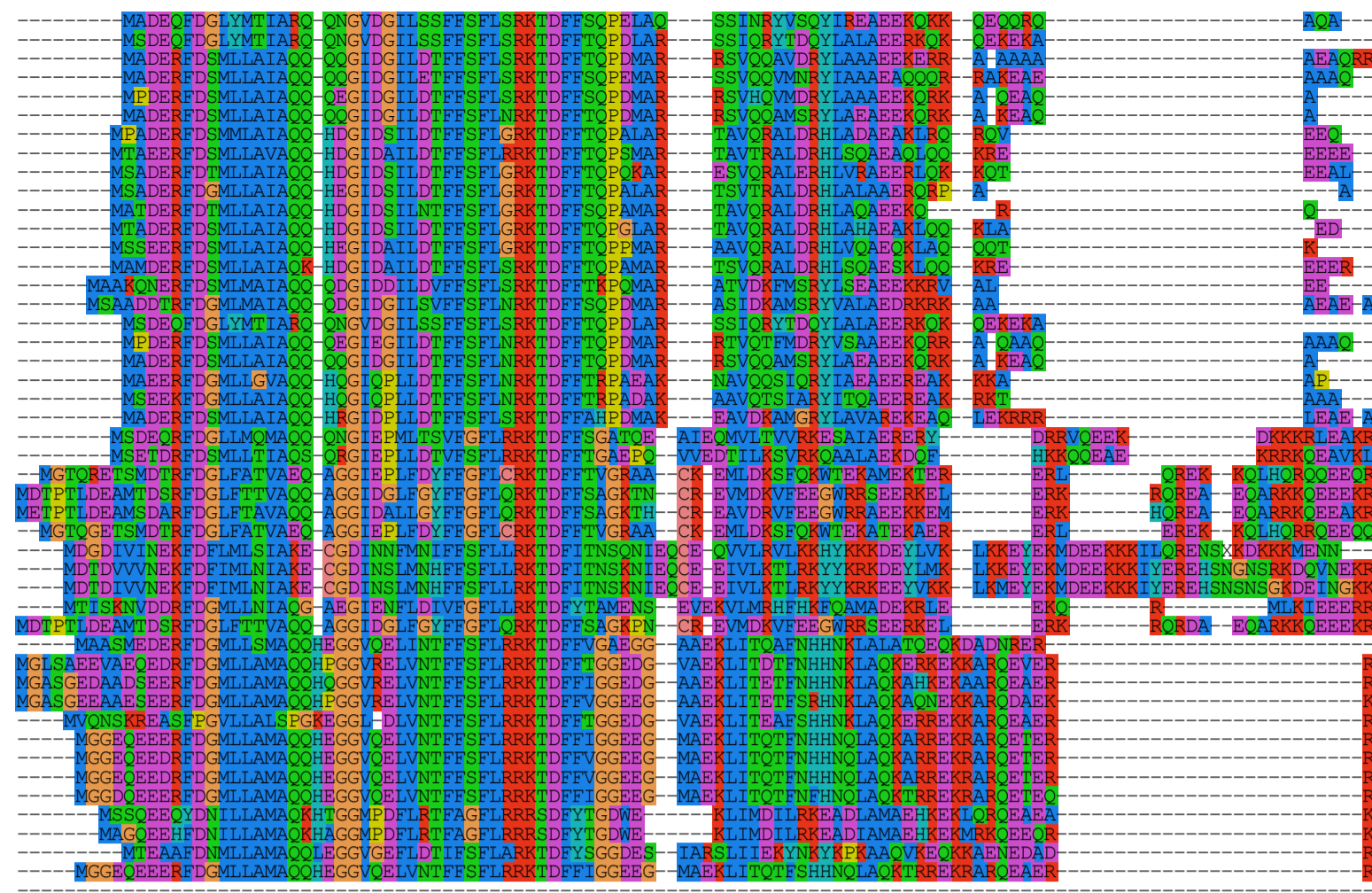


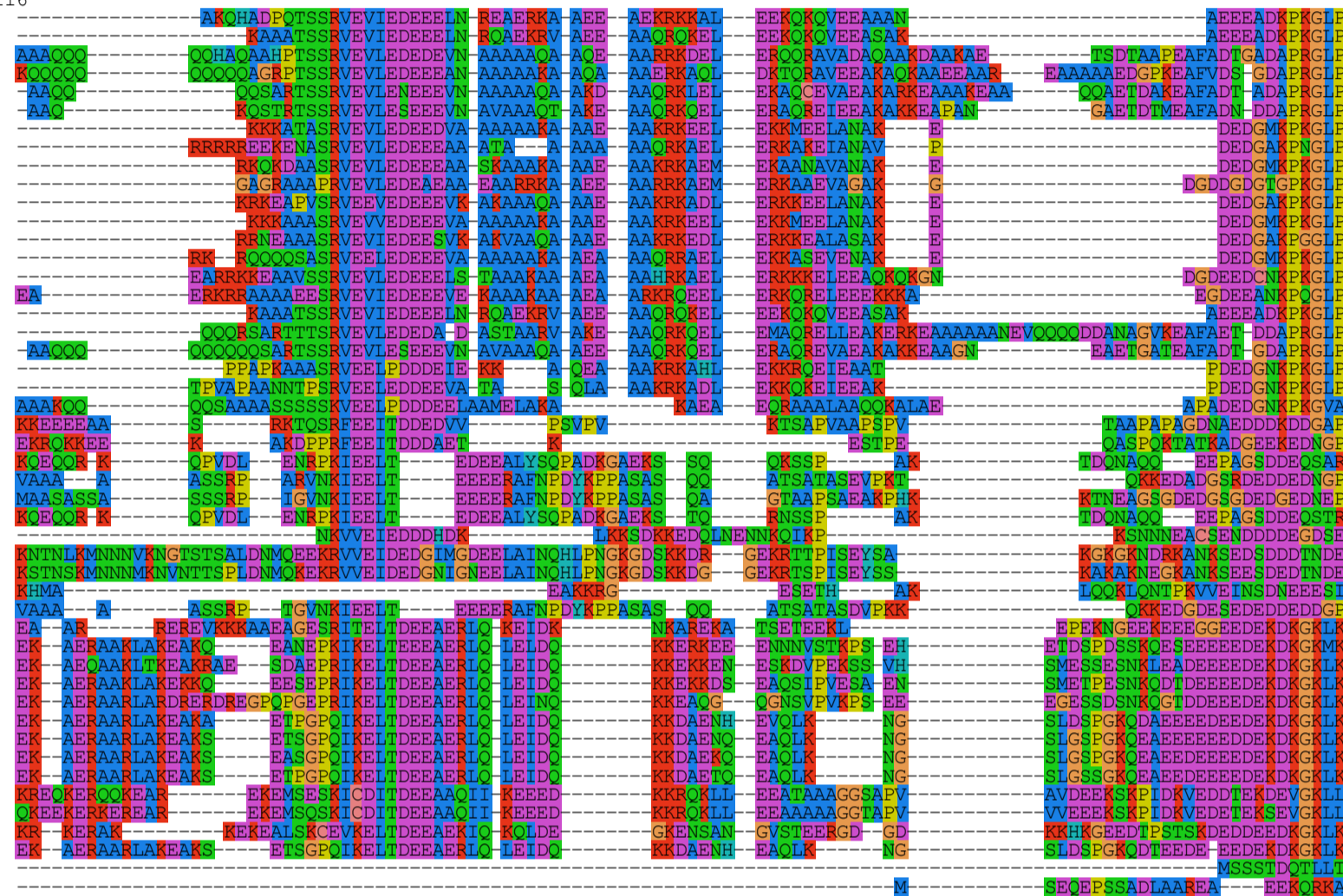
NudC1 homologs

Angomonas desouzai
Angomonas deanei
Leptomonas costaricensis
Crithidia fasciculata
Leishmania braziliensis
Leishmania mexicana
Trypanosoma ralphi
Trypanosoma sp TCC878
Trypanosoma cruzi
Trypanosoma lewisi
Trypanosoma brucei
Trypanosoma grayi
Trypanosoma vivax
Trypanosoma sp TCC339
Phytomonas serpens
Herpetomonas muscarum
Angomonas deanei
Endotrypanum schaudinni
Leishmania major
Bodo saltans
Bodo sp
ParaBodo caudatus
XP_008879598.1|Aphanomyces
ETL31708.1|Phytophthora
XP_013233790.1|Eimeria tenella
XP_002368217.1|Toxoplasma gondii
XP_003883577.1|Neospora caninum
XP_013436709.1|Eimeria necatrix
XP_726864.1|Plasmodium yoelii
XP_008815682.1|Plasmodium inui
XP_002259979.1|Plasmodium knowlesi
XP_002141127.1|Cryptosporidium muris
XP_008882748.1|Hammondia hammondi
NP_001084961.1|Xenopus laevis
XP_006270261.2|Alligator mississippiensis
XP_015264922.1|Gekko japonicus
XP_003227510.1|Anolis carolinensis
XP_005427196.1|Geospiza fortis
NP_058967.1|Rattus norvegicus
NP_001069075.1|Bos taurus
XP_006055533.1|Bubalus bubalis
XP_004478818.1|Dasyus novemcinctus
XP_013115147.1|Stomoxys calcitrans
XP_005181854.1|Musca domestica
XP_014239874.1|Cimex lectularius
NP_006591.1|Homo sapiens
EFC40417.1|Naegleria gruberi
P17624.1|Aspergillus nidulans



