGGSSSFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>XP_003419581.1 G1/S-specific cyclin-D1 [Loxodonta africana]

MEHQLLCCEVETIRRAYPDANLLNDRVLQAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLHM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAQENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSTSGFLSYHRLTRFLSKVIKCDPDCLRACQEQIEALLESSLRQAQQQ
SLDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>XP_008853184.1 G1/S-specific cyclin-D1 [Nannospalax galili]

MEHQLLCCEVESIRRAYPDSNLLTDRVLRAMLKAEETCAPSVSYFKCVQKEIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
VYTDNSIRPEELLQM

ELILVNKLKWNLAAMTPHDFIEHFLSKMPEVDENKQIIRKHAQTFVALCATDVKF
ISNPPSMVAAGSVVA

ALQGLHLGSPNDFLSCYRTTHFLSRVIKCDPDCLRACQEQIETLLESSLRQAQQN
QDPKATEEEEEEEEE

EAGLACTPTDVRDVHI

>XP_029954861.1 G1/S-specific cyclin-D1 [Salarias fasciatus]

MEEQLLCCEQDSVRRAYQDANLLNERVLRTMLRAEESYLPAPNYFKCVQREISA
RMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKSRLQLLGAACMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKIHPSSKLILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSHDVSLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHS
GAPEAKHVDEDVDL

SCTPTDVRDINI

>XP_020756016.1 G1/S-specific cyclin-D1 [Odocoileus virginianus texanus]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLHM

ELVLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGGANGFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEEEAEEE

VDLACTPTDVRDVNI

>XP_027815729.1 G1/S-specific cyclin-D1 [Ovis aries]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CVYTDNSIRPDELLHM

ELVLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AAQGLHLGSANGFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>XP_020938345.1 G1/S-specific cyclin-D1 [Sus scrofa]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCSPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSSNSFLSYHRLTRFLSRVIRCDPDCLRACQEQIEALLESSLRQAQQQT
LDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>XP_029983660.1 G1/S-specific cyclin-D1 [Sphaeramia orbicularis]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKDIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKIYPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQYS
GTTETKRVDEDVDL

SCTPTDVRDINI

>XP_008309773.1 G1/S-specific cyclin-D1 [Cynoglossus semilaevis]

MEPQLLCCEGDRPARAYRDSNLLTDRVLGALLRAEENYLPASNYFKCVQREIAP
YMRRIAATWVLEVCEE

QRCEEEVFPLAMNYMDRFLSVEPVKKNHLQLLGAACMFLASKLKETIPLTAEKL
CIYTDNSITTSQLLQM

ELLVLNKLKWDLASVTPLDFIDHFLSRLPVRRECRSILRKHAQTFVALCATDTNFI
ASPPSMVAAGSMVA

AVEGLQLKMLGNTSMSQKLTEQLAQTIRSDPDCLRACQEQIESLLETSLGQARQQ
HTVTMETKNSGEGQD

LSSTPTDVRDVNI

>XP_030581042.1 G1/S-specific cyclin-D1 [Archocentrus centrarchus]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVLPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLDIHPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHN
GTTETKRVDEDVDL

SCTPTDVRDINI

>XP_028429827.1 G1/S-specific cyclin-D1 [Perca flavescens]

MGDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKIYPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHG
NTTESKHVDEDVDL

SCTPTDVRDINI

>XP_004575644.1 G1/S-specific cyclin-D1 [Maylandia zebra]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVLPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKIYPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVAA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHN
GTTETKRVDEDADL

SCTPTDVRDINI

>XP_029354745.1 G1/S-specific cyclin-D1 [Echeneis naucrates]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEETYLPSPNYFKCVQKDIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKVHPSTKQILRKHAQTFVALCATDVNF
IASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHS
STTETKRMEEDVDL

SSTPTDVRDINI

>XP_023989054.1 G1/S-specific cyclin-D1 [Physeter catodon]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELVLVNKLKWNLAATTPHDFIEHFLSKMPVVEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSANSFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEEEEEEE

