

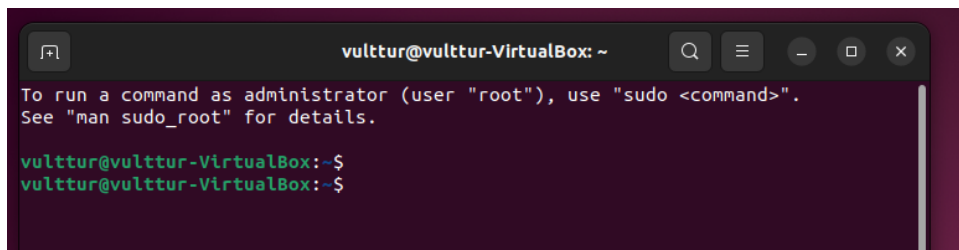
# TRABALHO 1 BANCO DE DADOS 2

## Prática de Laboratório – Comandos Linux – Nível Básico

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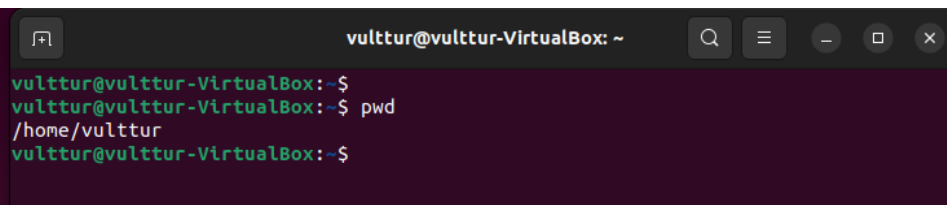
Matricula: 12021BSI263

1.



```
vulttur@vulttur-VirtualBox: ~  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
vulttur@vulttur-VirtualBox:~$  
vulttur@vulttur-VirtualBox:~$
```

2.



```
vulttur@vulttur-VirtualBox: ~  
vulttur@vulttur-VirtualBox:~$  
vulttur@vulttur-VirtualBox:~$ pwd  
/home/vulttur  
vulttur@vulttur-VirtualBox:~$
```

3.



```
vulttur@vulttur-VirtualBox: ~  
vulttur@vulttur-VirtualBox:~$  
vulttur@vulttur-VirtualBox:~$ pwd  
/home/vulttur  
vulttur@vulttur-VirtualBox:~$ ls  
'Área de Trabalho'  Downloads  Modelos    Público    Vídeos  
Documentos          Imagens    Música      snap  
vulttur@vulttur-VirtualBox:~$
```

3.2.

```

Atividades Terminal 10 de abr 20:39
vultur@vultur-VirtualBox: ~
LS(1) User Commands LS(1)
NAME
ls - list directory contents
SYNOPSIS
ls [OPTION]... [FILE]...
DESCRIPTION
list information about the FILES (the current directory by default).
Sort entries alphabetically if none of -ctuvSUX nor --sort is speci-
fied.
Mandatory arguments to long options are mandatory for short options
too.
-a, --all
do not ignore entries starting with .
-A, --almost-all
do not list implied . and ..
--author
with -l, print the author of each file
-b, --escape
print C-style escapes for nongraphic characters
--block-size=SIZE
with -l, scale sizes by SIZE when printing them; e.g.,
--block-size=M; see SIZE format below
-B, --ignore-backups
do not list implied entries ending with ~
-c with -lt: sort by, and show, ctime (time of last modification of
file status information); with -l: show ctime and sort by name;
otherwise: sort by ctime, newest first
-C list entries by columns
--color[=WHEN]
colorize the output; WHEN can be 'always' (default if omitted),
'auto', or 'never'; more info below
Manual page ls(1) line 1 (press h for help or q to quit)

```

4.

```

Atividades Terminal 10 de abr 20:43
vultur@vultur-VirtualBox: ~/Downloads
vultur@vultur-VirtualBox: $ pwd
/home/vultur
vultur@vultur-VirtualBox: $ ls
Área de Trabalho Documentos Downloads Imagens Modelos Musica Público snap Vídeos
vultur@vultur-VirtualBox: $ cd Downloads/
vultur@vultur-VirtualBox: ~/Downloads $ pwd
/home/vultur/Downloads
vultur@vultur-VirtualBox: ~/Downloads $ ls
vultur@vultur-VirtualBox: ~/Downloads $

```

5.

```

Atividades Terminal 10 de abr 20:44
vultur@vultur-VirtualBox: ~/Downloads
vultur@vultur-VirtualBox: ~/Downloads $

```

6.

```

Atividades Terminal 10 de abr 20:47
vultur@vultur-VirtualBox: ~/Downloads
vultur@vultur-VirtualBox: ~/Downloads $ clear screen
Usage: clear [options]
Options:
-T TERM use this instead of $TERM
-V print curses-version
-x do not try to clear scrollbar
vultur@vultur-VirtualBox: ~/Downloads $

```

7.

```
vulttur@vulttur-VirtualBox: ~/Downloads
'Área de Trabalho' Downloads Modelos Público Vídeos
Documentos      Imagens  Música  snap
vulttur@vulttur-VirtualBox:~$ cd Downloads/
vulttur@vulttur-VirtualBox:~/Downloads$ ping www.dropbox.com
PING www-env.dropbox-dns.com (162.125.5.18) 56(84) bytes of data.
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=1 ttl=50 time=141 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=2 ttl=50 time=158 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=3 ttl=50 time=175 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=4 ttl=50 time=129 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=5 ttl=50 time=207 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=6 ttl=50 time=230 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=7 ttl=50 time=150 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=8 ttl=50 time=128 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=9 ttl=50 time=195 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=10 ttl=50 time=130 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=11 ttl=50 time=137 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=12 ttl=50 time=158 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=13 ttl=50 time=179 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=14 ttl=50 time=195 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=15 ttl=50 time=192 ms
^[[p64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=16 ttl=50 time=215 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=17 ttl=50 time=236 ms
64 bytes from 162.125.5.18 (162.125.5.18): icmp_seq=18 ttl=50 time=147 ms
```