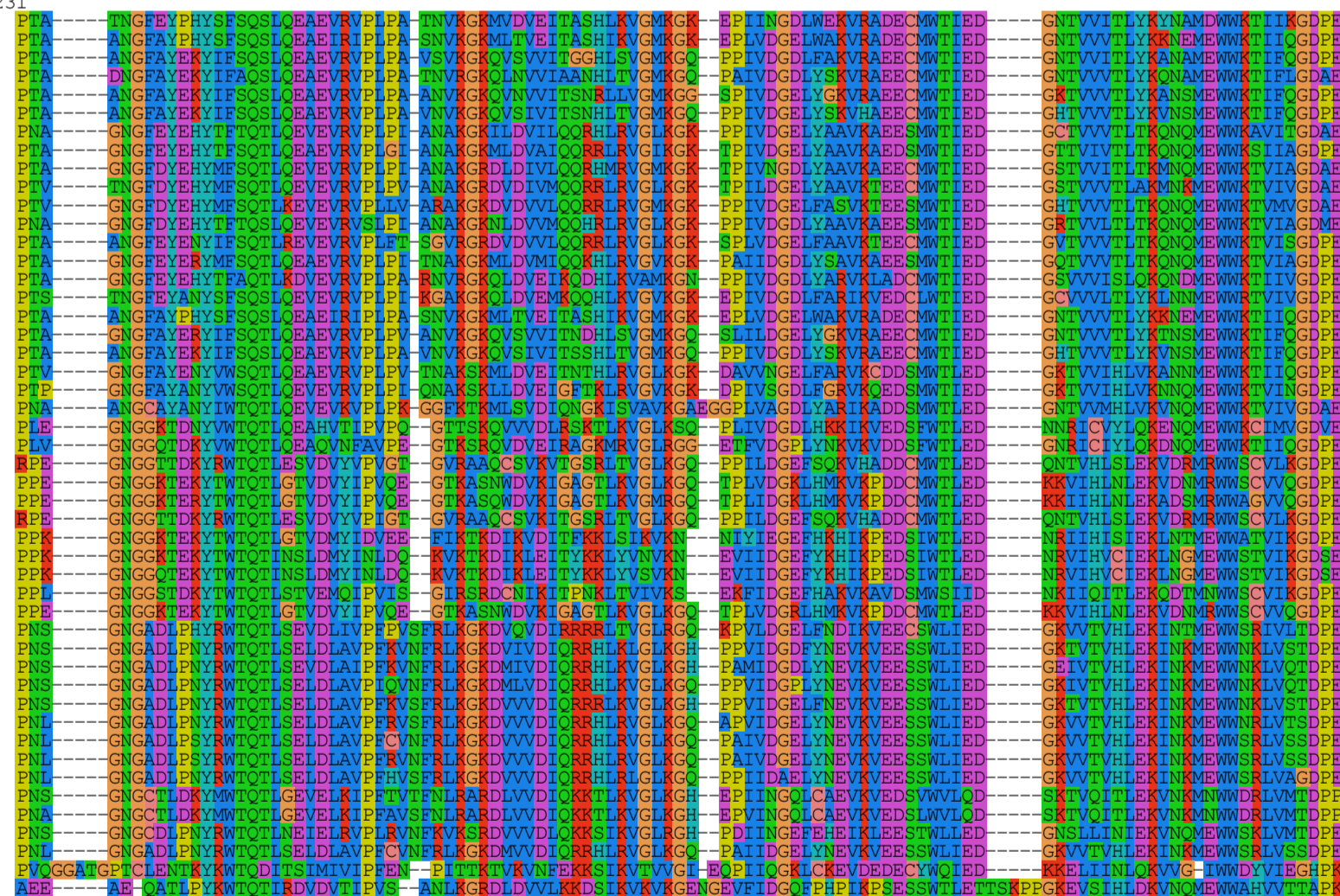
Angomonas desouzai
Angomonas deanei
Leptomonas costaricensis
Crithidia fasciculata
Leishmania braziliensis
Leishmania mexicana
Trypanosoma ralphi
Trypanosoma sp TCC878
Trypanosoma cruzi
Trypanosoma lewisi
Trypanosoma brucei
Trypanosoma grayi
Trypanosoma vivax
Trypanosoma sp TCC339
Phytomonas serpens
Herpetomonas muscarum
Angomonas deanei
Endotrypanum schaudinni
Leishmania major
Bodo saltans
Bodo sp
ParaBodo caudatus
XP_008879598.1|Aphanomyces
ETL31708.1|Phytophthora
XP_013233790.1|Eimeria tenella
XP_002368217.1|Toxoplasma gondii
XP_003883577.1|Neospora caninum
XP_013436709.1|Eimeria necatrix
XP_726864.1|Plasmodium yoelii
XP_008815682.1|Plasmodium inui
XP_002259979.1|Plasmodium knowlesi
XP_002141127.1|Cryptosporidium muris
XP_008882748.1|Hammondia hammondi
NP_001084961.1|Xenopus laevis
XP_006270261.2|Alligator mississippiensis
XP_015264922.1|Gekko japonicus
XP_003227510.1|Anolis carolinensis
XP_005427196.1|Geospiza fortis
NP_058967.1|Rattus norvegicus
NP_001069075.1|Bos taurus
XP_006055533.1|Bubalus bubalis
XP_004478818.1|Dasyus novemcinctus
XP_013115147.1|Stomoxys calcitrans
XP_005181854.1|Musca domestica
XP_014239874.1|Cimex lectularius
NP_006591.1|Homo sapiens
EFC40417.1|Naegleria gruberi
P17624.1|Aspergillus nidulans