VDLACTPTDVRDVDI

>XP_031733024.1 G1/S-specific cyclin-D1 [Anarrhichthys ocellatus]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKIYPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHS
STTESKHVDEDVDL

SCTPTDVRDINI

>XP_025307544.1 G1/S-specific cyclin-D1 [Canis lupus dingo]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSSNSFLSYHRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQ
SLDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>XP_025860005.1 G1/S-specific cyclin-D1 [Vulpes vulpes]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSSNSFLSYHRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQ
SLDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>XP_026149498.1 G1/S-specific cyclin-D1 [Mastacembelus armatus]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATKKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTSHDFIEHFLSKLKIHPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQLC
STTETKRVDEDVDL

SCTPTDVRDINI

>XP_021541269.1 G1/S-specific cyclin-D1 [Neomonachus schauinslandi]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENRQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSSNSFLSYHRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQ
SLDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>XP_031611661.1 G1/S-specific cyclin-D1 [Oreochromis aureus]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVLPEELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKIYPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVAA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHN
GTTETKQVDEDADL

SCTPTDVRDINI

>XP_026338757.1 G1/S-specific cyclin-D1 [Ursus arctos horribilis]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEESRQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSSNSFLSYHRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQ
SLDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>XP_029904490.1 G1/S-specific cyclin-D1 [Myripristis murdjan]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKLVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVRPEELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLTIHPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDTSLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHN
STTETKRLDEDVDL

SCTPTDVRDINI

>XP_022070582.1 G1/S-specific cyclin-D1 [Acanthochromis polyacanthus]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVETTRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLSKLKWDLASVTPHDFIEHFLSKLKIYPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHS
STTETKRVDEDVDL

SCTPTDVRDINI

>XP_026234552.1 G1/S-specific cyclin-D1 [Anabas testudineus]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTSHDFIEHFLSKLKIHPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSENLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHS
SATETKHVDEDVDL

SCTPTDVRDINI

>XP_025734286.1 G1/S-specific cyclin-D1 [Callorhinus ursinus]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELFLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENRQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSSSSFLSYHRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQ
SLDPKAAAEEEEEEE

ADLACTPTDVRDVNI

>XP_029063452.1 G1/S-specific cyclin-D1 [Monodon monoceros]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELVLVNKLKWNLAATTPHDFIEHFLSKMPVVEESKQVIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSANSFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEGEEEEE

VDLACTPTDVRDVDI

>NP_001005757.1 G1/S-specific cyclin-D1 [Canis lupus familiaris]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLNRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSSNSFLSYHRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQ
SLDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>XP_024430129.1 G1/S-specific cyclin-D1 [Desmodus rotundus]

MAHQLLCCEVDTIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPMKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAATTPHDFIEHFLSKMPVAEENRQIIRKHAQTFVALCATDVKF
ISNPPSMVAAGSVVA

AVQGLHLGSSSSFLSYHRLTRFLSKVIRCDRDCLRACQEQIEALLEASLRQAQQQ
SLDPKAAEEEEEEEE

VDLACTPTDVRDVNI

>XP_003449232.1 G1/S-specific cyclin-D1 [Oreochromis niloticus]

MEPQLWCCEGDGPPIPRAYRDSNLLTDRVLHALLRVEDMYLPAPNYFKCVQREI
SPYMRRIVAAWMLEVC

EEQKCEEEVFPLAMNYMDRILSVEPTKKNHLQLLGAACMFLASKLKETIPLTAEK
LCIYTDNSVTPSQLL

QMELLVLNKLKWDLASPTPLDFIDHFLSQLPVNKENKSILRKHAQTFVALCATD
VKFIASPPSMVAAGSM

VAAVEGLQMRMVGNAMMSQKLTEQLAQTIKSDPDCLRACQEQIESLLETSLRQ
AQQQHSFAMETKKMGED

HSATPTDVRDINI

>XP_020034966.1 G1/S-specific cyclin-D1 [Castor canadensis]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLHLGSPNNFLSCYRLTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
LDPKATEEEEEEEEE

