

Dynamical analysis of a Boolean Network model of the
oncogene role of lncRNA-ANRIL and lncRNA-UFC1 in non-
small cell lung cancer

Data File S1

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Code of the model in .ginml file format used for the GINsim 3.0.0b software.

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <!DOCTYPE gxl SYSTEM "http://gin.univ-mrs.fr/GINsim/GINML_2_1.dtd">
3 <gxl>
4   <graph id="defaultID" class="regulatory" nodeorder="DNA_Damage ATM p38MAPK Mdm2 p53 Wip1
      p53_A p53_K miR_34a p21 p53_INP1 Myc Cdc25A cdk46_CycD cdk2_CycE RB E2F1 ANRIL UFC1
      EZH2 KLF2 PTEN AKT Sirt_1 HDAC1 PUMA BCL2 BAX Caspase3 Proliferation Senescence
      Apoptosis">
5     <node id="DNA_Damage" maxvalue="1">
6       <parameter val="1" idActiveInteractions="DNA_Damage:DNA_Damage:1"/>
7       <annotation>
8         <comment>DNA_Damage is an input node marked with an auto-regulation.</comment>
9       </annotation>
10    </node>
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13      <parameter val="1" idActiveInteractions="DNA_Damage:ATM:1 HDAC1:ATM:1"/>
14      <parameter val="1" idActiveInteractions="DNA_Damage:ATM:1 E2F1:ATM:1"/>
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16      <parameter val="1" idActiveInteractions="DNA_Damage:ATM:1 Wip1:ATM:1"/>
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23    <node id="Mdm2" maxvalue="1">
24      <parameter val="1"/>
25      <parameter val="1" idActiveInteractions="p53:Mdm2:1"/>
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31      <parameter val="1" idActiveInteractions="ATM:p53:1 HDAC1:p53:1"/>
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34      <parameter val="1" idActiveInteractions="ATM:p53:1 p38MAPK:p53:1"/>
35      <parameter val="1" idActiveInteractions="ATM:p53:1 p38MAPK:p53:1 HDAC1:p53:1"/>
36      <parameter val="1" idActiveInteractions="ATM:p53:1 p38MAPK:p53:1 Mdm2:p53:1"/>
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38    </node>
39    <node id="Wip1" maxvalue="1">
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41    </node>
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45      <parameter val="1" idActiveInteractions="p53:p53_A:1 p53_INP1:p53_A:1"/>
46    </node>
47    <node id="p53_K" maxvalue="1">
48      <parameter val="1" idActiveInteractions="p53:p53_K:1"/>
49      <parameter val="1" idActiveInteractions="p53:p53_K:1 Sirt_1:p53_K:1"/>
50      <parameter val="1" idActiveInteractions="p53:p53_K:1 Wip1:p53_K:1"/>
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100     "/>
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108     <parameter val="1" idActiveInteractions="p53_A:p21:1 Myc:p21:1 EZH2:p21:1 HDAC1:p21:1"/>
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111     <parameter val="1" idActiveInteractions="p53_A:p21:1 Myc:p21:1 EZH2:p21:1 AKT:p21:1"/>
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113         HDAC1:p21:1"/>
114     <parameter val="1" idActiveInteractions="p53_A:p21:1 Myc:p21:1 EZH2:p21:1 AKT:p21:1
115         HDAC1:p21:1 Caspase3:p21:1"/>
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130         HDAC1:p21:1 Caspase3:p21:1"/>
131     <parameter val="1" idActiveInteractions="p38MAPK:p21:1 p53_A:p21:1 AKT:p21:1 HDAC1:p21:1
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133     <parameter val="1" idActiveInteractions="p38MAPK:p21:1 p53_A:p21:1 KLF2:p21:1"/>
134     <parameter val="1" idActiveInteractions="p38MAPK:p21:1 p53_A:p21:1 KLF2:p21:1
135         HDAC1:p21:1 Caspase3:p21:1"/>
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140 <parameter val="1" idActiveInteractions="p38MAPK:p21:1 p53_A:p21:1 EZH2:p21:1
141 Caspase3:p21:1"/>
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142 HDAC1:p21:1"/>
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143 HDAC1:p21:1 Caspase3:p21:1"/>
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196   <parameter val="1" idActiveInteractions="miR_34a:Myc:1 E2F1:Myc:1"/>
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207   <parameter val="1" idActiveInteractions="ATM:Cdc25A:1 miR_34a:Cdc25A:1"/>
208 </node>
209 <node id="cdk46_CycD" maxvalue="1">
210   <parameter val="1" idActiveInteractions="Cdc25A:cdk46_CycD:1"/>
211 </node>