116



Angomonas desouzai
Angomonas deanei
Leptomonas costaricensis
Crithidia fasciculata
Leishmania braziliensis
Leishmania mexicana
Trypanosoma ralphi
Trypanosoma sp TCC878
Trypanosoma cruzi
Trypanosoma lewisi
Trypanosoma brucei
Trypanosoma grayi
Trypanosoma vivax
Trypanosoma sp TCC339
Phytomonas serpens
Herpetomonas muscarum
Angomonas deanei
Endotrypanum schaudinni
Leishmania major
Bodo saltans
Bodo sp
ParaBodo caudatus
XP_008879598.1|Aphanomyces
ETL31708.1|Phytophthora
XP_013233790.1|Eimeria tenella
XP_002368217.1|Toxoplasma gondii
XP_003883577.1|Neospora caninum
XP_013436709.1|Eimeria necatrix
XP_726864.1|Plasmodium yoelii
XP_008815682.1|Plasmodium inui
XP_002259979.1|Plasmodium knowlesi
XP_002141127.1|Cryptosporidium muris
XP_008882748.1|Hammondia hammondi
NP_001084961.1|Xenopus laevis
XP_006270261.2|Alligator mississippiensis
XP_015264922.1|Gekko japonicus
XP_003227510.1|Anolis carolinensis
XP_005427196.1|Geospiza fortis
NP_058967.1|Rattus norvegicus
NP_001069075.1|Bos taurus
XP_006055533.1|Bubalus bubalis
XP_004478818.1|Dasyus novemcinctus
XP_013115147.1|Stomoxys calcitrans
XP_005181854.1|Musca domestica
XP_014239874.1|Cimex lectularius
NP_006591.1|Homo sapiens
EFC40417.1|Naegleria gruberi
P17624.1|Aspergillus nidulans

231



Angomonas desouzai
Angomonas deanei
Leptomonas costaricensis
Crithidia fasciculata
Leishmania braziliensis
Leishmania mexicana
Trypanosoma ralphi
Trypanosoma sp TCC878
Trypanosoma cruzi
Trypanosoma lewisi
Trypanosoma brucei
Trypanosoma grayi
Trypanosoma vivax
Trypanosoma sp TCC339
Phytomonas serpens
Herpetomonas muscarum
Angomonas deanei
Endotrypanum schaudinni
Leishmania major
Bodo saltans
Bodo sp
ParaBodo caudatus
XP_008879598.1|Aphanomyces
ETL31708.1|Phytophthora
XP_013233790.1|Eimeria tenella
XP_002368217.1|Toxoplasma gondii
XP_003883577.1|Neospora caninum
XP_013436709.1|Eimeria necatrix
XP_726864.1|Plasmodium yoelii
XP_008815682.1|Plasmodium inui
XP_002259979.1|Plasmodium knowlesi
XP_002141127.1|Cryptosporidium muris
XP_008882748.1|Hammondia hammondi
NP_001084961.1|Xenopus laevis
XP_006270261.2|Alligator mississippiensis
XP_015264922.1|Gekko japonicus
XP_003227510.1|Anolis carolinensis
XP_005427196.1|Geospiza fortis
NP_058967.1|Rattus norvegicus
NP_001069075.1|Bos taurus
XP_006055533.1|Bubalus bubalis
XP_004478818.1|Dasyus novemcinctus
XP_013115147.1|Stomoxys calcitrans
XP_005181854.1|Musca domestica
XP_014239874.1|Cimex lectularius
NP_006591.1|Homo sapiens
EFC40417.1|Naegleria gruberi
P17624.1|Aspergillus nidulans

346



TryACDp

1

Herpetomonas muscarum
Phytomonas sp Hartl
Phytomonas sp TCC066E
Phytomonas sp TCC418
Phytomonas sp EMI
Phytomonas serpens
Angomonas desouzai
Angomonas deanei
Strigomonas culicis
Strigomonas oncopelti
Strigomonas galati
Leptomonas costaricensis
Leptomonas sp TCC2547
Leptomonas sp TCC2441
Crithidia fasciculata
Crithidia acantoccephali
Crithidia lucilliae thermophila
Endotrypanum schaudinni
Endotrypanum monterogeii
Leishmania braziliensis
Leishmania panamensis
Leishmania tarentolae
Leishmania arabica
Leishmania donovani
Leishmania infantum
Leishmania aethiopica
Leishmania tropica
Leishmania major
Leishmania gerbilli
Leishmania turanica
Leishmania amazonensis
Leishmania mexicana
Leishmania martiniquensis
Leishmania enriettii
Trypanosoma sp TCC2186
Trypanosoma sp TCC1307
Trypanosoma sp TCC339
Trypanosoma sp TCC878
Trypanosoma sp TCC878
Trypanosoma congolense
Trypanosoma brucei T
Trypanosoma brucei T
Trypanosoma brucei gambiense
Trypanosoma evansi
Trypanosoma theileri
Trypanosoma cyclops
Trypanosoma ralphii
Trypanosoma grayi
Trypanosoma lewisi
Trypanosoma livingstonei
Trypanosoma wauwau
Trypanosoma rangeli AM80
Trypanosoma conorhini
Trypanosoma sp H25
Trypanosoma cruzi G
Trypanosoma cruzi marinkellei B7
Trypanosoma erneyi
Trypanosoma dionisii
Parabodo caudatus
Parabodo caudatus
Bodo sp
Bodo saltans

| | | | | |
|----------------|-----------|--------|---|---------------------------------------|
| MSEPVSLVGEAVLV | MSDSVLPPG | ASSAAB | P | KKTINNSYYYWHGHEKERRAAVGDVAPMPVFMVSKDE |
| MSEVFLVDQEAVLV | MSEEPKQAP | ASSAAB | D | PKTINSYYYWHGHEKERRAAVGDVAPMPVFMVSKDE |
| MSEVFLVDQEAVLV | MSEEPKQAP | ASSAAB | D | RKNSSSYYYWHGHEKERRAAVGDVAPMPVFMVSKDE |
| MSEVFLVDQEAVLV | MSEEPKQAP | ASSAAB | D | PKNSSSYYYWHGHEKERRAAVGDVAPMPVFMVSKDE |
| MSEVFLVDQEAVLV | MSEEPKQAP | ASSAAB | D | RKNSSSYYYWHGHEKERRAAVGDVAPMPVFMVSKDE |

