;mfa-toto

;MFA-TOCSY/TOCSY

#include <Avance.incl>

#include <Grad.incl>

#include <Delay.incl>

"p2=p1\*2"

"d0=3u"

"d11=30m"

"DELTA=p16+d16+d0"

"DELTA1=p16+d16+8u"

"l0=td1/2"

"FACTOR1=(d9/(p6\*115.112))/2+0.5"

"FACTOR2=(d10/(p6\*115.112))/2+0.5"

"l1=FACTOR1\*2"

"l2=FACTOR2\*2"

1 ze

 d11

2 d1 pl1:f1

3 50u UNBLKGRAD

 p1 ph1

DELTA

p2 ph2

d0

p16:gp1\*EA

d16

p1 ph3

d12 pl10:f1

;begin DIPSI2

4 p6\*3.556 ph23

p6\*4.556 ph25

p6\*3.222 ph23

p6\*3.167 ph25

p6\*0.333 ph23

p6\*2.722 ph25

p6\*4.167 ph23

p6\*2.944 ph25

p6\*4.111 ph23

p6\*3.556 ph25

p6\*4.556 ph23

p6\*3.222 ph25

p6\*3.167 ph23

p6\*0.333 ph25

p6\*2.722 ph23

p6\*4.167 ph25

p6\*2.944 ph23

p6\*4.111 ph25

p6\*3.556 ph25

p6\*4.556 ph23

p6\*3.222 ph25

p6\*3.167 ph23

p6\*0.333 ph25

p6\*2.722 ph23

p6\*4.167 ph25

p6\*2.944 ph23

p6\*4.111 ph25

p6\*3.556 ph23

p6\*4.556 ph25

p6\*3.222 ph23

p6\*3.167 ph25

p6\*0.333 ph23

p6\*2.722 ph25

p6\*4.167 ph23

p6\*2.944 ph25

p6\*4.111 ph23

lo to 4 times l1

;end DIPSI2

DELTA1 pl1:f1

p2 ph2

4u

p16:gp1

d16

4u BLKGRAD

goscnp ph31

d12 wr #1

50u UNBLKGRAD

p16:gp2

d16

d12 pl10:f1

;begin DIPSI2

5 p6\*3.556 ph23

p6\*4.556 ph25

p6\*3.222 ph23

p6\*3.167 ph25

p6\*0.333 ph23

p6\*2.722 ph25

p6\*4.167 ph23

p6\*2.944 ph25

p6\*4.111 ph23

p6\*3.556 ph25

p6\*4.556 ph23

p6\*3.222 ph25

p6\*3.167 ph23

p6\*0.333 ph25

p6\*2.722 ph23

p6\*4.167 ph25

p6\*2.944 ph23

p6\*4.111 ph25

p6\*3.556 ph25

p6\*4.556 ph23

p6\*3.222 ph25

p6\*3.167 ph23

p6\*0.333 ph25

p6\*2.722 ph23

p6\*4.167 ph25

p6\*2.944 ph23

p6\*4.111 ph25

p6\*3.556 ph23

p6\*4.556 ph25

p6\*3.222 ph23

p6\*3.167 ph25

p6\*0.333 ph23

p6\*2.722 ph25

p6\*4.167 ph23

p6\*2.944 ph25

p6\*4.111 ph23

lo to 5 times l2

;end DIPSI2

d12 pl1:f1

p1 ph4

DELTA1

p2 ph2

4u

p16:gp1

d16

4u BLKGRAD

gosc ph31

d1 wr #2

lo to 3 times 2

d12 if #1

d12 zd

d12 if #2

30u igrad EA

30u ip3\*2

lo to 3 times 2

30u ip1\*2

30u ip31\*2

30u id0

lo to 3 times l0

exit

ph1=0 2

ph2=0

ph3=0 0 2 2

ph4=2 2 0 0

ph23=3

ph25=1

ph31=0 2

;pl1 : f1 channel - power level for pulse (default)

;pl10: f1 channel - power level for TOCSY-spinlock

;p1 : f1 channel - 90 degree high power pulse

;p2 : f1 channel - 180 degree high power pulse

;p6 : f1 channel - 90 degree low power pulse

;p16: homospoil/gradient pulse

;d0 : incremented delay (2D) [3 usec]

;d1 : relaxation delay; 1-5 \* T1

;d9 : TOCSY mixing time

;d10 : TOCSY mixing time

;d11: delay for disk I/O [30 msec]

;d16: delay for homospoil/gradient recovery

;l1: loop for DIPSI cycle: ((p6\*115.112) \* l1) = mixing time

;l2: loop for DIPSI cycle: ((p6\*115.112) \* l2) = mixing time

;in0: 1/(1 \* SW) = 2 \* DW

;nd0: 1

;NS: 2 \* n

;DS: 8

;td1: number of experiments

;FnMODE: echo-antiecho

;use gradient ratio: gp 1 : gp 2

; 30 : 23

;for z-only gradients:

;gpz1: 30%

;gpz2: 23%

;use gradient files:

;gpnam1: SINE.100

;gpnam2: SINE.100