

**Files generated by R.E.D. Server/R.E.D. IV**  
**Charge derivation & force field library building for the central fragment**  
**of a new amino acid.**

**Programs interfaced: Gaussian 2003 & RESP**

**Parent\_directory**

File4REDDB\_m1.pdb  
JOB2-gau\_m1-1-1.com  
JOB2-gau\_m1-1-1.out  
JOB2-gau\_m1-1-2.com  
JOB2-gau\_m1-1-2.out  
JOB2-gau\_m1-1-3.com  
JOB2-gau\_m1-1-3.out  
JOB2-gau\_m1-1-4.com  
JOB2-gau\_m1-1-4.out  
JOB2-gau\_m1-2-1.com  
JOB2-gau\_m1-2-1.out  
JOB2-gau\_m1-2-2.com  
JOB2-gau\_m1-2-2.out  
JOB2-gau\_m1-2-3.com  
JOB2-gau\_m1-2-3.out  
JOB2-gau\_m1-2-4.com  
JOB2-gau\_m1-2-4.out  
Mol\_m1-01-qmra.pdb  
Mol\_m1-01-rbra1.pdb  
Mol\_m1-01-rbra2.pdb  
Mol\_m1-01-rbra3.pdb  
Mol\_m1-01-rbra4.pdb  
Mol\_m1-01.mol2  
Mol\_m1-01-sm.mol2  
Mol\_m1-02-qmra.pdb  
Mol\_m1-02-rbra1.pdb  
Mol\_m1-02-rbra2.pdb  
Mol\_m1-02-rbra3.pdb  
Mol\_m1-02-rbra4.pdb  
Mol\_m1-02.mol2  
Mol\_m1-02-sm.mol2  
esout\_m1  
esout\_m1.sm  
espot\_m1  
espot\_m1-1-1  
espot\_m1-1-2  
espot\_m1-1-3  
espot\_m1-1-4  
espot\_m1-2-1  
espot\_m1-2-2  
espot\_m1-2-3  
espot\_m1-2-4  
input1\_m1  
input1\_m1.sm  
input2\_m1  
input2\_m1.sm  
output1\_m1  
output1\_m1.sm  
output2\_m1  
output2\_m1.sm  
punch1\_m1  
punch1\_m1.sm  
punch2\_m1  
punch2\_m1.sm  
qout1\_m1  
qout1\_m1.sm  
qout2\_m1  
qout2\_m1.sm

**Single molecule charge derivation**

m1 = molecule 1  
Gaussian input: m1-1-1: molecule 1; conformation 1; orientation 1  
Gaussian output

Gaussian input: m1-2-1: molecule 1; conformation 2; orientation 1  
Gaussian output

conformation 1; Orientation of opt. geometry based on the Gaussian program  
Rigid-body re-orientation algorithm: conformation 1;orientation 1

conformation 1; Force field library (without intra-molecular charge constraint)  
conformation 1; Force field library (with intra-molecular charge constraint)  
conformation 2; Orientation of opt. geometry based on the Gaussian program  
Rigid-body re-orientation algorithm: conformation 2;orientation 1

conformation 2; Force field library (without intra-molecular charge constraint)  
conformation 2; Force field library (with intra-molecular charge constraint)  
RESP output (without intra-molecular charge constraint)  
RESP output (with intra-molecular charge constraint)  
Eight esots of molecule 1 concatenated in a single file  
m1-1-1: molecule 1; conformation 1; orientation 1

m1-1-2: molecule 1; conformation 2; orientation 1

RESP input - single molecule (stage 1) (without intra-molecular charge constraint)  
RESP input - single molecule (stage 1) (with intra-molecular charge constraint)  
RESP input - single molecule (stage 2) (without intra-molecular charge constraint)  
RESP input - single molecule (stage 2) (with intra-molecular charge constraint)  
RESP output - single molecule (stage 1) (without intra-molecular charge constraint)  
RESP output - single molecule (stage 1) (with intra-molecular charge constraint)  
RESP output - single molecule (stage 2) (without intra-molecular charge constraint)  
RESP output - single molecule (stage 2) (with intra-molecular charge constraint)  
RESP output - single molecule (stage 1) (without intra-molecular charge constraint)  
RESP output - single molecule (stage 1) (with intra-molecular charge constraint)  
RESP output - single molecule (stage 2) (without intra-molecular charge constraint)  
RESP output - single molecule (stage 2) (with intra-molecular charge constraint)  
RESP output (charge values - stage 1) (without intra-molecular charge constraint)  
RESP output (charge values - stage 1) (with intra-molecular charge constraint)  
RESP output (charge values - stage 2) (without intra-molecular charge constraint)  
RESP output (charge values - stage 2) (with intra-molecular charge constraint)