8.

```
vulttur@vulttur-VirtualBox:~$ cd Downloads/
vulttur@vulttur-VirtualBox:~/Downloads$ wget https://www.dropbox.com/s/2kdb1j3b477ygyv/sample.tar.gz
--2023-04-10 21:04:38-- https://www.dropbox.com/s/2kdb1j3b477ygyv/sample.tar.gz
Resolvendo www.dropbox.com (www.dropbox.com)... 162.125.5.18, 2628:100:601d:18:a27d:512
Conectando-se a www.dropbox.com (www.dropbox.com)[162.125.5.18]:443... conectado.
A requisição HTTP foi enviada, aguardando resposta... 302 Found
Localização: /s/raw/2kdb1j3b477ygyv/sample.tar.gz [redirecionando]
--2023-04-10 21:04:39-- https://www.dropbox.com/s/raw/2kdb1j3b477ygyv/sample.tar.gz
Reaproveitando a conexão existente para www.dropbox.com:443.
A requisição HTTP foi enviada, aguardando resposta... 302 Found
Localização: https://uc2243e1f06925dcaff30f44da07.dl.dropboxusercontent.com/cd/0/inline/B58tXuxBgg_g_05G8pKYmp_2-pWrmB0e6dyOWMLzmpEru4S6ukQlgJAzELAuq
Z03CXDPLaw7NrLVYAngEhehCpP_pEzlaugexFXPMew-cnzeu0LwZ9KH0SE1foZPJo7QL9M3RZaPI3K60Ulvv_NA0eEgebKYyQdeLrRF-nJtbcw/file# [redirecionando]
--2023-04-10 21:04:39-- https://uc2243e1f06925dcaff30f44da07.dl.dropboxusercontent.com/cd/0/inline/B58tXuxBgg_g_05G8pKYmp_2-pWrmB0e6dyOWMLzmpEru4S6u
kQlgJAzELAuqZ03CXDPLaw7NrLVYAngEhehCpP_pEzlaugexFXPMew-cnzeu0LwZ9KH0SE1foZPJo7QL9M3RZaPI3K60Ulvv_NA0eEgebKYyQdeLrRF-nJtbcw/file
Resolvendo uc2243e1f06925dcaff30f44da07.dl.dropboxusercontent.com (uc2243e1f06925dcaff30f44da07.dl.dropboxusercontent.com)... 162.125.5.15, 2628:100:6
01d:15:a27d:50f
Conectando-se a uc2243e1f06925dcaff30f44da07.dl.dropboxusercontent.com (uc2243e1f06925dcaff30f44da07.dl.dropboxusercontent.com)[162.125.5.15]:443... c
onectado.
A requisição HTTP foi enviada, aguardando resposta... 302 Found
Localização: /cd/0/inline/B580MIcmz22LscKp5W6p0QAs2PTqJr7K05SUzqQV1znUoVSGPofWFFtN-clUQ80rmZnXbk2abon0qF5x63bTce7QM_yhk8M4XjzT3lpgH4ldUdXRo2C_V8nIE
8CFXuh8Dg8pWmtLB3NP0cdyQW72KCFaxFvgTboGKZ68BPuQHfuaB0GfXq7JPPqfydbF80kccRn-p2lpOnlw8lJrprltkoN3Jsq-WL47HFTFCvbf10aR90bQGDmNavSepS508N0LEBge5n4mIGwQ
VQb4WtRuDL8ltznH02oQ20JrC2VYVMcczUqnhUY2V_oa6AhszszmugZgxBYCXNwc5SGEahBe6515Jzo02g8y25Yy9YRqJr436KzF15ta94Q9H0EqC206B_5vQFe6ZutjWuNfifnyvac4W4GxjHX2vFMc
3B8dvFQ/file [redirecionando]
--2023-04-10 21:04:42-- https://uc2243e1f06925dcaff30f44da07.dl.dropboxusercontent.com/cd/0/inline/B580MIcmz22LscKp5W6p0QAs2PTqJr7K05SUzqQV1znUoV
SGPofWFFtN-clUQ80rmZnXbk2abon0qF5x63bTce7QM_yhk8M4XjzT3lpgH4ldUdXRo2C_V8nIE8CFXuh8Dg8pWmtLB3NP0cdyQW72KCFaxFvgTboGKZ68BPuQHfuaB0GfXq7JPPqfydbF80kccR
n-p2lpOnlw8lJrprltkoN3Jsq-WL47HFTFCvbf10aR90bQGDmNavSepS508N0LEBge5n4mIGwQVQb4WtRuDL8ltznH02oQ20JrC2VYVMcczUqnhUY2V_oa6AhszszmugZgxBYCXNwc5SGEahBe6515J
z02g8y25Yy9YRqJr436KzF15ta94Q9H0EqC206B_5vQFe6ZutjWuNfifnyvac4W4GxjHX2vFMc3B8dvFQ/file
Reaproveitando a conexão existente para uc2243e1f06925dcaff30f44da07.dl.dropboxusercontent.com:443.
A requisição HTTP foi enviada, aguardando resposta... 200 OK
Tamanho: 2047076 (2.0M) [application/octet-stream]
Salvando em: 'sample.tar.gz'
sample.tar.gz 100%[=====] 1,95M 859KB/s em 2,3s
2023-04-10 21:04:45 (859 KB/s) - 'sample.tar.gz' salvo [2047076/2047076]
```

```
sample/proteinas/Rv3856c
sample/proteinas/Rv3857c
sample/proteinas/Rv3858c
sample/proteinas/Rv3859c
sample/proteinas/Rv3862c
sample/proteinas/Rv3879c
sample/proteinas/Rv3880c
sample/proteinas/Rv3881c
sample/proteinas/Rv3882c
sample/proteinas/Rv3883c
sample/proteinas/Rv3884c
sample/proteinas/Rv3885c
sample/proteinas/Rv3886c
sample/proteinas/Rv3887c
sample/proteinas/Rv3888c
sample/proteinas/Rv3889c
sample/proteinas/Rv3890c
sample/proteinas/Rv3891c
sample/proteinas/Rv3892c
sample/proteinas/Rv3893c
sample/proteinas/Rv3894c
sample/proteinas/Rv3895c
sample/proteinas/Rv3896c
sample/proteinas/Rv3897c
sample/proteinas/Rv3898c
sample/proteinas/Rv3899c
sample/proteinas/Rv3900c
sample/proteinas/Rv3901c
sample/proteinas/Rv3902c
sample/proteinas/Rv3903c
sample/proteinas/Rv3904c
sample/proteinas/Rv3905c
sample/proteinas/Rv3906c
sample/proteinas/Rv3907c
sample/proteinas/Rv3916c
sample/proteinas/Rv3917c
sample/proteinas/Rv3918c
sample/proteinas/Rv3919c
sample/proteinas/Rv3920c
sample/proteinas/Rv3921c
sample/proteinas/Rv3922c
sample/proteinas/Rv3923c
sample/proteinas/Rv3924c
```

9. `vulttur@vulttur-VirtualBox: ~/Downloads$`

```
sample/proteinas/Rv3923c
sample/proteinas/Rv3924c
vulttur@vulttur-VirtualBox:~/Downloads$ ls
sample  sample.tar.gz
vulttur@vulttur-VirtualBox:~/Downloads$ cd sample
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

10.

Atividades Terminal 10 de abr 21:10

vulttur@vulttur-VirtualBox: ~/Downloads/sample

andromeda.jpg pan-genome-size.pdf Poster.pdf **proteinas** sequence.fasta SOAPdenovo2.pdf

vulttur@vulttur-VirtualBox:~/Downloads/sample\$

11.

```
>Cp1002_0126a
MHFKTRMSLFCTATTAATSLAVASLQPAAAVEQPSNTIVSTIMLPTKATVTKTFTVSSTKGTARADYSSN
SITVQPGDTISVKIHSQGGYTEFSELTEFVPSVGR LHTEITFKEGDSGPHPLKVAGWNATSQADRVTFR
TNDGPKAITLDTTLEYTYTVGVRATGDPSTRFQLSSSDSNTVFTSASGPKIHVKKTLPSHLSGAFPGAI
FDSLTNLLSPIRLALNIL
>Cp1002_1802
MLFPSRFQGTFLKPLITAALAVFCVGFTPATAQVIPYTDPDGIFYTIPSAENTTPGTVLSQRDVPMPVLD
VLVKMKRIAYTSTHPNGFSTPVTGAVLLPTAPWRGPGPRPVALLAPGTQAGDSCAPSKLLTMGGEYEMF
SAAALLNRGWTVAVTDYQGLGTPGNHTYMNRKAQGAALLDLGRAITTLNLPDVNNHTPIIPWGSQGGGA
SAAAEMHRAYPDVNVVLAYAGGVANLLSVSSLEGTALTGALGYVITGMYEIPYIPEIREPIHNFNLNR
GQVNLDTSRDCLPESLLTMPLPDTSLITVSGQRLTSLISDDVFQRAISEQQIGLTAPDIPVFAQGLND
GIIPAEQARIMVNGWSQGADVTYWEDPSPALDKLSGHIHVLAASFPAVEWAEQRLAALGQPTP
```

12. `vulttur@vulttur-VirtualBox: ~/Downloads/sample$`

12.2.

```

0000531734 00000 n
0000531940 00000 n
0000532319 00000 n
0000532565 00000 n
0000543565 00000 n
0000543589 00000 n
0000543787 00000 n
0000544347 00000 n
0000544758 00000 n
0000553625 00000 n
0000553648 00000 n
0000553845 00000 n
0000554253 00000 n
0000554510 00000 n
0000564816 00000 n
0000564840 00000 n
0000565033 00000 n
0000565593 00000 n
0000565993 00000 n
0000580548 00000 n
0000580572 00000 n
0000580775 00000 n
0000581232 00000 n
0000581541 00000 n
0000605409 00000 n
0000605433 00000 n
0000605626 00000 n
0000606254 00000 n
0000606725 00000 n
0000606868 00000 n
0000607712 00000 n
0000607771 00000 n
0000608140 00000 n
0000608289 00000 n
trailer
<</Size 133/Root 131 0 R
/Info 132 0 R
/ID [ <5F6A86BB2120C51092D38C7F8FB9F1CA>
<5F6A86BB2120C51092D38C7F8FB9F1CA> ]
/DocChecksum /09C6A8401D20BC6EFA9BA21C12C34EED
>>
startxref
608584
%%EOF
vulttur@vulttur-VirtualBox:~/Downloads/sample$

```

13.1.

```

vulttur@vulttur-VirtualBox:~/Downloads/sample
ls -l
total 12
-rw-r--r-- 1 vulttur vulttur 4096 Apr 10 21:16 andromeda.jpg
-rw-r--r-- 1 vulttur vulttur 4096 Apr 10 21:16 pan-genome-size.pdf
-rw-r--r-- 1 vulttur vulttur 4096 Apr 10 21:16 Poster.pdf
-rw-r--r-- 1 vulttur vulttur 4096 Apr 10 21:16 proteins
-rw-r--r-- 1 vulttur vulttur 4096 Apr 10 21:16 sequence.fasta
-rw-r--r-- 1 vulttur vulttur 4096 Apr 10 21:16 SOAPdenovo2.pdf

```



13.3.

