piperine
Clauss(cgf) 070107
15mg in 100% CDCl₃
piperine
Clauss(cgf) 070107
15mg in 100% CDCl₃
1H spectrum at 500 MHz
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15mg in 100% CDCl₃
1H spectrum at 500 MHz

all expansions
20Hz/cm unless otherwise noted
piperine
Clauss(cgf) 070107
15mg in 100% CDCl₃

1H gcosy spectrum
at 500 MHz
piperine
Clauss(cgf) 070107
15mg in 100% CDCl₃

1H gcosy expansion
at 500 MHz
piperine
Clauss(cgf) 070107
15mg in 100% CDCl₃

1H HSQCAD
(1-bond 1H-13C correlation)
at 500 MHz

-CH₂- show in red
-CH₃, >CH- in blue
piperine
Clauss (cgf) 070107
15mg in 100% CDCl₃

expansion of 1H HSQCAD
(1-bond 1H-13C correlation)
at 500 MHz

This adiabatic experiment
inverts -CH2-, show in red.

-CH3 and >CH- are left
positive in the experiment,
and are shown in blue.
piperine
Clauss(cgf) 070107
15mg in 100% CDCl₃

1H gHMBCAD (long-range 1H-13C correlation) at 500 MHz
piperine
Clauss (cgf) 070107
15mg in 100% CDCl₃

expansion of 1H
gHMQC (n-bond
1H-13C correlation)
at 500 MHz

1-bond artifacts
(doublets in the F2
dimension split by
JCH~160Hz) have
been colored yellow.