

Quick Reference Guide for RasMol

Launch the program

Depending on the computer that you are using, type RasMol <filename> in a Unix/Linux or Mac computer or click on the RasMol icon (in Windows), then click on the open file menu item and give file name. In all cases, Rasmol will run in 2 windows - one to view the molecules (main window) and another to type the text commands or scripts into (command window).

Mouse buttons

Clicking on an atom identifies it in the command window. Moving the mouse while holding the button and/or control keys, manipulates the molecule and allows you to orient it to see the features clearly.

To rotate molecule: drag pointer in the main screen (hold down the mouse button and move mouse).

To move molecule: use right mouse button and drag.

To zoom molecule: hold down shift and drag pointer down to bring model closer, or up to move it farther away.

To reset to starting view: reset < return >

Common commands

select <expression> select the part of molecule in expression

restrict <expression> show only the part of molecule in expression

save script <filename>.spt save a script file

script <filename> execute file of commands

The expression could be a chain (:A or *A) or a residue number (113), or a residue type (His), or combinations of the above using boolean operators like AND, OR, NOT. For example “:A and Pro” refers to the Prolines in chain A etc. For more info on expressions see the RasMol manual link below.

Display commands

wireframe [boolean] display wireframe

wireframe <value> display stick bonds

spacefill [boolean] display spacefill

spacefill <value> specify atom radius

backbone [boolean] display backbone

backbone <value> specify backbone radius

ssbond [boolean] display disulphide bonds

ssbond <value> specify ssbond radius

Color commands

color [object] <color> color object

Usually run after selecting a part of molecule or chain.

Pre-defined colors

Blue, cyan, green, greenblue, magenta, red, orange, purple, violet, white, yellow, CPK

Some handy RasMol links:

Rasmol FAQ: <http://www.openrasmol.org/FAQ.html>

RasMol tutorial: <http://www.usm.maine.edu/~rhodes/RasTut/>

RasMol manual: <http://www.openrasmol.org/doc/rasmol.html>

Other: <http://www.umass.edu/microbio/rasmol/index2.htm>

SHORTHAND SYMBOLS FOR AMINO ACIDS

One letter	Three letter	Amino Acid
A	Ala	Alanine
R	Arg	Arginine
N	Asn	Asparagine
D	Asp	Aspartic acid
B	Asx	Asn or Asp
C	Cys	Cysteine
Q	Gln	Glutamine
E	Glu	Glutamic acid
Z	Glx	Gln or Glu
G	Gly	Glycine
H	His	Histidine
I	Ile	Isoleucine
L	Leu	Leucine
K	Lys	Lysine
M	Met	Methionine
F	Phe	Phenylalanine
P	Pro	Proline
S	Ser	Serine
T	Thr	Threonine
W	Trp	Tryptophan
Y	Tyr	Tyrosine
V	Val	Valine

Amino acids with nonpolar [hydrophobic] groups

Amino acids with uncharged polar groups [pH = 6-7]

Amino acids with acidic groups [pH = 6-7]

Amino acids with basic groups [pH = 6-7]

Ala	Asn	Asp	Arg
Ile	Cys	Glu	His
Leu	Gly		Lys
Met	Gln		
Phe	Ser		
Pro	Thr		
Trp			
Val			