225

Herpetomonas muscarum
Phytomonas sp Hartl
Phytomonas sp TCC066E
Phytomonas sp TCC418
Phytomonas sp EMI
Phytomonas serpens
Angomonas desouzai
Angomonas deanei
Strigomonas culicis
Strigomonas oncopelti
Strigomonas galati
Leptomonas costaricensis
Leptomonas sp TCC2547
Leptomonas sp TCC2441
Crithidia fasciculata
Crithidia acantoccephali
Crithidia lucilliae thermophila
Endotrypanum schaudinni
Endotrypanum monterogeii
Leishmania braziliensis
Leishmania panamensis
Leishmania tarentolae
Leishmania arabica
Leishmania donovani
Leishmania infantum
Leishmania aethiopica
Leishmania tropica
Leishmania major
Leishmania gerbilli
Leishmania turanica
Leishmania amazonensis
Leishmania mexicana
Leishmania martiniquensis
Leishmania enriettii
Trypanosoma sp TCC2186
Trypanosoma sp TCC1307
Trypanosoma sp TCC339
Trypanosoma sp TCC878
Trypanosoma sp TCC878
Trypanosoma congolense
Trypanosoma brucei T
Trypanosoma brucei T
Trypanosoma brucei gambiense
Trypanosoma evansi
Trypanosoma theileri
Trypanosoma cyclops
Trypanosoma ralphii
Trypanosoma grayi
Trypanosoma lewisi
Trypanosoma livingstonei
Trypanosoma wauwau
Trypanosoma rangeli AM80
Trypanosoma conorhini
Trypanosoma sp H25
Trypanosoma cruzi G
Trypanosoma cruzi marinkellei B7
Trypanosoma erneyi
Trypanosoma dionisii
Parabodo caudatus
Parabodo caudatus
Bodo sp
Bodo saltans

| | | | | |
|----------------|-----------|--------|---|---------------------------------------|
| MSEVFLVDQEAVLV | MSDSVLPPG | ASSAAB | P | KKTINNSYYYWHGHEKERRAAVGDVAPMPVFMVSKDE |
| MSEVFLVDQEAVLV | MSEEPKQAP | ASSAAB | D | PKTINSYYYWHGHEKERRAAVGDVAPMPVFMVSKDE |

249

Herpetomonas muscarum
Phytomonas sp Hartl
Phytomonas sp TCC066E
Phytomonas sp TCC418
Phytomonas sp EMI
Phytomonas serpens
Angomonas desouzai
Angomonas deanei
Strigomonas culicis
Strigomonas oncopelti
Strigomonas galati
Leptomonas costaricensis
Leptomonas sp TCC2547
Leptomonas sp TCC2441
Crithidia fasciculata
Crithidia acantoccephali
Crithidia lucilliae thermophila
Endotrypanum schaudinni
Endotrypanum monterogeii
Leishmania braziliensis
Leishmania panamensis
Leishmania tarentolae
Leishmania arabica
Leishmania donovani
Leishmania infantum
Leishmania aethiopica
Leishmania tropica
Leishmania major
Leishmania gerbilli
Leishmania turanica
Leishmania amazonensis
Leishmania mexicana
Leishmania martiniquensis
Leishmania enriettii
Trypanosoma sp TCC2186
Trypanosoma sp TCC1307
Trypanosoma sp TCC339
Trypanosoma sp TCC878
Trypanosoma sp TCC878
Trypanosoma congolense
Trypanosoma brucei T
Trypanosoma brucei T
Trypanosoma brucei gambiense
Trypanosoma evansi
Trypanosoma theileri
Trypanosoma cyclops
Trypanosoma ralphii
Trypanosoma grayi
Trypanosoma lewisi
Trypanosoma livingstonei
Trypanosoma wauwau
Trypanosoma rangeli AM80
Trypanosoma conorhini
Trypanosoma sp H25
Trypanosoma cruzi G
Trypanosoma cruzi marinkellei B7
Trypanosoma erneyi
Trypanosoma dionisii
Parabodo caudatus
Parabodo caudatus
Bodo sp
Bodo saltans

| | | | | |
|----------------|-----------|--------|---|---------------------------------------|
| MSEVFLVDQEAVLV | MSDSVLPPG | ASSAAB | P | KKTINNSYYYWHGHEKERRAAVGDVAPMPVFMVSKDE |
| MSEVFLVDQEAVLV | MSEEPKQAP | ASSAAB | D | PKTINSYYYWHGHEKERRAAVGDVAPMPVFMVSKDE |

