

**Figure S1. The expression pattern search program compiled by Intel Visual Fortran Compiler, version 6.5.**

```
PROGRAM search_gene
  implicit none
  type :: t_data_struct
    Character *30    :: SEQ_ID
    DOUBLE PRECISION,dimension(20) :: timedata
    Character *30    :: SECONDARY_NAME
    Character *30    :: SECONDARY_NAME2
  END type t_data_struct

  type (t_data_struct) :: row_data
  type (t_data_struct),dimension(200) :: buffer
  character *30 :: datafilename
  character *50 :: outputname
  CHARACTER (LEN=30), DIMENSION(22) :: temp
  double precision :: max_firstpart
  double precision :: max_L,max_s,max_c,min_L,min_s,min_c
  integer :: i,idnum,ios,ic,k
  ! read datafilename
  write (*,*) "Please input your data file name:"
  read *, datafilename
  open(UNIT=20, FILE=trim(datafilename), STATUS="OLD", IOSTAT=ios)
  if (ios>0) then
    print *, "Cannot find that file!"
    stop
  else
    outputname = trim(datafilename)//"_stf.txt"
    open(UNIT=30, FILE=trim(outputname), STATUS="REPLACE", IOSTAT=ios)

    open(UNIT=50, FILE="LOG.txt",STATUS="REPLACE", IOSTAT=ios)
  endif
  ! load data row by row
  read(UNIT=20, FMT=*) temp
  !write (*,*) temp
  !write(UNIT=30,FMT='(22(a30,1X))' temp

  i=1
  idnum=0
  ic=0
  ios=0
  do
```

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read (20,FMT=*,IOSTAT=ios) row_data
!write(*,FMT='(3(a30),4(f10.5),a100)') row_data
if (ios/=0) then

    write(*,*) "end of file"
    write(*,*) "total data set:",idnum
    write(*,*) "NO. satisfying conditions:", ic
    write(*,*) "NO. regular:", idnum-ic

    write(50,*) "end of file"
    write(50,*) "total data set:",idnum
    write(50,*) "NO. satisfying conditions:", ic
    write(50,*) "NO. regular:", idnum-ic

    close(20)
    close(30)
    close(50)
    exit
endif
idnum=idnum+1
max_firstpart=0d0
! calculate max and min for L part
max_L=row_data%timedata(1)
min_L=row_data%timedata(1)
do i=1,3
    if (row_data%timedata(i)>max_L) then
        max_L=row_data%timedata(i)
    elseif (row_data%timedata(i)<min_L) then
        min_L=row_data%timedata(i)
    endif
enddo
! calculate max and min for s part
max_s=row_data%timedata(4)
min_s=row_data%timedata(4)
do i=4,10
    if (row_data%timedata(i)>max_s) then
        max_s=row_data%timedata(i)
    elseif (row_data%timedata(i)<min_s) then
        min_s=row_data%timedata(i)
    endif
enddo
! calculate max and min for c part
max_c=row_data%timedata(11)

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```
min_c=row_data%timedata(11)
do i=11,20
  if (row_data%timedata(i)>max_c) then
    max_c=row_data%timedata(i)
  elseif (row_data%timedata(i)<min_c) then
    min_c=row_data%timedata(i)
  endif
enddo
! now specify conditions
if (max_L<99.and.max_s<99.and.max_c<99) then
  ic=ic+1
  write (30,'(A30,1X,20(F20.5,1X),A30,1X,A30)') row_data
endif

enddo
pause
END Program search_gene
```