TDLACTPTDVRDVDI

>XP_022362257.1 G1/S-specific cyclin-D1 [Enhydra lutris kenyoni]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENRQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGGSNSFLSCHRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQ
SLDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>XP_023137594.1 G1/S-specific cyclin-D1 [Amphiprion ocellaris]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLHTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVETTRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLSKLKWDLASVTPHDFIEHFLSKLKIYPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSRVIRSDPDCLRSCQEQIESLLESSLRQAQQHS
STTETKRVDEDVDL

SCTPTDVRDINI

>XP_032213951.1 G1/S-specific cyclin-D1 [Mustela erminea]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAVTPHDFIEHFLSKMPAAEENRQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGGSNSFLSCHRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQ
SLDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>XP_026030626.1 G1/S-specific cyclin-D1 [Astatotilapia calliptera]

MEPQLWCCEGDGPPIPRAYRDSNLLTDRVLHALLRVEDMYLPAPNYFKCVQREI
SPYMRRIVAAWMLEVC

EEQKCEEEVFPLAMNYMDRILSVEPTKKNHLQLLGAACMFLASKLKETIPLTAEK
LCIYTDNSVTPSQLL

QMELLVLNKLKWDLASPTPLDFIDHFLSQLPVNKENKSILRKHAQTFVALCATD
VKFIASPPSMVAAGSM

VAAVEGLQMRMVGNTMMSQKLTEQLAQTIKSDPDCLRACQEQIESLLETSLRQA
QQQHSFAMETKKMGED

HSATPTDVRDINI

>XP_029000768.1 G1/S-specific cyclin-D1 [Betta splendens]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLRTMLKAEENYLPSPNYFKCVQKEIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTSHDFIEHFLSKLKIHPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDPSLSSENLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHS
GTTETKRVDEDVDL

SCTPTDVRDINI

>XP_017275142.1 G1/S-specific cyclin-D1 [Kryptolebias marmoratus]

MEDQLLCCEVDSIRRAYQDVNLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIVP
KMRKILATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKARLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVLPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKIHPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDPSLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHS
GTTETKHADEEVDL

SCTPTDVRDVNI

>XP_027434698.1 G1/S-specific cyclin-D1 [Zalophus californianus]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELFLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENRQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSSSSFLSYPRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQS
LDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>XP_027973878.1 G1/S-specific cyclin-D1 [Eumetopias jubatus]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELFLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENRQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSSSSFLSYPRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQS
LDPKAAEEEEEEEE

ADLACTPTDVRDVNI

>XP_022446856.1 G1/S-specific cyclin-D1 [Delphinapterus leucas]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELVLVNKLKWNLAATTPHDFIEHFLSKMPVVEESKQVIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSANSFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEGEEEEE

ADLACTPTDVRDVDI

>XP_024604653.1 G1/S-specific cyclin-D1 [Neophocaena asiaeorientalis asiaeorientalis]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELVLVNKLKWNLAATTPHDFIEHFLSKMPVVEESKQVIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSANSFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEGEEEEE

ADLACTPTDVRDVDI

>XP_006911059.1 G1/S-specific cyclin-D1 [Pteropus alecto]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSSSSFLSYHRLTRFLSKVIKCDPDCLRACQEQIEALLESSLRQAQQQS
LDPKAAEEEEEEEE

EADLACTPTDVRDVNI

>XP_005351668.1 G1/S-specific cyclin-D1 [Microtus ochrogaster]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKTEETCAPSVSYFKCVQREIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIQPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNNYLSCYRTTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
IDPKATEEEGEAQGE