1

NP 991251.1 Danio
AH62564.1 Homo
Phytomona sp Hartl
Phytomona sp TCC418
Phytomona sp EMI
Phytomona serpens
Herpetomona muscarum
Cithidia fasciculata
C luciliae_thermophila
Leptomona sp TCC2441
Cithidia acantocephali
Angomonas desouzai
Angomonas deanei
Strigomonas galati
Strigomonas culicis
Strigomonas oncopelti
Leptomonas costaricensis
Leptomonas sp TCC2547
Endotrypanum schaudinni
Endotrypanum monterogeii
L. brazilensis
L. panamensis
L. tarentolae
L. amazonensis
L. mexicana
L. donovani
L. infantum
L. aethiopia
L. tropica
L. major
L. gerbilli
L. arabica
L. turanica
L. martiniquensis
L. enriettii
T. congolense
T. sp TCC878
T. sp TCC1307
T. rangelii
T. brucei gambiense
T. evansi
T. vivax
T. sp TCC2186
T. sp TCC339
T. grayi
T. wauwau
T. livingstonei
T. sp H25
T. cruzi_marinkellei_B7
T. erneyi
T. donisii
T. conorhini
T. rangelii_Am80
Pirabodo caudatus
Bodo sp

Multiple sequence alignment for block 1. Shows conserved regions in red, yellow, and green across various species. Key motifs are highlighted in color.

133

NP 991251.1 Danio
AH62564.1 Homo
Phytomona sp Hartl
Phytomona sp TCC418
Phytomona sp EMI
Phytomona serpens
Herpetomona muscarum
Cithidia fasciculata
C luciliae_thermophila
Leptomonas sp TCC2441
Cithidia acantocephali
Angomonas desouzai
Angomonas deanei
Strigomonas galati
Strigomonas culicis
Strigomonas oncopelti
Leptomonas costaricensis
Leptomonas sp TCC2547
Endotrypanum schaudinni
Endotrypanum monterogeii
L. brazilensis
L. panamensis
L. tarentolae
L. amazonensis
L. mexicana
L. donovani
L. infantum
L. aethiopia
L. tropica
L. major
L. gerbilli
L. arabica
L. turanica
L. martiniquensis
L. enriettii
T. congolense
T. sp TCC878
T. sp TCC1307
T. rangelii
T. brucei gambiense
T. evansi
T. vivax
T. sp TCC2186
T. sp TCC339
T. grayi
T. wauwau
T. livingstonei
T. sp H25
T. cruzi_marinkellei_B7
T. erneyi
T. donisii
T. conorhini
T. rangelii_Am80
Pirabodo caudatus
Bodo sp

Multiple sequence alignment for block 133. Similar to block 1, showing conserved motifs in red, yellow, and green.

265

NP 991251.1 Danio
AH62564.1 Homo
Phytomona sp Hartl
Phytomona sp TCC418
Phytomona sp EMI
Phytomona serpens
Herpetomona muscarum
Cithidia fasciculata
C luciliae_thermophila
Leptomonas sp TCC2441
Cithidia acantocephali
Angomonas desouzai
Angomonas deanei
Strigomonas galati
Strigomonas culicis
Strigomonas oncopelti
Leptomonas costaricensis
Leptomonas sp TCC2547
Endotrypanum schaudinni
Endotrypanum monterogeii
L. brazilensis
L. panamensis
L. tarentolae
L. amazonensis
L. mexicana
L. donovani
L. infantum
L. aethiopia
L. tropica
L. major
L. gerbilli
L. arabica
L. turanica
L. martiniquensis
L. enriettii
T. congolense
T. sp TCC878
T. sp TCC1307
T. rangelii
T. brucei gambiense
T. evansi
T. vivax
T. sp TCC2186
T. sp TCC339
T. grayi
T. wauwau
T. livingstonei
T. sp H25
T. cruzi_marinkellei_B7
T. erneyi
T. donisii
T. conorhini
T. rangelii_Am80
Pirabodo caudatus
Bodo sp

Multiple sequence alignment for block 265. Shows conserved motifs in red, yellow, and green.

397

NP 991251.1 Danio
AH62564.1 Homo
Phytomona sp Hartl
Phytomona sp TCC418
Phytomona sp EMI
Phytomona serpens
Herpetomona muscarum
Cithidia fasciculata
C luciliae_thermophila
Leptomonas sp TCC2441
Cithidia acantocephali
Angomonas desouzai
Angomonas deanei
Strigomonas galati
Strigomonas culicis
Strigomonas oncopelti
Leptomonas costaricensis
Leptomonas sp TCC2547
Endotrypanum schaudinni
Endotrypanum monterogeii
L. brazilensis
L. panamensis
L. tarentolae
L. amazonensis
L. mexicana
L. donovani
L. infantum
L. aethiopia
L. tropica
L. major
L. gerbilli
L. arabica
L. turanica
L. martiniquensis
L. enriettii
T. congolense
T. sp TCC878
T. sp TCC1307
T. rangelii
T. brucei gambiense
T. evansi
T. vivax
T. sp TCC2186
T. sp TCC339
T. grayi
T. wauwau
T. livingstonei
T. sp H25
T. cruzi_marinkellei_B7
T. erneyi
T. donisii
T. conorhini
T. rangelii_Am80
Pirabodo caudatus
Bodo sp

Multiple sequence alignment for block 397. Shows conserved motifs in red, yellow, and green.