```

GQVATAVPDERSHAEPCLGYVLYAPPSAVPRAQRFPTAPVSADAVLLTSMGIERGQADD
DLPHSLIARVIEELVRRGVRALEAFGRTPAATDLQNP GAVTPDVRPVLEALGCCVEHCI
IDANFLMDVGVVVAPHYPFRLRLLELDKGLGWKAEEAALERLLENARLQEPIAAGSTA
GNTS
>Rv3917c
MTQPSRRKGGLGRGLAALIPTGPADGESGPPTLGPRMGSATADVIGGPVDPDTSVMGAIY
REIPPSAIEANPRQPRQVFDEEALAEVHSIREFGLLQPIVVVRLAGSQTGVRYQIVMGE
RRWRAAQEAGLATTPAIVRETGDDNLLRDALLENITHRVQLNPLEEAAAYQQLLDEFQVTH
DELAARIGRSRPLITNMIRLLKLPIPVQRRVAAGVLSAGHARALLSL EAGPEAQEELASR
IVAEGLSVRATEETVTLANHEANRQAHHS DATTAPPPRRKPIQMPGLQDVAERLSTTFDT
RVTVSLGKRKGKIVVEFGSVDDLARIVGLMTT DGRDKGLHRDAL
>Rv3918c
MSAPWGPVAAGPSALVRSGQASTIEPFQREMTPTPTPEAAHNPTMNVSRETSTEFDTPI
GAAAEERAMRVLHTTHEPLQRPGRRRVLTIANQKGGVGKTTTAVNIAAALAVQGLKTLVID
LDPOGNASTALGITDRQSGTPSSYEMLICEVSLHTALRRSPHSERLFCIPATIDLAGAEI
ELVSMVAERENRLRTALAALDNFDFDYFVDCPPSLGLLTINALVAAPEVMPIQCEYYAL
EGVSQLMRNIEMVKAHLNPQLEVTTVILTMYDGRTKLADQVADDEVRYFGSKVLRTVIPR
SVKVS EAPGYSMTIIDYDPGSRGAMSYLDASRELAERDRPPSAKGRP
>Rv3919c
MSPIEPAASAI FGPRLLGLARRYAEALAGPGVERGLVGPREVGRLLWRHLLNCAVIGELLE
RGDRVVVDIGSGAGLPGVPLAIARPD LQVVLLEPLLRRTESLREMTDLGVAVEIVRGRAE
ESWVQDQLGGS DAAVSRAVAALDKLTKWSMPLIRPNGRMLAIKGERAHDEVREHRRVMIA
SGAVDVRVVTCGANYL RPPATVVFARRGKQIARGSARMA SGGTA
>Rv3920c
MADADTTDFDVAEAPGGGVREDTATDADEADDQEERLVAEGE IAGDYLEELL DVLDFDG
DIDLVEGNRAVVSIDGSDDLNKLVGRRGEVLDALQELTR LAVHQKTGVR SRLMLDIARW
RRRRREELAA LADEVARRVAETGDREELVPMTPFERKIVHDAVAAPGVHSEGESEVPER
RVVVL RD
>Rv3921c
MSLLDFDFS LDIYYPVSWIMWVYRLF AFVLGPSNFFAWALSVMFLVFTLRALLYKPFV
RQIRTTTROMQELQPQIKALQKQYKGDORMALEMQKLQREHGFNPILGCLPMLAQIPVFL
GLYHVLRSFNRTTGGFGPHLSVIENRLTGNVVFSPVDVGHFLDANLFGAPIGAYMTQRS
GLDAFVDFS RPALIAVGVPVMILAGIATYFNSRAS IARQSAEAAANPQTAMMNKLALYVF
PLGVVVGPFPLPLAIILYWFSSNNIWTFGQQHYVFGMIEKEEEAKKQEA VRRRAANAPAG
AKPKRSPKTAPATNAAPTEAGD TDDGAESDASTERPADTSNPARRNSGPSARTPRPGVR
PKKRRR
>Rv3922c
MSLSRQSCGRVVRVTGRASARGLIFVIQVYRHMLSPLRPASCRFVPTCSQYAVDALTEYG
LLRGSWLT MIRLAKCGPWHRGGWDP IPEGLTTGRSCQTDVDGANDWNPASKRGERESFV
>Rv3923c
MLRARNRMRRSADFETT VKHGMRTVRS DMVVYWRGSGGGPRVGLIIAKSVGSAVERHRV
ARRLRHVAGSIVKELHPSDHVVIRALPSSRHVSSARLEQQ LRCGLRRAVELAGSDR
>Rv3924c
MTKGKRTFQPNRRRRARVHGFRLMRTRAGRSIVSSRRRKGRRTL SA
vulttur@vulttur-VirtualBox:~/Downloads/sample$

```

14.

```

andromeda.jpg mt.fasta pan-genome-size.pdf Poster.pdf proteinas sequence.fasta SOAPdenovo2.pdf
vulttur@vulttur-VirtualBox:~/Downloads/sample$ head -n 10 mt.fasta
>Rv0001
MTDDPGSGFTTVNNAVVS ELNGDPKVDGPPSSDANLSAPLTQQRAWLNLVQPLTIVEGF
ALLSVPS SFVQNEIERHLRAPITDALSRRLGHQIQLGVRIPATPDEADDTPVPS ENPA
TTSPDTTTTND EIDDSAAARGDNQHSWPSYF TERPHNTDSATAGVTS LNRRYTFDTFVIG
ASNRFHAAALAI AEAPARAYNPLFIWGESGLGKTHLLHAAAGNYAQR LFPGMRVKYVSTE
EFTNDFINSLRDDRKVAFKRSYRDVDVLVDDIQFIEGEGIQEEFFHTFNTLHNANKQI
VISSDRPPKQLATLEDRLRTRFEWGLITDVQPPELETRAILRKKQMERLAVPDDVLEL
IASSIERNIRELEGALIRVTA FASLNKTPIDKALAEIVLRDLIADANTMQISAATIMAAT
AEYFDTTVEELRGPGKTRALAQSRQIAMYLCRELTDLSLPKIGQAFGRDHTVMYAQRKI
LSEMAERREVFHDVKELTTRIRQRSKR
vulttur@vulttur-VirtualBox:~/Downloads/sample$ tail -n 10 mt.fasta
AKPKRSPKTAPATNAAPTEAGD TDDGAESDASTERPADTSNPARRNSGPSARTPRPGVR
PKKRRR
>Rv3922c
MSLSRQSCGRVVRVTGRASARGLIFVIQVYRHMLSPLRPASCRFVPTCSQYAVDALTEYG
LLRGSWLT MIRLAKCGPWHRGGWDP IPEGLTTGRSCQTDVDGANDWNPASKRGERESFV
>Rv3923c
MLRARNRMRRSADFETT VKHGMRTVRS DMVVYWRGSGGGPRVGLIIAKSVGSAVERHRV
ARRLRHVAGSIVKELHPSDHVVIRALPSSRHVSSARLEQQ LRCGLRRAVELAGSDR
>Rv3924c
MTKGKRTFQPNRRRRARVHGFRLMRTRAGRSIVSSRRRKGRRTL SA
vulttur@vulttur-VirtualBox:~/Downloads/sample$

```

15.

```

Atividades Terminal 10 de abr 21:23
vulttur@vulttur-VirtualBox: ~/Downloads/sample

andromeda.jpg mt.fasta pan-genome-size.pdf Poster.pdf proteinas sequence.fasta SOAPdenovo2.pdf
vulttur@vulttur-VirtualBox:~/Downloads/sample$ cp mt.fasta mt2.fasta
vulttur@vulttur-VirtualBox:~/Downloads/sample$ mv mt2.fasta ../
vulttur@vulttur-VirtualBox:~/Downloads/sample$ rm mt.fasta
vulttur@vulttur-VirtualBox:~/Downloads/sample$

```

16.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ mkdir mtv2
vulttur@vulttur-VirtualBox:~/Downloads/sample$ mv ../mt2.fasta mtv2
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

17.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ mkdir mtv2
vulttur@vulttur-VirtualBox:~/Downloads/sample$ mv ../mt2.fasta mtv2
vulttur@vulttur-VirtualBox:~/Downloads/sample$ rm mtv2
rm: não foi possível remover 'mtv2': É um diretório
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

18.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ history
1  ls
2  cd Downloads/
3  ping www.dropbox.com
4  ls
5  cd Downloads/
6  wget https://www.dropbox.com/s/2kdb1j3b477ygyv/sample.tar.gz
7  cls
8  tar -xvf sample.tar.gz
9  ls
10 cd sample
11 cls
12 alias cls='clear; ls'
13 cls
14 cat sequence.fasta
15 cat Poster.pdf
16 cls
17 cat sequence.fasta
18 cls
19 ls proteínas
20 cat mt.fasta
21 cat proteínas/* > mt.fasta
22 cat mt.fasta
23 cls
24 head -n 10 mt.fasta
25 tail -n 10 mt.fasta
26 cls
27 cp mt.fasta mt2.fasta
28 mv mt2.fasta ../
29 rm mt.fasta
30 clear
31 mkdir mtv2
32 mv ../mt2.fasta mtv2
33 rm mtv2
34 clear
35 history
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

OBS: Acho que apareceu menos comandos pois eu tive que reiniciar a VM no meio do processo professor, peço desculpas se esse não foi o resultado desejado.

Prática de Laboratório – Comandos Linux (Avancado)

1.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ ls
andromeda.jpg  pan-genome-size.pdf  proteinas      SOAPdenovo2.pdf
mtv2           Poster.pdf           sequence.fasta
vulttur@vulttur-VirtualBox:~/Downloads/sample$ wc sequence.fasta
13 12 681 sequence.fasta
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

2.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ head -n 1 sequence.fasta | wc
1      1      14
vulttur@vulttur-VirtualBox:~/Downloads/sample$ head -1 sequence.fasta
>Cp1002_0126a
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

3.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ ls
andromeda.jpg  mtv2  pan-genome-size.pdf  Poster.pdf  proteinas  sequence.fasta  SOAPdenovo2.pdf
vulttur@vulttur-VirtualBox:~/Downloads/sample$ grep AKAP proteinas/*
proteinas/Rv0338c:CQSQCPAWNTGKPLSPKLVIMDLRDHWMAKAPVILGQKDSAGGEAGHQEHHPVESPESGFG
proteinas/Rv0425c:AAGLLSGYLLARKVVDQAQPRPAPAHEWHAMSVQVRKALPSPDEQAPAKAPSPSPYPARA
proteinas/Rv0540:MSCLPVSVLVVAKEPEPRVKTRLAAAIIGDKVAADIAAAALDITLDAVAAPVTARAVAL
proteinas/Rv0706:PAKQDRSAKSSRRARTEASKASKVGATAPAKKAAAKAPAKKAPASSGVKKTPAKKAPAK
proteinas/Rv1425:KADVGNQVSSMTASLATHIEDPAKRLAAIHESITLSAKEMAKAPSAHQIMGLTETTPPGLL
proteinas/Rv1426c:ATLPTPEMRSRGRNPLRTAMARRRYVETTNVVCYGPYGRANLADIWRRRDLPRDAPAPV
proteinas/Rv1484:MTGLLDGKRILVSGIITDSSIAFHIAARVAQEQAQLVLTGFDRRLIQRITDRLPAKAPL
proteinas/Rv1530:VAALTEQTGGLADVVDVTAKAPAAFAQAIALARPAGTVVAVAGTRGVGSGAPGFSPDVVV
proteinas/Rv1985c:GFTAAAAAKAPSLAWNRRDGLQDMLVRKAFRRAITRPTHFVPTTEGFTAAARAGLGWGMF
proteinas/Rv2164c:QTSPLSPFDRPAPAKNTSQAKARAKARKAKAPKLVRPPTMERLAARLTSIDLPRPTLAN
proteinas/Rv2215:APYVTPLVRKLASENNIDLAVGTGTGVGGRIRKQDVLAAAEQKKRAKAPAPAAQAAAAAPA
proteinas/Rv2448c:DFLAKAPDAVIAKIRDRQRVAQQETERITTRLAALQ
proteinas/Rv2536:VFLVGIVGVAVGRWLVDRLAKAPVRHHGLAAEHERAADTDVFSAVRADDSPTEGEMQVAQ
proteinas/Rv2703:ASAPQDTTSTIPKRKTRAAAKSAAAKAPSARGHATKPRAPKDAQHEAATDPEDALDSVE
proteinas/Rv2780:VPGAKAPKLVSNSLVAHMKPGAVLVDIAIDQGGCFEGSRPTTYDHTFAVHDTLFYCVAN
proteinas/Rv2973c:LGMVVVDEQHRFGVEQRDQLAKAPAGITPHLLVMTATPIRPTVALTIVYGDLETSTLREL
proteinas/Rv3099c:LDEIAATMGFVVGKLAKAPDGSRVLLLELTGPLSRIRVSVVGRARVVDVDFGGPAPTATIR
proteinas/Rv3269:MAIQVFLAKATTTVITGLAGVTAYEILKKAAAKAPLRQTAVSAAALGLRGTRKAEAEAES
proteinas/Rv3456c:VTSEANRARRVAAAQAKAKKAAAMPTEESEAKPAEEGDVVGASEPDAKAPEPPAEAPEN
proteinas/Rv3691:LAKAPGDLLLVAPTSRTRTALTPQLRTAAASPFNSQPNCITLREANRAGSVQWGPSTDTYQA
proteinas/Rv3808c:YEALKNTDCQQILFMDDDIRLEPDSILRVLAMHRFAKAPMLVGGQMLNLQEPSHLHIMGE
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

4.