TDLACTPTDVRDVDI

>XP_012709148.1 G1/S-specific cyclin-D1 [Fundulus heteroclitus]

MEEQLLCCEVDSIRRAYQDENLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIIPK
MRKILATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVIPGELLQM

ELLVLNKLKWDLASVTPHDFIEHFLSKLKIHPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSPNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHN
GPTETKRMDEEVDL

SCTPTDVRDINI

>XP_020469376.1 G1/S-specific cyclin-D1 [Monopterus albus]

MEDQLLCCEVDSIRRAYQDINLLNDRVLHTMLKAEESYLPSPNYFKCVQKEIVPK
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLNKLKWDLASVTSHDFIEHFLSKLKIYPTTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDTSLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHS
STTESKRVDEDVDL

SCTPTDVRDINI

>XP_008145063.1 G1/S-specific cyclin-D1 isoform X2 [Eptesicus fuscus]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKGRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIQPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEVNKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AAQGLHLGSSNSFLSYHRLTRFLSKVIKCDPDCLRACQEQIEALLESSLRQAQQSL
DPKAVEEEEEEEEE

VDLACTPTDVRDVDI

>XP_020567270.1 G1/S-specific cyclin-D1 [Oryzias latipes]

MEEQLLCCEVDSIRRAHQDVNLLNERVLRTMLKAEENYLPAPNYFKCVQKDIAP
NMRKILATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEPTRKSRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLSKLKWDLASVTPHDFIEHFLSKLTIHASTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHG
SVTEAKRVDEEVDL

SCTPTDVRDINI

>XP_026946076.1 G1/S-specific cyclin-D1 isoform X2 [Lagenorhynchus obliquidens]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELVLVNKLKWNLAATTPHDFIEHFLSKMPVVEESKQVIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSANSFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEGEEEDE

ADLACTPTDVRDVDI

>XP_030689100.1 G1/S-specific cyclin-D1 isoform X2 [Globicephala melas]

MAHQLLCCEMETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPDELLQM

ELVLVNKLKWNLAATTPHDFIEHFLSKMPVVEESKQVIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSANSFLSYHRLTRFLSKVIRCDPDCLRACQEQIEALLESSLRQAQQQ
NLDPKAAEEGEEEDE

ADLACTPTDVRDVDI

>XP_028305676.1 G1/S-specific cyclin-D1 [Gouania willdenowi]

MELQLLCSEGGRPLRPAIRRAYRDRNLLTERVLRALLRAEDKYLPAPNYFKCVQ
REVAPYMRRIVATWML

EVCEEQKCEEEVFPLAMNYMDRFLSVEPTKKNHLQLLGAACMFLASKLKETIPL
TAEKLCIYTDNSVMPS

QLLQMELMVLNKLKWDLASLTPLDFIDHFLAQLAVRKENRPILRKHAQTFVALC
ATDVKFIASPPSMVAA

GSMVAAVEGLQMKMVGNATMSQELTEQLAQIIRSDPDCLRACQEQIESLLETSL
RQAHQQHGGMTEAKSL

SEGQDLSTTPTDVQDVNI

>NP_741989.3 G1/S-specific cyclin-D1 [Rattus norvegicus]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKTEETCAPSVSYFKCVQREIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNNFLSCYRTTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
IDPKATEEEGEVEEE

AGLACTPTDVRDVDI

>XP_028626873.1 G1/S-specific cyclin-D1 isoform X2 [Grammomys surdaster]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKTEETCAPSVSYFKCVQREIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNNFLSCYRTTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
IDPKATEEEGEVEEE

AGLACTPTDVRDVDI

>XP_005802721.1 G1/S-specific cyclin-D1 [Xiphophorus maculatus]

MEEQLLCCEVDSIRRAHQDENLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIIPK
MRKILATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVLPGELLQM

ELLVLSKLKWDLASVTPHDFIEHFLSKLKIHPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSPNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHG
GAAETKRMDEDADL