529

NP 991251.1 Danio
AH62564.1 Homo
Phytomona sp Hartl
Phytomona sp TCC418
Phytomona sp EMI
Phytomona serpens
Herpetomona muscarum
Cithidia fasciculata
C luciliae_thermophila
Leptomonas sp TCC2441
Cithidia acantocephali
Angomonas desouzai
Angomonas deanei
Strigomonas galati
Strigomonas culicis
Strigomonas oncopelti
Leptomonas costaricensis
Leptomonas sp TCC2547
Endotrypanum schaudinni
Endotrypanum monterogeii
L. brazilensis
L. panamensis
L. tarentolae
L. amazonensis
L. mexicana
L. donovani
L. infantum
L. aethiopia
L. tropica
L. major
L. gerbilli
L. arabica
L. turanica
L. martiniquensis
L. enriettii
T. congolense
T. sp TCC878
T. sp TCC1307
T. rangelii
T. brucei gambiense
T. evansi
T. vivax
T. sp TCC2186
T. sp TCC339
T. grayi
T. wauwau
T. livingstonei
T. sp H25
T. cruzi_marinkellei_B7
T. erneyi
T. donisii
T. conorhini
T. rangelii_Am80
Pirabodo caudatus
Bodo sp

Multiple sequence alignment for block 529. Shows conserved motifs in red, yellow, and green.

661

NP 991251.1 Danio
AH62564.1 Homo
Phytomona sp Hartl
Phytomona sp TCC418
Phytomona sp EMI
Phytomona serpens
Herpetomona muscarum
Cithidia fasciculata
C luciliae_thermophila
Leptomonas sp TCC2441
Cithidia acantocephali
Angomonas desouzai
Angomonas deanei
Strigomonas galati
Strigomonas culicis
Strigomonas oncopelti
Leptomonas costaricensis
Leptomonas sp TCC2547
Endotrypanum schaudinni
Endotrypanum monterogeii
L. brazilensis
L. panamensis
L. tarentolae
L. amazonensis
L. mexicana
L. donovani
L. infantum
L. aethiopia
L. tropica
L. major
L. gerbilli
L. arabica
L. turanica
L. martiniquensis
L. enriettii
T. congolense
T. brucei gambiense
T. evansi
T. vivax
T. sp TCC2186
T. sp TCC339
T. grayi
T. wauwau
T. livingstonei
T. sp H25
T. cruzi_marinkellei_B7
T. erneyi
T. donisii
T. conorhini
T. rangelii_Am80
Pirabodo caudatus
Bodo sp

Multiple sequence alignment for block 661. Shows conserved motifs in red, yellow, and green.

793

NP 991251.1 Danio
AH62564.1 Homo
Phytomona sp Hartl
Phytomona sp TCC418
Phytomona sp EMI
Phytomona serpens
Herpetomona muscarum
Cithidia fasciculata
C luciliae_thermophila
Leptomonas sp TCC2441
Cithidia acantocephali
Angomonas desouzai
Angomonas deanei
Strigomonas galati
Strigomonas culicis
Strigomonas oncopelti
Leptomonas costaricensis
Leptomonas sp TCC2547
Endotrypanum schaudinni
Endotrypanum monterogeii
L. brazilensis
L. panamensis
L. tarentolae
L. amazonensis
L. mexicana
L. donovani
L. infantum
L. aethiopia
L. tropica
L. major
L. gerbilli
L. arabica
L. turanica
L. martiniquensis
L. enriettii
T. congolense
T. brucei gambiense
T. evansi
T. vivax
T. sp TCC2186
T. sp TCC339
T. grayi
T. wauwau
T. livingstonei
T. sp H25
T. cruzi_marinkellei_B7
T. erneyi
T. donisii
T. conorhini
T. rangelii_Am80
Pirabodo caudatus
Bodo sp

Multiple sequence alignment for block 793. Shows conserved motifs in red, yellow, and green.

1
 NP_001124384.1 Homo sapiens MAAAGAGLANSRPFQSFSDALDDPDAALAEI...
 NP_192865.1 Arabidopsis thaliana MAELAEAKRFAEFLDDDDVAVDLYSKAID...
 HePetomonas muscarum
 Phytomonas sp TCC418
 Phytomonas sp Hart1
 Phytomonas sp Hart1
 Phytomonas serpens
 Phytomonas sp TCC066E
 Angomonas desouzai
 Angomonas deanei
 Strigomonas culicis
 Strigomonas oncolyti
 Strigomonas galati
 Leptomonas costaricensis
 Leptomonas sp TCC2547
 Crithidia fasciculata
 Leptomonas sp TCC2441
 Crithidia luciliae thermophila
 Crithidia acantocephali
 Endotrypanum schaudinni
 Endotrypanum monterogei
 Leishmania tarentolae
 Leishmania braziliensis
 Leishmania panamensis
 Leishmania guianensis
 Leishmania martiniquensis
 Leishmania amazonensis
 Leishmania mexicana
 Leishmania donovani
 Leishmania infantum
 Leishmania gerbilli
 Leishmania arabica
 Leishmania turanica
 Leishmania major
 Leishmania aethiopia
 Leishmania tropica
 Trypanosoma vivax
 Trypanosoma serpentis
 Trypanosoma congolense
 Trypanosoma brucei gambiense
 Trypanosoma brucei T
 Trypanosoma evansi
 Trypanosoma cyclops
 Trypanosoma theileri
 Trypanosoma sp TCC1307
 Trypanosoma sp TCC878
 Trypanosoma sp TCC878
 Trypanosoma ralphii
 Trypanosoma grayi
 Trypanosoma sp TCC2186
 Trypanosoma sp TCC339
 Trypanosoma lewisi
 Trypanosoma livingstonei
 Trypanosoma wauwau
 Trypanosoma sp H25
 Trypanosoma cruzi G
 Trypanosoma cruzi marinkellei B7
 Trypanosoma erneyi
 Trypanosoma dionisii
 Trypanosoma rangeli AM80
 Trypanosoma conorhina
 Bodo sp
 Bodo saltans
 Parabodo caudatus