```
grep: mt.fasta: Arquivo ou diretório inexistente
vulttur@vulttur-VirtualBox:~/Downloads/sample/mtv2$ grep '>' mt2.fasta
>Rv0001
>Rv0002
>Rv0003
>Rv0004
>Rv0005
>Rv0006
>Rv0007
>Rv0008c
>Rv0009
>Rv0010c
>Rv0011c
>Rv0012
>Rv0013
>Rv0014c
>Rv0015c
>Rv0016c
>Rv0017c
>Rv0018c
>Rv0019c
>Rv0020c
>Rv0021c
>Rv0022c
>Rv0023
>Rv0024
>Rv0025
>Rv0026
>Rv0027
>Rv0028
>Rv0029
>Rv0030
>Rv0031
>Rv0032
>Rv0033
>Rv0034
>Rv0035
>Rv0036c
>Rv0037c
>Rv0038
>Rv0039c
>Rv0040c
>Rv0041
>Rv0042c
>Rv0043c
>Rv0044c
```

5.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ ls
andromeda.jpg  mtv2  pan-genome-size.pdf  Poster.pdf  proteinas  sequence.fasta  SOAPdenovo2.pdf
vulttur@vulttur-VirtualBox:~/Downloads/sample$ find -mtime +2
./SOAPdenovo2.pdf
./sequence.fasta
./proteinas
./proteinas/Rv3805c
./proteinas/Rv1624c
./proteinas/Rv2675c
./proteinas/Rv1048c
./proteinas/Rv3837c
./proteinas/Rv1666c
./proteinas/Rv1563c
./proteinas/Rv3252c
./proteinas/Rv0318c
./proteinas/Rv1201c
./proteinas/Rv1049
./proteinas/Rv0865
./proteinas/Rv2540c
./proteinas/Rv1881c
./proteinas/Rv3907c
./proteinas/Rv2732c
./proteinas/Rv1030
./proteinas/Rv0447c
./proteinas/Rv2667
./proteinas/Rv0592
./proteinas/Rv0468
./proteinas/Rv2674
./proteinas/Rv3297
./proteinas/Rv2446c
./proteinas/Rv2213
./proteinas/Rv1064c
./proteinas/Rv2614c
./proteinas/Rv1200
./proteinas/Rv2389c
./proteinas/Rv3022c
./proteinas/Rv0729
./proteinas/Rv2508c
./proteinas/Rv2340c
./proteinas/Rv2684
./proteinas/Rv3599c
./proteinas/Rv1851
./proteinas/Rv1891
./proteinas/Rv2847c
./proteinas/Rv1370c
```

6.1.

```
./Poster.pdf
./andromeda.jpg
./pan-genome-size.pdf
vulttur@vulttur-VirtualBox:~/Downloads/sample$ find . -mtime -1
.
./mtv2
./mtv2/mt2.fasta
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

6.2.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ find . -size +500k
./Poster.pdf
./mtv2/mt2.fasta
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

6.3.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ find . -size +500k -ls
525301  600 -rw-rw-r--  1 vulttur vulttur  611453 mai  5  2014 ./Poster.pdf
529447 1364 -rw-rw-r--  1 vulttur vulttur 1394290 abr 10 21:23 ./mtv2/mt2.fasta
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

6.4.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ find . -name '*.pdf' -ls
525204  376 -rw-rw-r--  1 vulttur vulttur  382965 jan  7  2014 ./SOAPdenovo2.pdf
525301  600 -rw-rw-r--  1 vulttur vulttur  611453 mai  5  2014 ./Poster.pdf
525333  316 -rw-rw-r--  1 vulttur vulttur  322808 feb 24  2014 ./pan-genome-size.pdf
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

6.5.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ find . -perm -o=x
.
./proteinas
./mtv2
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

6.6.

6.7.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ find . -perm -g=w -type d
.
./proteinas
./mtv2
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

6.8.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ find ./proteinas -size +1k -type f -ls
527563      4 -rw-rw-r--  1 vulttur  vulttur    3364 mai  5  2014 ./proteinas/Rv0355c
529120      4 -rw-rw-r--  1 vulttur  vulttur    1119 mai  5  2014 ./proteinas/Rv3370c
526992      4 -rw-rw-r--  1 vulttur  vulttur    1521 mai  5  2014 ./proteinas/Rv2935
526132      4 -rw-rw-r--  1 vulttur  vulttur    1261 mai  5  2014 ./proteinas/Rv1161
527371      4 -rw-rw-r--  1 vulttur  vulttur    1125 mai  5  2014 ./proteinas/Rv3795
526991      4 -rw-rw-r--  1 vulttur  vulttur    1866 mai  5  2014 ./proteinas/Rv2934
528507      4 -rw-rw-r--  1 vulttur  vulttur    1030 mai  5  2014 ./proteinas/Rv2381c
526146      4 -rw-rw-r--  1 vulttur  vulttur    1027 mai  5  2014 ./proteinas/Rv1183
525833      4 -rw-rw-r--  1 vulttur  vulttur    1244 mai  5  2014 ./proteinas/Rv0648
525586      4 -rw-rw-r--  1 vulttur  vulttur    1222 mai  5  2014 ./proteinas/Rv0194
527969      4 -rw-rw-r--  1 vulttur  vulttur    1261 mai  5  2014 ./proteinas/Rv1248c
529016      4 -rw-rw-r--  1 vulttur  vulttur    1082 mai  5  2014 ./proteinas/Rv3202c
529042      4 -rw-rw-r--  1 vulttur  vulttur    1075 mai  5  2014 ./proteinas/Rv3239c
528164      4 -rw-rw-r--  1 vulttur  vulttur    1080 mai  5  2014 ./proteinas/Rv1753c
527545      4 -rw-rw-r--  1 vulttur  vulttur    2250 mai  5  2014 ./proteinas/Rv0304c
527158      4 -rw-rw-r--  1 vulttur  vulttur    1547 mai  5  2014 ./proteinas/Rv3296
527512      4 -rw-rw-r--  1 vulttur  vulttur    1433 mai  5  2014 ./proteinas/Rv0236c
527422      4 -rw-rw-r--  1 vulttur  vulttur    1212 mai  5  2014 ./proteinas/Rv3910
526247      4 -rw-rw-r--  1 vulttur  vulttur    1187 mai  5  2014 ./proteinas/Rv1358
526144      4 -rw-rw-r--  1 vulttur  vulttur    1617 mai  5  2014 ./proteinas/Rv1181
526055      4 -rw-rw-r--  1 vulttur  vulttur    1263 mai  5  2014 ./proteinas/Rv1020
529388      4 -rw-rw-r--  1 vulttur  vulttur    1117 mai  5  2014 ./proteinas/Rv3823c
528874      4 -rw-rw-r--  1 vulttur  vulttur    2156 mai  5  2014 ./proteinas/Rv2940c
529102      4 -rw-rw-r--  1 vulttur  vulttur    2575 mai  5  2014 ./proteinas/Rv3343c
527245      4 -rw-rw-r--  1 vulttur  vulttur    1105 mai  5  2014 ./proteinas/Rv3512
528506      4 -rw-rw-r--  1 vulttur  vulttur    1720 mai  5  2014 ./proteinas/Rv2380c
528127      4 -rw-rw-r--  1 vulttur  vulttur    1201 mai  5  2014 ./proteinas/Rv1640c
528890      4 -rw-rw-r--  1 vulttur  vulttur    1155 mai  5  2014 ./proteinas/Rv2967c
528876      4 -rw-rw-r--  1 vulttur  vulttur    1652 mai  5  2014 ./proteinas/Rv2946c
529173      4 -rw-rw-r--  1 vulttur  vulttur    1266 mai  5  2014 ./proteinas/Rv3447c
527243      4 -rw-rw-r--  1 vulttur  vulttur    1941 mai  5  2014 ./proteinas/Rv3508
529106      4 -rw-rw-r--  1 vulttur  vulttur    3219 mai  5  2014 ./proteinas/Rv3347c
526638      4 -rw-rw-r--  1 vulttur  vulttur    1358 mai  5  2014 ./proteinas/Rv2006
526262      4 -rw-rw-r--  1 vulttur  vulttur    1142 mai  5  2014 ./proteinas/Rv1384
526368      4 -rw-rw-r--  1 vulttur  vulttur    1212 mai  5  2014 ./proteinas/Rv1547
528509      4 -rw-rw-r--  1 vulttur  vulttur    1447 mai  5  2014 ./proteinas/Rv2383c
526360      4 -rw-rw-r--  1 vulttur  vulttur    1067 mai  5  2014 ./proteinas/Rv1536
527698      4 -rw-rw-r--  1 vulttur  vulttur    1125 mai  5  2014 ./proteinas/Rv0631c
529373      4 -rw-rw-r--  1 vulttur  vulttur    1771 mai  5  2014 ./proteinas/Rv3800c
528052      4 -rw-rw-r--  1 vulttur  vulttur    1361 mai  5  2014 ./proteinas/Rv1450c
527242      4 -rw-rw-r--  1 vulttur  vulttur    1413 mai  5  2014 ./proteinas/Rv3507
528505      4 -rw-rw-r--  1 vulttur  vulttur    1495 mai  5  2014 ./proteinas/Rv2379c
```