SCTPTDVRDVNI

>XP_027870710.1 G1/S-specific cyclin-D1 [Xiphophorus couchianus]

MEEQLLCCEVDSIRRAHQDENLLNDRVLQTMLKAEENYLPSPNYFKCVQKEIIPK
MRKILATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVLPGELLQM

ELLVLSKLKWDLASVTPHDFIEHFLSKLKIHPSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSPNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHG
GAAETKRMDEDADL

SCTPTDVRDVNI

>XP_021022923.1 G1/S-specific cyclin-D1 isoform X2 [Mus caroli]

MEHQLLCCEVDTIRRAYPDTNLLNDRVLRAMLKTEETCAPSVSYFKCVQKEIVP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQTIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNNFLSCYRTTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
VDPKATEEEGEVEEE

AGLACTPTDVRDVDI

>NP_001230977.1 G1/S-specific cyclin-D1 [Cricetulus griseus]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKTEETCAPSVSYFKCVQREIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNNYLSCYRTTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
INPKATEEEGEAEGE

TDLACTPTDVRDVDI

>XP_005064167.1 G1/S-specific cyclin-D1 [Mesocricetus auratus]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKTEETCAPSVSYFKCVQREIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNNYLSCYRTTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
INPKATEEEGEAEGE

TDLACTPTDVRDVDI

>XP_031244914.1 G1/S-specific cyclin-D1 isoform X2 [Mastomys coucha]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKTEETCAPSVSYFKCVQKEIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNNFLSCYRTTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
IDPKATEEEGEAEEE

AGLACTPTDVRDVDI

>XP_024120919.1 G1/S-specific cyclin-D1 [Oryzias melastigma]

MEEQLLCCEVDSVRRAHQDVNLLNARVLQTMLKAEENYLPAPNYFKCVQKDV
VPNMRKILATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEPTRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVQPGELLQM

ELLVLSKLKWDLASVTPHDFIEHFLSKLTIHTSTKQILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQHG
SMTEAKRVDEEVDL

SCTPTDVRDINI

>XP_021489819.1 G1/S-specific cyclin-D1 [Meriones unguiculatus]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKTEETCAPSVSYFKCVQREIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGAACMFVASKMKETIPLTAEKL
CIYTDNSIQPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNNFLSCYRTTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
VDPKATEEEGEAEEE

AGLACTPTDVRDVNI

>XP_028727293.1 G1/S-specific cyclin-D1 [Peromyscus leucopus]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKTEETCAPSVSYFKCVQREIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGAACMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNNFLTCYCTTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
VDPKATEEEGEAEGE

TDLACTPTDVRDVDI

>XP_030233815.1 G1/S-specific cyclin-D1 [Gadus morhua]

MEPQLLCCEVETIRRAHQDHNLLNDRVLLTMLRAEENYLPAPNYFKCVQKEILP
GMRKVVATWMLEVCEE

QKCEEEVFPLAMNFLDRFLSVEATRKSRLQLLGAACMFLASKMKETVPLTAEKL
CIYTDNSIQPGELLQM

ELLVLSKLKWDLASVTPHDFMEHFLSKLNIHPSTRQILRKHAQTFVALCATDVNF
IASPSSMVAAGSVAA

AVQGLYLKSPDSSLSAHNLTNFLSQIIRSDPDCLRSCQEQIEALLESSLRQAQQYS
VSTETKHSEEEVDL

SCTPTDVRDINI

>XP_011240279.1 G1/S-specific cyclin-D1 isoform X1 [Mus musculus]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKTEETCAPSVSYFKCVQKEIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQTIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNNFLSCYRTTHFLSRVIKCDPVKALATGLWLNKDPLHLRPPLQD
CLRACQEQIEALLESS

LRQAQQNVDPKATEEEGEVEEEAGLACTPTDVRDVDI

>XP_021054696.1 G1/S-specific cyclin-D1 [Mus pahari]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKTEETCAPSVSYFKCVQKEIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQTIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNSFLSCYRTTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
VNPKATEEEGEAEEE