249
 NP_001124384.1 Homo sapiens VPKRREAVWIKRLEGGD...
 NP_192865.1 Arabidopsis thaliana RLAAAEIITWASLEVGCG...
 HePetomonas muscarum
 Phytomonas sp TCC418
 Phytomonas sp Hart1
 Phytomonas sp Hart1
 Phytomonas serpens
 Phytomonas sp TCC066E
 Angomonas desouzai
 Angomonas deanei
 Strigomonas culicis
 Strigomonas oncolyti
 Strigomonas galati
 Leptomonas costaricensis
 Leptomonas sp TCC2547
 Crithidia fasciculata
 Leptomonas sp TCC2441
 Crithidia luciliae thermophila
 Crithidia acantocephali
 Endotrypanum schaudinni
 Endotrypanum monterogei
 Leishmania tarentolae
 Leishmania braziliensis
 Leishmania panamensis
 Leishmania guianensis
 Leishmania martiniquensis
 Leishmania amazonensis
 Leishmania mexicana
 Leishmania donovani
 Leishmania infantum
 Leishmania gerbilli
 Leishmania arabica
 Leishmania turanica
 Leishmania major
 Leishmania aethiopia
 Leishmania tropica
 Trypanosoma vivax
 Trypanosoma serpentis
 Trypanosoma congolense
 Trypanosoma brucei gambiense
 Trypanosoma brucei T
 Trypanosoma evansi
 Trypanosoma cyclops
 Trypanosoma theileri
 Trypanosoma sp TCC1307
 Trypanosoma sp TCC878
 Trypanosoma sp TCC878
 Trypanosoma ralphii
 Trypanosoma grayi
 Trypanosoma sp TCC2186
 Trypanosoma sp TCC339
 Trypanosoma lewisi
 Trypanosoma livingstonei
 Trypanosoma wauwau
 Trypanosoma sp H25
 Trypanosoma cruzi G
 Trypanosoma cruzi marinkellei B7
 Trypanosoma erneyi
 Trypanosoma dionisii
 Trypanosoma rangeli AM80
 Trypanosoma conorhina
 Bodo sp
 Bodo saltans
 Parabodo caudatus

373
 NP_001124384.1 Homo sapiens DVGKRRVLEINPPDDMEKKV...
 NP_192865.1 Arabidopsis thaliana EVGKIKVEAAPPDMEIKKVE...
 HePetomonas muscarum
 Phytomonas sp TCC418
 Phytomonas sp Hart1
 Phytomonas sp Hart1
 Phytomonas serpens
 Phytomonas sp TCC066E
 Angomonas desouzai
 Angomonas deanei
 Strigomonas culicis
 Strigomonas oncolyti
 Strigomonas galati
 Leptomonas costaricensis
 Leptomonas sp TCC2547
 Crithidia fasciculata
 Leptomonas sp TCC2441
 Crithidia luciliae thermophila
 Crithidia acantocephali
 Endotrypanum schaudinni
 Endotrypanum monterogei
 Leishmania tarentolae
 Leishmania braziliensis
 Leishmania panamensis
 Leishmania guianensis
 Leishmania martiniquensis
 Leishmania amazonensis
 Leishmania mexicana
 Leishmania donovani
 Leishmania infantum
 Leishmania gerbilli
 Leishmania arabica
 Leishmania turanica
 Leishmania major
 Leishmania aethiopia
 Leishmania tropica
 Trypanosoma vivax
 Trypanosoma serpentis
 Trypanosoma congolense
 Trypanosoma brucei gambiense
 Trypanosoma brucei T
 Trypanosoma evansi
 Trypanosoma cyclops
 Trypanosoma theileri
 Trypanosoma sp TCC1307
 Trypanosoma sp TCC878
 Trypanosoma sp TCC878
 Trypanosoma ralphii
 Trypanosoma grayi
 Trypanosoma sp TCC2186
 Trypanosoma sp TCC339
 Trypanosoma lewisi
 Trypanosoma livingstonei
 Trypanosoma wauwau
 Trypanosoma sp H25
 Trypanosoma cruzi G
 Trypanosoma cruzi marinkellei B7
 Trypanosoma erneyi
 Trypanosoma dionisii
 Trypanosoma rangeli AM80
 Trypanosoma conorhina
 Bodo sp
 Bodo saltans
 Parabodo caudatus

Tryp23A

Table listing protein sequences for Tryp23A from various species including Leishmania, Trypanosoma, and Bsaltrans.

125

Sequence alignment visualization for Tryp23A, showing conserved regions across species with color-coded amino acid blocks.

249

Sequence alignment visualization for Tryp23A, continuing from the previous alignment with color-coded amino acid blocks.