6.9.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ find ./proteinas -size +1k -type f -exec cat > maiores.fasta {} \;
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

6.10.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ find ./proteinas -size +1k -type f -exec grep AKAP {} \;
AAGLLSGYLLARKVVDQAQPRPAPAHEWHMSVEQVRKALPSPDEQAPAKAPPSPYPARA
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

7.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ sed -i "s/ACP/<ACP>/g" maiores.fasta
vulttur@vulttur-VirtualBox:~/Downloads/sample$
```

8.1.

```
vulttur@vulttur-VirtualBox: ~/Downloads/sample$ grep "AK[ARP]P" proteinas/*
proteinas/Rv0338c: CQSQC PAWNTGKPLSPKLVIMDLRDHWMAKAPYILGQKDASAGGEAGHQEHHPVESGFG
proteinas/Rv0338c: MAAGAKRPGAKKAAPTPAAPAAPVKGGLGIAAGAKRPGAKKTPPPAPGLAEPAAQPQP
proteinas/Rv0425c: AAGLLSGYLLARKVVDAQAPRPAPAEHWHAMSVEQVRKALPSPDEQAPAKAPSPYPARA
proteinas/Rv0540: MSCLPVSVLVVAKAPEGRVKTRLAAATGDKVAADIAAAALLDTLDAVAAAPVTARAVAl
proteinas/Rv0573c: DTGYSYPVAVSDRIVGELARLRHADTAEAHPGSNVVGAKAKRP
proteinas/Rv0581: MDKTTVYLPDELKAAVKRAARQGVSEAQVIRESIRAAVGGAKPPPPRGGLYAGSEPIARR
proteinas/Rv0586: TLAALTTMTAAAKRPSDYRKLADAICSGDPTGAKKAAQD LLELANTSLMAVLVSQASRQ
proteinas/Rv0706: PAKDQRS AKSSRRRTEASKAASKVGATAPAKKAAAKAPAKKAPASSGVKKTPAKKAPAK
proteinas/Rv0949: MSVHATDAKPPGPSPADQLLDGLNPQQRQAVVHEGSPLLIVAGAGSGKTAVLTRRIAYLM
proteinas/Rv0983: GSGIILSAEGLILTNNHVIAAAAKPPLGSPPPKT VTFSDGR TAPFTVVGADPTSDIAVV
proteinas/Rv1024: MPEAKRPESKRRSPASRPGKAGDSVRGGRATKPSAKPSTPAPHASRKTTRTPHEHIVEPI
proteinas/Rv1215c: MARNPSPALDRPWRPGALRYALERVGVAKPPITVTDPPADVIERDVEVPTRDGTLLR
proteinas/Rv1425: KADVGNQVSSMTASLATHIEDPAKRLAAIHES TLSAKEMAKAPSAHQIMGLTETTPPGLL
proteinas/Rv1426c: ATLPT EPMRSRGRNRLPRTAMARRRYVETTNVVCYGPYGRANLADIWRRRDLPRDAKAPV
proteinas/Rv1483: MTATATEGAKPPFVFSRSLVTGGNRGIGLAIQR LAADGHKVAVTHRGS GAPKGLFGVEC
proteinas/Rv1484: MTGLLDGKRILVSGIITDSSIAFHIA RVAEQGAQLVLTGFDR LRLIQRITDRLPAKAPL
proteinas/Rv1530: VAALTEQTGGLADVVDVTAKAPAFAQAIALARPAGTVVAGTRGVGSGAPGFS PDVVV
proteinas/Rv1660: TWSLGEIGNLSSASVLHVL RDTIAKPPPSGSPGLMIAMGPGFCSELVLLRWH
proteinas/Rv1731: TDWAKRPVIERAAVIRRYRDLVIENREFLMDLLQAEAGKARWAAQEEIVDLIANANYAR
proteinas/Rv1985c: GFTAAAAAKAPSLAWNRRDGLQDMLVRKAFRRAITRPTHFVPTTEGFTAAARAGLGWGMF
proteinas/Rv2164c: QTSPLSPFDRPAPAKNTSQA KAKAKARKAKAPKLVRPTPMERLAARLTSIDL RPRTLAN
proteinas/Rv2183c: EQHPLLTVIADHSLALLEVIRAI VDDIDRS AKPPPEGPPGGGQTGASGGENTNGESMKS
proteinas/Rv2215: APYVTPLVRLKASENNIDL AGVTGTGVGGRIRKQDVLAAAEQKKRAKAPAPAAQAAAAPA
proteinas/Rv2448c: DFLAKAPDAVIAKIRDRQRVAQQUETERITTRLAALQ
proteinas/Rv2482c: LYAKRPLMSDAMLRVFFEAYEIVADVLRDAPPDIGPEELTELALGLGRQFVAQGRVRSSE
proteinas/Rv2528c: VDATAKRPSGDDVQVSPEDLIDAALAENRAAVEGEILKKAL TSP TGFEDLVIRLLEAMG
proteinas/Rv2536: VFLVGIVGVAVGRWLVD RQLAKAPVRHHGLAAEHERAADTDVFSAVRADDSP TGEMQVAQ
proteinas/Rv2703: ASAPQDTTSTIPKRKTRAAAKSAAAKAPSARGHATKPRAPKDAQHEAATDPEDALDSVE
proteinas/Rv2780: VPGAKAPKLVSNSLV AHMKPGAVLVDIAIDQGGCFEGSRPTTYDHPTFAVHDTL FYCVAN
proteinas/Rv2796c: MRWPTAWLLALVCVMATGCGPSGHGTRAGEEGLSPEKVAELENPLRAKPPLEDAKDQYR
proteinas/Rv2895c: PLTLDSFADLPTAKRPPVRTMTVRHVDAAAREIAVDIVLHGEHGVAGPWAAGAQRGQPIY
proteinas/Rv2935: LGGDSLMAISIAMAAANEGLTITPQDLYEYPTLASLTA AVDASFASSGLAKPPEAQNPA
proteinas/Rv2973c: LGMVVVDEQHRFGVEQRDQLRAKAPAGITPHLLVMTATPIPTVALTVYGDLETSLREL
proteinas/Rv2986c: VRKAATKAPAKKAAAKRPATKAPAKKATARRGRK
proteinas/Rv3099c: LDEIAATMGFVVGKLAKAPDGSRV LLELTGPLSR SIRSVSDGRARVVD DFGGPAPTATIR
proteinas/Rv3212: IQRIVPEPGVRPGSGARVLVVSQNN TAVYLPARSGAQPRVDVIDETGATVSSTLLAKPPS
proteinas/Rv3240c: DGS AQVQRNGGGAHKTPAGVPAGASRRERREAAARRQGRGAKPPKSVKKR
proteinas/Rv3254: GTWVLTTFGVADAKPPPTFDEMRLADKLLPARFTAALQAQPIGCPAFHAFPASRWRRY
proteinas/Rv3269: MAIQVFLAKATTTVITGLAGVTAYEILK KAAAKAPLRQTAVSAAALGLRGT RKEEAES
proteinas/Rv3424c: RHGLSRVVQCLGGCENKRHAYFRSISKTPHIRARGVPSCAVRTVGV DGAAKRPPKPIPVQ
proteinas/Rv3456c: VTSEANRARRVAAAQAKAKKAAAMPTEFESEAKPAFEEDVVGASEPDAKAPFEPPAFAPEN
```

