**File S3. Python script for *gas-1* interactome SNP simulations reported in Figure S5.**

#!/usr/bin/env python2.7

import re

import sys

import math

f1= open(sys.argv[1], "r")

out1= open("Output\_Interactome", "w")

f1.readline()

genedict = dict()

subdict= dict()

for line in f1:

newline= line.strip().split("\t")

#print len(newline)

R07E4\_1 = newline[0]

C04E12\_10 = newline[1]

daf2 = newline[2]

rheb1 = newline[3]

sel2 = newline[4]

gas1 = newline[5]

nuc\_enc = newline[6]

if R07E4\_1 != '@':

#print R07E4\_1

str\_line = str("R07E4\_1")

if(genedict.has\_key(R07E4\_1)):

subdict= genedict[R07E4\_1]

if(subdict.has\_key(str\_line)):

subdict[str\_line] += 1

else:

subdict[str\_line] = 1

else:

genedict[R07E4\_1] = dict()

genedict[R07E4\_1][str\_line] = 1

if C04E12\_10 != '@':

#print C04E12\_10

str\_line = str("C04E12\_10")

if(genedict.has\_key(C04E12\_10)):

subdict= genedict[C04E12\_10]

if(subdict.has\_key(str\_line)):

subdict[str\_line] += 1

else:

subdict[str\_line] = 1

else:

genedict[C04E12\_10] = dict()

genedict[C04E12\_10][str\_line] = 1

if daf2 != '@':

#print daf2

str\_line = str("daf2")

if(genedict.has\_key(daf2)):

subdict= genedict[daf2]

if(subdict.has\_key(str\_line)):

subdict[str\_line] += 1

else:

subdict[str\_line] = 1

else:

genedict[daf2] = dict()

genedict[daf2][str\_line] = 1

if rheb1 != '@':

#print rheb1

str\_line = str("rheb1")

if(genedict.has\_key(rheb1)):

subdict= genedict[rheb1]

if(subdict.has\_key(str\_line)):

subdict[str\_line] += 1

else:

subdict[str\_line] = 1

else:

genedict[rheb1] = dict()

genedict[rheb1][str\_line] = 1

if sel2 != '@':

#print sel2

str\_line = str("sel2")

if(genedict.has\_key(sel2)):

subdict= genedict[sel2]

if(subdict.has\_key(str\_line)):

subdict[str\_line] += 1

else:

subdict[str\_line] = 1

else:

genedict[sel2] = dict()

genedict[sel2][str\_line] = 1

if gas1 != '@':

#print gas1

str\_line = str("gas1")

if(genedict.has\_key(gas1)):

subdict= genedict[gas1]

if(subdict.has\_key(str\_line)):

subdict[str\_line] += 1

else:

subdict[str\_line] = 1

else:

genedict[gas1] = dict()

genedict[gas1][str\_line] = 1

if nuc\_enc != '@':

#print nuc\_enc

str\_line = str("nuc\_enc")

if(genedict.has\_key(nuc\_enc)):

subdict= genedict[nuc\_enc]

if(subdict.has\_key(str\_line)):

subdict[str\_line] += 1

else:

subdict[str\_line] = 1

else:

genedict[nuc\_enc] = dict()

genedict[nuc\_enc][str\_line] = 1

key\_list = genedict.keys()

#print key\_list

values\_list = genedict.values()

#print values\_list

for key in key\_list:

out\_str= str(key) + str(genedict[key]) + str("\n")

out1.writelines(out\_str)

f1.close()

out1.close()