Bruker Pulse Program "Secret Decoder Ring"

;Pulprog.info

For a Bruker pulse program, the first ~4-6 characters usually specify the type of experiment being run e.g., DEPT. COSY, NOESY. Other information about the pulse program is indicated by a two-letter code, which is listed below in alphabetical order. In case of redundant information some two-character codes may be omitted.

2D NMR experiments always indicate the mode (absolute value, phase-sensitive, echo-antiecho). By default, H-decoupling (for heteronuclear observe) or X-decoupling (for ^{1}H observe) is assumed to be on. For homonuclear experiments, H-decoupling is not on by default.

Typical experiment names would be: cosy, dept, dipsi2, hmbc, hmqc, hoesy, hsqc, inad, inept, mlev, noesy, roesy or trosy.

Inverse correlations are denoted as hmbc, hmqc or hsqc. Experiments with a BIRD sequence in the beginning also contain a bi in the name.

1D experiments, which are analogues of 2D experiments by virtue of a selective pulse, start with sel. Semiselective 2D experiments have the same name as the unselective version but with an s at the beginning: scosyph <-> cosyph.

A phase-sensitive (States-TPPI, TPPI etc.) NOESY experiment with presaturation would then be: noesy + ph + pr = noesyphpr.

In the other direction the pulseprogram hmbcgplpndqf = hmbc + gp + lp + nd + qf and therefore an: inverse correlation for long-range couplings (HMBC) with coherence selection using gradients with "gp" syntax, a low-pass J-filter, and no decoupling.

The two-character codes used are the following:

ac accordion type experiment
ad using adiabatic spinlock
ar experiment for aromatic residues
at adiabatic TOCSY
bi with bird pulse for homonuclear J-decoupling
bp using bipolar gradients
cc cross correlation experiment
cn C13 and N15 dependent information in different indirect dimensions
co with COSY transfer
cp with composite pulse
ct constant time
cv convection compensated
cw decoupling using cw command
cx using CLEANEX_PM
dc decoupling using cpd command
df double quantum filter
di with DIPSI mixing sequence
dh homonuclear decoupling in indirect dimension
dw decoupling using cpd command only during wet sequence
dq double quantum coherence
ea phase sensitive using Echo/Antiecho method
ec with E.COSY transfer
ed with multiplicity editing
es excitation sculpting
et phase sensitive using Echo/Antiecho-TPPI method
fb using f2 - and f3 - channel
fd using f1 - and f3 - channel (for presaturation)
fr with presaturation using a frequency list

ft using f1 -, f2 - and f3 - channel (for presaturation)
fh F-19 observe with H-1 decoupling
fp using a flip-back pulse
fl for F-19 ecoupler
fw forward directed type experiment
f2 using f2 - channel (for presaturation)
f3 using f3 - instead of f2 - channel
f4 using f4 - instead of f2 - channel
gd gated decoupling using cpd command
ge gradient echo experiment
gp using gradients with ":gp" syntax
gr using gradients
gs using shaped gradients
hb hydrogen bond experiment
hc homodecoupling of a region using a cpd-sequence
hd homodecoupling
hf H-1 observe with F-19 decoupling
hs with homospoil pulse
ia InPhase-AntiPhase (IPAP) experiment
id IDIS - isotopically discriminated spectroscopy
ig inverse gated
ii using inverse (invi/HSQC) sequence
im with incremented mixing time
in with INEPT transfer
ip in phase
i4 using inverse (inv4/HMQC) sequence
jc for determination of J coupling constant
jd homonuclear J-decoupled
jr with jump-return pulse
js jump symmetrized (roesy)
ld low power cpd decoupling
lp with low-pass J-filter
lq with Q-switching (low Q)
lr for long-range couplings
l2 with two-fold low-pass J-filter
l3 with three-fold low-pass J-filter
mf multiple quantum filter
ml with MLEV mixing sequence
mq using multiple quantum
nc N15 and C13 dependent information in different indirect dimensions
nd no decoupling
no with NOESY mixing sequence
pc with presaturation and composite pulse
pg power-gated
ph phase sensitive using States-TPPI, TPPI, States or QSEQ
pl preparing a frequency list
pn with presaturation using a 1D NOESY sequence
pp using purge pulses
pr with presaturation
ps with presaturation using a shaped pulse
qf absolute value mode
qn for QNP-operation
qs phase sensitive using qseq-mode
rc for determination of residual dipolar couplings (RDC)/ J couplings
rd refocussed
re relaxation optimised (H-flip)
rl with relay transfer
ro with ROESY mixing sequence
rs with radiation damping suppression using gradients
rt real time
ru using radiation damping compensation unit
rv with random variation
r2 with 2 step relay transfer
r3 with 3 step relay transfer
se spin echo experiment
sh phase sensitive using States et al. method
si sensitivity improved
sm simultaneous evolution of X and Y chemical shift
sp using a shaped pulse
sq using single quantum
ss spin-state selective experiment
st phase sensitive using States-TPPI method

sy symmetric sequence
s3 S3E experiment
tc temperature compensation
tf triple quantum filter
tp phase sensitive using TPPI
tr using TROSY sequence
tz zeroquantum (ZQ) TROSY
ul using a frequency list
us updating shapes
wg watergate using a soft-hard-soft sequence
wt with WET watersuppression
w5 watergate using W5 pulse
xf x-filter experiments
xy with XY CPMG sequence
x1 x-filter in F1
x2 x-filter in F2
x3 x-filter in F3
zf with z-filter
zq zero quantum coherence
zs using a gradient/rf spoil pulse
1d 1D version
1s using 1 spoil gradients
11 using 1-1 pulse
19 using 3-9-19 pulse
19f for F19
2h using 2H lockswitch unit
2s using 2 spoil gradients
3d 3D sequence
3n for E.COSY (3 spins, negative correlation)
3p for E.COSY (3 spins, positive correlation)
3s using 3 spoil gradients
30 using a 30 degree flip angle
45 using a 45 degree flip angle
90 using a 90 degree flip angle
135 using a 135 degree flip angle
180 using a 180 degree pulse