```

vulttur@vulttur-VirtualBox:~/Downloads/sample$ grep "AK.P" proteinas/*
proteinas/Rv0014c: EGLSADLDVAVLKALAKNPENRYQTAEMRADLVRVHNGEPPEAPKVLTDARTSLLSSA
proteinas/Rv0060: ELLASTHWVATREGAKEPATAAAARVKWTKRKGRIYSDDRIGVALDRILMTA
proteinas/Rv0061: LLAHAVGQVAKTPSATRAIAFRHVRMLMRVRWICAGNRGRKHKRRCTTQYRSTQASKQLQH
proteinas/Rv0072: PRVSEGRSPSPKPDVAASSTMGRHLGDTVEVGARRLRVVGIVPNSTALAKIPNVFLTTEG
proteinas/Rv0126: ERDYMVAEYAKDPRMKANVGIARRRLAPLLDNDNRNQIELFTALLLSLPGSPVLVYDDEIGM
proteinas/Rv0147: AVRERVIREVPAGGMMVNLAFQVSTAKLPFGGVGASGMGAYHGRWGFEESHRKSVLTK
proteinas/Rv0156: LVLQVILFVAVVFGTLNVIGGFIVTDRLGMFKAKKPAPPAKPDORDEALR
proteinas/Rv0197: RVVLNEIAKDPGRSMIVIDPVVTD TAKMADFHLRVQPGCDACLAAALVQENLCNEA
proteinas/Rv0206c: VGGTPALELDSIHGLFAKMPMLMVILLTTTIVLMFLAFGSSVLPKATLMSALTIGSTMG
proteinas/Rv0213c: PGTPLYQAYSDAGYLTAKWPLGQWEFVDPEASRVYADVAVKAPDVGISFDEAEAYFLSR
proteinas/Rv0283: SSYALKDSGKTI SDTVQYYAVLPDGLQQISPLVLAAILRNNSYGLQQPPRLGADEVAKLP
proteinas/Rv0309: PNHWWSGDDNSPTFNSMQVCQKSCQPFSTADSENLIQIPQYKHSVVMGVNKAKVPCKGSAF
proteinas/Rv0338c: CQSQC PAWNTGKPLSPKLVIMDLRDHWMAKAPYILGQKQDASAGGEAGHQEHHVPESGFG
proteinas/Rv0338c: MAAGAKRPGAKKAAPTAAAPAAPAPVKGLGIAAGAKRPGAKKTTPPPAPGLAEPAAPQP
proteinas/Rv0353: MAKNP KDGESRTFLISVAELAGMHAQTLRTYDRLGLVSPRRTSGGRRYSLHDEVLLRQ
proteinas/Rv0363c: SGLGVKDMVTGAVALAEFTHVIAAKYPVNNALHTDHCPCDKLDSYVRPLLAISAQRVSKG
proteinas/Rv0370c: GVAETIDWVAALVALGVADLTAADSSPALASLGALAKTPDDRTQIRDAYQAFTECSHA
proteinas/Rv0372c: LVASTVRGASILDSDLDAERARVHTPVGLAIGAKTPAEIAVSIAELIATLRGGGPRG
proteinas/Rv0373c: TGFARDYIMVGEIAANRDGKILAIRSNVLADHGAFAQAAPAKYPAGFFGVFTGSVDIEA
proteinas/Rv0375c: CTVLDAVCLAKGPSGEREIAIDDLVGPYETALAHNEVLEVRIPLRHNTSSAYAKVERR
proteinas/Rv0425c: AAGLLSGYLLARKVVDQAAPRPAHEWHAMSVEQVRKALPSPDEQAPAKAPSPYPARA
proteinas/Rv0444c: AEQVLTAPDVRTVSRPLGAGTATVVFSDRDRNTGLVMNNVAPP SRGTVYQMWLLGGAKGP
proteinas/Rv0447c: MTVETSQTPSAIDS DRWPAVAKVPRGPLAAASAIANRLRLRTATHLRLVYSDGTAT
proteinas/Rv0462: TEQQARNEGVDVVVAKFPFTANAKAHGVGDPSPGVKLADAKHGELLGGHLVGHDAELL
proteinas/Rv0469: LEPGMTLLDIGCGWGGGLQRAIENYDNNVIGITLSRNQFEYSKAKLAKIPTERSVQVRLQ
proteinas/Rv0486: GVDLDVFRPGDRAARAALGLPVDERVVAFVGRIQPLKAPDIVLRAAAKLP GVRIVVAGG
proteinas/Rv0540: MSLCPVSVLVVAKAPEPGRVKTRLAAAIQKVAADIAAAALLDTLDVAAAAPVTARAVAL
proteinas/Rv0548c: TVGLQWAAEINAKSPQAQRMLKFAFNLLDDGLVGQQLFAGEATRLAYMTDEAVEGRDAFL
proteinas/Rv0573c: DTGYSYPVAVSDRIVGELARLRHADTAEAHPGSNVVGAKAKRP
proteinas/Rv0581: MDKTTVYLPDELKAAVKRAARQGVSEAQVIRESIKAAVGGAKPPRGGLYAGSEPIARR
proteinas/Rv0586: TLAALTTTMTAAAKRPSDYRKLADAICSGDPTGAKKAAQDLLELANTSLMAVLVSQASRQ
proteinas/Rv0663: MPQPRTHLPIPSAARTGLITYDAKDPDSTYPIEQLRPPAGAPNVLLILLDDVGF GASSA
proteinas/Rv0687: VALTNTLAIELGEFGIRVNSIHPYSVDTPMIEPEAMIQTFAKHPPGYVHSFPPMPLQPKGF
proteinas/Rv0706: PAKDQSAKSSRRARTEASKAASKVGATAPAKKAAAKAPAKKAPASSGVKKTAPKAPAK
proteinas/Rv0713: RVEVTGSLEGWDISAVRVGESSQTS DRPDNVIIITLKRAGKPLVFDLGICLVITLPTLAL
proteinas/Rv0753c: MTTQISHFIDGQRTAGQSTRSADVPDNTGQIQAKVPMAGKSDIDAASAVEAQKGWAA
proteinas/Rv0754: IDTAVPGPGLTALGQQQAQAIANALAKGPYAGIFDSQLIRTQQTAAPLANLLGMAPQVL
proteinas/Rv0768: VLKPA PDTPWCAALGEIIVEHTDFPPGVVNIIVTSSSHALGALLAKDP RVDMISFTGSTA
proteinas/Rv0809: MTDLAKGPGKDPGSRGITYASAGVDIEAGDRAIDLFKPLASKATRP EVRGGLGGFAGLFT
proteinas/Rv0817c: PFIPQAMREHYAEIKAFAVEHAGSGTATLEATMHSIDL SYASWLIRPD AKLPVGELES
proteinas/Rv0861c: VTMTDSERMMYATAEPEERYICSTVHTKIAVVKISILAKHPDEQTLVIGAYLDQDELGA
proteinas/Rv0892: LYQYSFAKNPNNTQMF SRGGEIQDYLRGIAERYGLRHRIRFGATTVVSARFDDGRWVLRD
proteinas/Rv0896: KRFFDGFPRNAHPMPVLSVVNALSAYYQDALDPMNGQVELSTIRLLAKLPTIAAYAYK
proteinas/Rv0931c: RVPPALDQVIAGMAKNPAERFMSAGDLAIAAHDALTTS EQHQATTILRRGDNATLLATP
proteinas/Rv0941c: MWAVSTA KSBTALATAVRTDPSVWTLTADGALDSSSSALIRDSI TRATI FOPSAYTVNV

```

8.2.

8.3.