AGLACTPTDVRDVDI

>XP_027800529.1 G1/S-specific cyclin-D1 [Marmota flaviventris]

MAHQLLCCEVESIRRAYPDTNLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSPNTFLSCYRLTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
LDPKASEEEVEEAAG

ADLACTPTDVRDVDV

>XP_026252362.1 G1/S-specific cyclin-D1 [Urocitellus parryii]

MAHQLLCCEVESIRRAYPDTNLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPDELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSPNTFLSCYRLTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
LDPKANEEEVEEAAG

ADLACTPTDVRDVDV

>XP_004627170.1 G1/S-specific cyclin-D1 [Octodon degus]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSPNNFLTCYRLTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
LDPKATEEEEEEEEE

TDLACTPTDVRDVDI

>NP_001005452.1 G1/S-specific cyclin-D1 [Xenopus tropicalis]

MELLCCEVDTIRRAHLDRNLITDRVLQTMLKAEETCCPNVSYFKCVQKEILPHM
RKIVATWMLEVCEEQK

CEEEVFPLAMNYLDRFLSVKTLRKSQLQLLGATCMFLASKMKETIPLTAEKLCIY
TDNSIRPEELLLMEL

LILNKLKWDLASVTPHDFIEHFLNKMPLTEDTKQIIRKHAQTFVALCATDIKFISN
PPSMIAAGSVAAAV

QGLNLGNADSVFSTQRLTLFLSQVIKCDPDCLRACQEQIESLLESSLRQAQQQHN
TSSDTKNMVEEADIS

CTPTDVRDVNI

>XP_029813111.1 G1/S-specific cyclin-D1 [Suricata suricatta]

MAHQLLCCEVETIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIRPEELLRM

ELLLVNKLKWNLAATTPHDFIEHFLSKMPVAEENKPIIRKHAQTFVALCATDVKF
ISNPPSMVAAGSVVA

AVQGLHLGGASSFLSYPRLTRFLSKVIKCDADCLRACQEQIEALLESSLRQAQQQ
SLDPKAAAEEEEEEE

VDLACTPTDVRDVNI

>BAA03115.1 cyclin D1 [Rattus rattus]

MEHQLLCCEVETIRRAYPDTNLLNRPGLRAMLKTEETCAPSVSYFKCVQREIVPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEADENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AMQGLNLGSPNNFLSCYRTTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
IDPKATEEEGEVEEE

AGLACTPTDVRDVDI

>TWW76150.1 G1/S-specific cyclin-D1 [Takifugu flavidus]

MEEQLLCCEADRPPIRRAYRDSNLLTDRVLRALLRAEDKYQPAPNYFKCVQREL
APYMRRIVATWMLEVC

EEQKCEEEVFPLAMNYMDRFLSVEPTKKNHLQLLGATCMFLASKLKETIPLTAN
KLCIYTDNSITPAQLL

QMELLVLNKLKWDLASVTALDFIDHFLRQIPGMRECKLVLRKHAQTFVALCATD
VKFIASPPSMVAASSM

VAAVGGLQSRLAGGCNMSQKMTEQLAQTIRCDPDCLRACQEQIEALLETSLRQA
QQHAVATETKNVHEGL

CLSATPTDVQDINILINLHKS

>AFK15625.1 cyclin D1 [Eleutherodactylus coqui]

MELLCCEVDTIRRAHLDRNLLTERVLRTMLKAEETCCPAANYFKCVQKEVLPY
MRKIVATWMLEVCEEQK

CEEEVFPLAMNYLDRFLSVEPLKKNRLQLLGATCMFLASKMKETIPLTAEKLCIY
TDNSIRPEELLIMEL

LILNKLKWDMASVTPHDFIEHFLDKMSLTDDTKQIIRKHAQTFVALCATDVKFIS
NPPSMIAAGSVAAAI

QGLNLGNTDSILSSQRLTLFLSQVIKCDPDCLRACQEQIELLLESSLRHASQQINIS
SDTKSVVDETDLS

CTPTDVRDVNI

>KFO28305.1 G1/S-specific cyclin-D1 [Fukomys damarensis]

MEHQLLCCEVETIRRAYPDTNLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILPS
MRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPLKKSRLQLLGATCMFVASKMKETIPLTAEKLC
IYTDNSIRPEELLQM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPEAEENKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AVQGLHLGSPNNFLTCYRLTHFLSRVIKCDPDCLRACQEQIEALLESSLRQAQQN
LDPKATEEEEEEEEE

ADLACTPTDVRDVDI

>XP_020790441.1 G1/S-specific cyclin-D1 [Boleophthalmus pectinirostris]

MEDQLLCCEVDSIRRAYQDGNLLNDRVLHTMLKAEESYLPSPNYFKCVQREIVP
KMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATRKTRLQLLGATCMFLASKMKETVPLTAEKL
CIYTDNSVHPSELLQM

ELLLLNKLKWDLASVTPHDFIEHFLSKLKIHLSTKQVLRKHAQTFVALCATDVNF
IASPPSMVAAGSVAA

AVQGLYLKSQDASLSSQNLTNFLSQVIRSDPDCLRSCQEQIESLLESSLRQAQQQH
HHSCTESKRVDGDV

DLSCTPTDVRDVNI

>ELK24236.1 G1/S-specific cyclin-D1 [Myotis davidii]

MAHQLLCCEVDTIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKGRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIQPEELLHM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEVNKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AAQGLHLGSSNSFLSYHRLTRFLSKVIKCDPDCLRACQEQIEALLESSLRQAQQSL
DPKAVEEEEEEEEE

VDLACTPTDVRDVDI

>XP_006098108.1 G1/S-specific cyclin-D1 isoform X2 [Myotis lucifugus]

MAHQLLCCEVDTIRRAYPDANLLNDRVLRAMLKAEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIQPEELLHM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEVNKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AAQGLHLGSSNSFLSYHRLTRFLSKVIKCDPDCLRACQEQIEALLESSLRQAQQSL
DPKAVEEEEEEEEE

VDLACTPTDVRDVDI

>EPQ06630.1 G1/S-specific cyclin-D1 [Myotis brandtii]

MAHQLLCCEVDTIRRAYPDANLLNDRVLRAMLKTEETCAPSVSYFKCVQKEILP
SMRKIVATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSLEPVKKSRLQLLGATCMFVASKMKETIPLTAEKL
CIYTDNSIQPEELLHM

ELLLVNKLKWNLAAMTPHDFIEHFLSKMPVAEVNKQIIRKHAQTFVALCATDVK
FISNPPSMVAAGSVVA

AAQGLHLGSSNSFLSYHRLTRFLSKVIKCDPDCLRACQEQIEALLESSLRQAQQSL
DPKAVEEEEEEEEE

VDLACTPTDVRDVDI

>XP_029702239.1 G1/S-specific cyclin-D1 [Takifugu rubripes]

MGEKLLCCEVDSIRRAYQDANLLNDRVLLTMLKAEEHYLPSPNYFKCVQKELVP
KMRKIAATWMLEVCEE

QKCEEEVFPLAMNYLDRFLSVEATSKTRLQLLGATCMFLASKMKETVPLSVEKL
CIYTDNSVHPGELLQM

ELLVLSKLKWDLASVMPHDFIEHFLSKLRIFPSTKHILRKHAQTFVALCATDVNFI
ASPPSMVAAGSVVA

AVQGLYLKSLDASFSSQNLTNLLSQVIGSDPDCLRACQEQIESLLESSLQQVQHH
NNTKEPKCVASDADL

SCTPTDVRDINI