```
proteinas/Rv3910:RPPEQVARAGRAKGPEVIDRPSENASFGAASGAELPRPVADELQLDAPAGRDPGPVSRPH
vulttur@vulttur-VirtualBox:~/Downloads/sample$ grep "AK\+P" proteinas/*
proteinas/Rv0006:LIELLDIDEIQAAIILDMQLRRLAALERQRIIDDLAKIEAETADLEDILAKPERQRGIVR
proteinas/Rv0033:TVGDVYTSVAVWFPETAKPAPLGKGT
proteinas/Rv0038:ETAVYNNVLPQWAKLAAKPKTMFIGGPVKRDAALCLAVLRVGADPEGVPGLRHVAGRLVMV
proteinas/Rv0048c:TSDPGAKPDGIAPVVLTPPRQLHSLGGLTGLLEQTRKRFODTMGYRLVIYPEYASLDRVD
proteinas/Rv0090:DLPLVRAAGFKVDQMTVIHALEKALAAKPSTLALITGMLAAYAVLQAVEGVGLWLLKRWG
proteinas/Rv0095c:RITKPEAGRSSAEAKP
proteinas/Rv0102:FVSVAEPVGFFAASLAGALCLGALIHVMTAKPEPDGLIDAAAFRIHLLAERVSGLWLGL
proteinas/Rv0103c:EAKPVRAYPASVVGTVVMDGRLVIEATAVGADTQFAAMVRLVEQAQTQKARAQLADH
proteinas/Rv0130:GTVQATVSTTVEVEGSAKPPACVAESIVRYVA
proteinas/Rv0156:LVLQVILFVAVVFGTLNVIGGFIVTDRMLGMFKAKKPAVPAKPDRDEALR
proteinas/Rv0165c:MIKHDVVVLTWPENNNKPPSPRQVPGNPGPTLKLASHVNAPLSAKPRSQPLRRAQ
proteinas/Rv0171:MRTLEPPNRMRIGLMGIVVALLVAVGQSFTSVPMFLAKPSYYGQFTDSGGLHKGDRVRI
proteinas/Rv0189c:MPQTDEAASVSTVADIKPRSRDVTGLEKAAARGMLRAVGMDDEDAKPQIGVASSWNE
proteinas/Rv0192:AGQDPTSFVGPPPPFRPPTFNPVDGAMVGVAKPIVINFVPIADRAMAESAIHISSIPPVP
proteinas/Rv0199:ATSVSENAGAKPQTVHWNRLDVSVDGKLMISRLESIR
proteinas/Rv0207c:GFAYFAKPKVDESDVDORDMLAHIDERYREGLAALVVASADGQAFRQPLEAVARSGTPVQ
proteinas/Rv0242c:VVGTPPEAAASTNERIAQRALEGFTRSLGKELRRGATTALVYLSAKPAATGLESTMR
proteinas/Rv0269c:LLMLAEELGPPQKAQAKPLIEIARAKTRAEAMAALDIWRDRYPGAAALLRPADVLVDGM
proteinas/Rv0291:GLNATEVVRRLTATAHARGRESSNIVGAGNLDAVAALTWQLPAEPGGGAAPAKPVADPPV
proteinas/Rv0338c:EAKPQPEPAAPPKQTDGDAAPAAPVKGLGIARGARPPCKR
proteinas/Rv0357c:QRDLCRAKPVYEELPGWVEDISGAREFDDLPAKARDYVLRLEQLAGAPVSCIGVPGREQ
proteinas/Rv0363c:PADAKPFDVFVHGGSGSLKSEIEEALRYGVVKMNVDTDTQYAFTRPIAGHMTNYDGVLK
proteinas/Rv0381c:VLIDVDASPTDPHAPHAKPEDIRFGLYGALAHPMESAALGSCGDMAHVDRVVSPLSAPA
proteinas/Rv0418:GGPNGVPVMADRTRHLIAKP
proteinas/Rv0419:DASGNPETGEVGINEETLSTLMELMGKIFSPKNPPTLSYQPAAGCPDAKPSPPAAYCPATN
proteinas/Rv0479c:FVTSSVTHPADGTVELKGLNNITAKPIVAGKGLELQIINFNTLGFSLPKETVQSTLNE
proteinas/Rv0483:INLSTENAEQYRSVAVGDPVEVTGSSIQLSYADGDIWDWVDWDTWVSMSALPPPAAKP
proteinas/Rv0533c:ELLTTGAAKPGDLALLIGYGAGLSYAAQVVRMPKG
proteinas/Rv0581:MDKTTVYLPDELKAAVKRAARQRGVSEAQVIREIRAAVGGAKPPPRGGLYAGSEPIARR
proteinas/Rv0606:TAKPSLRVLKRWNTVKDEVCVNAETGTVWVPECSKEAYADGIAGAVDAYWNNQRRACK
proteinas/Rv0610c:DGREYSGLELVRDIAPLVGGLSFDPEPWGSAFRPGALPELQNWARTVELEDAVAKPGPG
proteinas/Rv0629c:LHRLLGAKPGARFRQDRQNRPLPHNVIVDETSMVSLTLMARLAEAVRPGARLILVGDADQ
proteinas/Rv0631c:LDALDQTTSAVPRERILVTHPLQPFDRKNVTPGALLAKPFTFDPAALAAAQAAAGKRC
proteinas/Rv0677c:SGSGSYVNINYLDLDAKPQRIDGAALPWSLTLKTTAPSAAPNILAQGDGTSITCRITVDG
proteinas/Rv0725c:PAGTVVVEIDQPQVIDFKTTTLAGIGAKPTAIRRTVYIDLRADWPAALQAAGLDSTAPTA
proteinas/Rv0743c:KADHVDVAIGEMSDFHRSNGVYAEGVHIDTAILPNGWRDLVSWTVESSRPAKPRFLEPH
proteinas/Rv0770:AEADIIISITVFDDAQVSSVITADNGLATHAKPGTIVAIHSTIADTTAVDLAEKLKPGQIH
proteinas/Rv0776c:RAIEVYPHPATVALFRLPRALKYKAKPGRSVDLLKSELLRLMDGVEGLAQAGVRMQVAGQ
proteinas/Rv0799c:QKYVHDMASWESLSVTEQERVIGRTKLDDIELDDNAKPPANSHVALNVIDDDGTERKIVR
proteinas/Rv0822c:NYPRADHARREPELPGKQLTGSARVRPLRIRRTSPAPAKPAPNSGRRPMVLAARSLAALF
proteinas/Rv0836c:LKLHAWLDRSADHDYKDGPDALVHVWYAGDLRLYAKPDQWALRRHDFDLRTAAALLG
proteinas/Rv0846c:DGCDIAYPPYLINGRIPVAATSFKAKPQQRIRIRIINSAADTAFRIALAGHSMTVTHTDG
proteinas/Rv0862c:RGPDAKPYGALSDSLFSTAAPLDRRLLLGMLAELPAGAGVDASRASATLIWRRPRWARRL
proteinas/Rv0908:ATGSLTNGMEGLITANSVTGMVQETRAKOTLDKLIATIGAKPLVRRSGTRTRSTNEVY
```



8.4.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ grep "AK*P" proteinas/*
proteinas/Rv0001:MTDDPGSGFTTVWNAVSELNQDPKVDDGPSSDANLSAPLTQQRAWLNLVQPLTIVEGF
proteinas/Rv0001:ALLSVPSFVQNEIERHLRAPITDALSRRLGHQIQLGVRIPAPATDEADDTVPSENPA
proteinas/Rv0001:ASNRFHAHAALIAEAPARAYNPLFIWGESGLKTHLLHAAGNYAQRLLFGMRVKYVSTE
proteinas/Rv0003:IRVGTDRIVISTIVVNDGRECAVDLEIATGRVNKARLNRSSVRSTRDVGVLRAVLFAP
proteinas/Rv0003:DTLEVWDSRLAEHGAELVAARIDLNVQLAPEVKKAYQLLAPESRSASIGYRASMDVTGPS
proteinas/Rv0004:DGVLVIAESTAWATQLRIMQAQLLAKIAAAGVNDVVRSLKITGPAAPSWRKGPRIAGR
proteinas/Rv0005:MGKNEARRSALAPDHGTVVCDPLRRLNRMHATPEESIRIVAAQKKKAQDEYGAASITILE
proteinas/Rv0005:DGYESQVYEKSEPLGLKQGAPTKKTGSTVRFWADPAVFETTEYDFETVARRLQEMAFNL
proteinas/Rv0005:KGLTINLTDERVTQDEVVDEVSDVAEAPKSASERAAESTAPHKVKSRTFHYPGGLVDFV
proteinas/Rv0006:LIELLDIDEIQAAILDMQLRRLAALERQRIIDDLAKIEAEIADLEDILAKPERQRGIVR
proteinas/Rv0006:AFQPEERIAQVIQIRGYTDAPYLVLATRNGLVKSKLTDDFSNSRSGGIVAVNLRDNDLV
proteinas/Rv0007:MTAPNEPGALSKGDGPNADGLVDRGGHRAATGPGRIPDAGDPPPWQRAATRQSQAGHRQ
proteinas/Rv0007:PPPVSHPEGRPTNPPAADARLNRFISGASAPVTGPAAAVRTPQDPDASLGCDCGSPA
proteinas/Rv0007:AYASELPDLSGPTPRAPQRNPAPARPAEGGAGSRGDSAGSGSGRSITAESRDARVQLSA
proteinas/Rv0009:MADCDSVTNSPLATATLHTNRGDIKIALFGNHAPKTVANFVGLAQGTDKDYSTQNASGG
proteinas/Rv0010:MQQTAWAPRTSGIAGCGAGGVMAIASVTLVTDTPGRVLTGVAALGLILFASATWRARPR
proteinas/Rv0012:MRLTHPTPCPENGETMIDRRRSAMRFSVPLVCLLAGLLAATHGVSGGTEIRRSAPRLV
proteinas/Rv0012:CVGNTLLNGRITYSPPTYIAAIGDAAAMQAAALAAPLVLYKQYVVRFLGVCYEEVHPDL
proteinas/Rv0013:RAGASVSIHVACAAHTPLLGVCGLGHQATGVAFGATVDRAPELLHGKTSVFHTNVGVLO
proteinas/Rv0014:EGLSADLDAVVLKALAKNPENRYQTAEMRADLVRVHNGEPPEAPKVLDAERTSLLSSA
proteinas/Rv0015:MLEQTGRALQIAHAAGLVHRDVKPGNIIITPTGQVKITDFGIKAVDAAPVTQTGMVMGT
proteinas/Rv0015:AQYIAPEQALGHDASPASDVYSLGVVGYEAVSGKRPFAGDGALTVMKHIKEPPPLPPD
proteinas/Rv0015:LPPNVRELIEITLVKNPAMRYRSGGPFADAVAAVRAGRPPRPSQTPPPGRAAPAAIPSG
proteinas/Rv0015:KAPGDNSPQQAPTPTVTTTGNPPASNTGGTDASPRLNWTERGETRHSGLQSWVVPPTPHS
proteinas/Rv0016:LLAYSATDGRFRFLRVYPNPEVYAPVTGFYSLRYSSTALERAEDPILNGSDRRLFGRR
proteinas/Rv0016:EQLTAAPTIPLPGSTAQLENYGGAAPCGDEPTVSLREAFVKSCNTAFVQLGIRTGADALRS
proteinas/Rv0016:IASKTGTAEHGTDPRHTPPHAWYIAFAPAPKPVAVAVLVENGADRLSATGGALAAPIGR
proteinas/Rv0017:MTTRLQAPVAVTPPLPTRRNaELLLCFAAVITFAALLVVQANQDQGVWDLTSYGLAFL
proteinas/Rv0017:TLFGSAHLAIRRFAPYTDPLLPVVALNLGLVMIHRLDLVDNEIGEHRHPSANQQLW
proteinas/Rv0017:FSIQPAEFSKILLIIFSAVLVAKRGLFTSAGKHLGMLTPRPRDLAPLLAAWVISVGM
proteinas/Rv0018:LPPCPAPRATSPPGRPAPPTTSETTEPNVTSSPASPSPTTSAPAPTGTTPAIPTSASPAA
proteinas/Rv0019:MQGLVLQLTRAGFLMLLVFIWSVLRILKTDIYAPTGAVMRRGLALRGTLGARQRRHA
proteinas/Rv0020:MGSKRLVQRVERKLEQTVGDAFARIFGGSVQPQVEALLRREAADGIQSLQGNRLLAPN
proteinas/Rv0020:ARGTVNPDVETHPPVIDCARPQSNHAFGAEPGVAPMSDNSSYRGQGQGRPDYDDRYA
proteinas/Rv0020:QRYGPEQRGYPDQRYGQDQGRGYPDQGGGYPPEYQRPVSPGPAAGYGAPGYDQGYRQ
proteinas/Rv0020:GATTYGRQDYGGGADYTRYTESPRVPGYAPQGGGYAEPAGRDYDYGQSGAPDYGQAPGG
proteinas/Rv0020:WDGQVALLADLNSTNGTTVNNAPVQEWQLADGDVIRLGHSEIIVRMH
proteinas/Rv0021:MVLSTAFSQMFGIDYPIVSAPMDLIAGGELAAAVSGAGGLGIGGGYGDRDLARQFDLA
proteinas/Rv0021:AGAPVGGCFITWSLARQPQLLDLALQYEPVAVMLSFGDPAVFADAIKSAGTRLVCQIQNR
proteinas/Rv0024:PGHVQLAIGNNLVVEAPHAGASVRVSSLGNNVQIRRLPSGR
proteinas/Rv0026:QRHSNLYYPAPPDREQGDAARAIADAEALAHQNSATAQLDLQVVSAILNAHLKTVEGGE
proteinas/Rv0026:TSLYDASKGDRGDADDRGPASVSGGAPARGAGQQPELPTRAEPDCLLDSLLLEDPLLA
proteinas/Rv0026:DDLQVPGGTSAIIPASSTPSLPLNLGGATMPGGGATPALVPGVSAPGGLPLSGLLRGVGD
proteinas/Rv0026:EPELTDFDERGQEVDRPADYEHSENPEDERRADDREGADEAGLGKSESPPQAPTITVLPN
proteinas/Rv0029:PRINWAVGVHADGTTVITDVAHGWTTPGTALPEGVRIIAPARRAGRAPFIVGITTCCKT
```

9.1.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ grep ">" proteinas/*
proteinas/Rv0001:>Rv0001
proteinas/Rv0002:>Rv0002
proteinas/Rv0003:>Rv0003
proteinas/Rv0004:>Rv0004
proteinas/Rv0005:>Rv0005
proteinas/Rv0006:>Rv0006
proteinas/Rv0007:>Rv0007
proteinas/Rv0008c:>Rv0008c
proteinas/Rv0009:>Rv0009
proteinas/Rv0010c:>Rv0010c
proteinas/Rv0011c:>Rv0011c
proteinas/Rv0012:>Rv0012
proteinas/Rv0013:>Rv0013
proteinas/Rv0014c:>Rv0014c
proteinas/Rv0015c:>Rv0015c
proteinas/Rv0016c:>Rv0016c
proteinas/Rv0017c:>Rv0017c
proteinas/Rv0018c:>Rv0018c
proteinas/Rv0019c:>Rv0019c
proteinas/Rv0020c:>Rv0020c
proteinas/Rv0021c:>Rv0021c
proteinas/Rv0022c:>Rv0022c
proteinas/Rv0023:>Rv0023
proteinas/Rv0024:>Rv0024
proteinas/Rv0025:>Rv0025
proteinas/Rv0026:>Rv0026
proteinas/Rv0027:>Rv0027
proteinas/Rv0028:>Rv0028
proteinas/Rv0029:>Rv0029
proteinas/Rv0030:>Rv0030
proteinas/Rv0031:>Rv0031
proteinas/Rv0032:>Rv0032
proteinas/Rv0033:>Rv0033
proteinas/Rv0034:>Rv0034
proteinas/Rv0035:>Rv0035
proteinas/Rv0036c:>Rv0036c
proteinas/Rv0037c:>Rv0037c
proteinas/Rv0038:>Rv0038
proteinas/Rv0039c:>Rv0039c
proteinas/Rv0040c:>Rv0040c
proteinas/Rv0041:>Rv0041
proteinas/Rv0042c:>Rv0042c
proteinas/Rv0043c:>Rv0043c
proteinas/Rv0044c:>Rv0044c
proteinas/Rv0045c:>Rv0045c
```

9.2. e 9.3.

```
vulttur@vulttur-VirtualBox:~/Downloads/sample$ sed -i "s/> \(Rv[0-9]\|c\|?\)/>Mt_\1/g" proteinas/*
vulttur@vulttur-VirtualBox:~/Downloads/sample$ grep ">" proteinas/*
proteinas/Rv0001:>Mt_Rv0001
proteinas/Rv0002:>Mt_Rv0002
proteinas/Rv0003:>Mt_Rv0003
proteinas/Rv0004:>Mt_Rv0004
proteinas/Rv0005:>Mt_Rv0005
proteinas/Rv0006:>Mt_Rv0006
proteinas/Rv0007:>Mt_Rv0007
proteinas/Rv0008c:>Mt_Rv0008c
proteinas/Rv0009:>Mt_Rv0009
proteinas/Rv0010c:>Mt_Rv0010c
proteinas/Rv0011c:>Mt_Rv0011c
proteinas/Rv0012:>Mt_Rv0012
proteinas/Rv0013:>Mt_Rv0013
proteinas/Rv0014c:>Mt_Rv0014c
proteinas/Rv0015c:>Mt_Rv0015c
proteinas/Rv0016c:>Mt_Rv0016c
proteinas/Rv0017c:>Mt_Rv0017c
proteinas/Rv0018c:>Mt_Rv0018c
proteinas/Rv0019c:>Mt_Rv0019c
proteinas/Rv0020c:>Mt_Rv0020c
proteinas/Rv0021c:>Mt_Rv0021c
proteinas/Rv0022c:>Mt_Rv0022c
proteinas/Rv0023:>Mt_Rv0023
proteinas/Rv0024:>Mt_Rv0024
proteinas/Rv0025:>Mt_Rv0025
proteinas/Rv0026:>Mt_Rv0026
proteinas/Rv0027:>Mt_Rv0027
proteinas/Rv0028:>Mt_Rv0028
proteinas/Rv0029:>Mt_Rv0029
proteinas/Rv0030:>Mt_Rv0030
proteinas/Rv0031:>Mt_Rv0031
proteinas/Rv0032:>Mt_Rv0032
proteinas/Rv0033:>Mt_Rv0033
proteinas/Rv0034:>Mt_Rv0034
proteinas/Rv0035:>Mt_Rv0035
proteinas/Rv0036c:>Mt_Rv0036c
proteinas/Rv0037c:>Mt_Rv0037c
proteinas/Rv0038:>Mt_Rv0038
proteinas/Rv0039c:>Mt_Rv0039c
proteinas/Rv0040c:>Mt_Rv0040c
proteinas/Rv0041:>Mt_Rv0041
proteinas/Rv0042c:>Mt_Rv0042c
proteinas/Rv0043c:>Mt_Rv0043c
proteinas/Rv0044c:>Mt_Rv0044c
proteinas/Rv0045c:>Mt_Rv0045c
```