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212 <node id="cdk2_CycE" maxvalue="1">
213   <parameter val="1" idActiveInteractions="Cdc25A:cdk2_CycE:1 E2F1:cdk2_CycE:1"/>
214 </node>
215 <node id="RB" maxvalue="1">
216   <parameter val="1"/>
217 </node>
218 <node id="E2F1" maxvalue="1">
219   <parameter val="1"/>
220   <parameter val="1" idActiveInteractions="Sirt_1:E2F1:1"/>
221   <parameter val="1" idActiveInteractions="Cdc25A:E2F1:1"/>
222   <parameter val="1" idActiveInteractions="Cdc25A:E2F1:1 Sirt_1:E2F1:1"/>
223   <parameter val="1" idActiveInteractions="Myc:E2F1:1"/>
224   <parameter val="1" idActiveInteractions="Myc:E2F1:1 Sirt_1:E2F1:1"/>
225   <parameter val="1" idActiveInteractions="Myc:E2F1:1 RB:E2F1:1"/>
226   <parameter val="1" idActiveInteractions="Myc:E2F1:1 RB:E2F1:1 Sirt_1:E2F1:1"/>
227   <parameter val="1" idActiveInteractions="Myc:E2F1:1 Cdc25A:E2F1:1"/>
228   <parameter val="1" idActiveInteractions="Myc:E2F1:1 Cdc25A:E2F1:1 Sirt_1:E2F1:1"/>
229   <parameter val="1" idActiveInteractions="Myc:E2F1:1 Cdc25A:E2F1:1 RB:E2F1:1"/>
230   <parameter val="1" idActiveInteractions="Myc:E2F1:1 Cdc25A:E2F1:1 RB:E2F1:1
      Sirt_1:E2F1:1"/>
231   <parameter val="1" idActiveInteractions="miR_34a:E2F1:1"/>
232   <parameter val="1" idActiveInteractions="miR_34a:E2F1:1 Cdc25A:E2F1:1"/>
233   <parameter val="1" idActiveInteractions="miR_34a:E2F1:1 Myc:E2F1:1"/>
234   <parameter val="1" idActiveInteractions="miR_34a:E2F1:1 Myc:E2F1:1 Sirt_1:E2F1:1"/>
235   <parameter val="1" idActiveInteractions="miR_34a:E2F1:1 Myc:E2F1:1 RB:E2F1:1"/>
236   <parameter val="1" idActiveInteractions="miR_34a:E2F1:1 Myc:E2F1:1 RB:E2F1:1
      Sirt_1:E2F1:1"/>
237   <parameter val="1" idActiveInteractions="miR_34a:E2F1:1 Myc:E2F1:1 Cdc25A:E2F1:1"/>
238   <parameter val="1" idActiveInteractions="miR_34a:E2F1:1 Myc:E2F1:1 Cdc25A:E2F1:1
      Sirt_1:E2F1:1"/>
239   <parameter val="1" idActiveInteractions="miR_34a:E2F1:1 Myc:E2F1:1 Cdc25A:E2F1:1
      RB:E2F1:1"/>
240   <parameter val="1" idActiveInteractions="miR_34a:E2F1:1 Myc:E2F1:1 Cdc25A:E2F1:1
      RB:E2F1:1 Sirt_1:E2F1:1"/>
241   <parameter val="1" idActiveInteractions="ATM:E2F1:1"/>
242   <parameter val="1" idActiveInteractions="ATM:E2F1:1 Sirt_1:E2F1:1"/>
243   <parameter val="1" idActiveInteractions="ATM:E2F1:1 Cdc25A:E2F1:1"/>
244   <parameter val="1" idActiveInteractions="ATM:E2F1:1 Cdc25A:E2F1:1 Sirt_1:E2F1:1"/>
245   <parameter val="1" idActiveInteractions="ATM:E2F1:1 Myc:E2F1:1"/>
246   <parameter val="1" idActiveInteractions="ATM:E2F1:1 Myc:E2F1:1 Sirt_1:E2F1:1"/>
247   <parameter val="1" idActiveInteractions="ATM:E2F1:1 Myc:E2F1:1 RB:E2F1:1"/>
248   <parameter val="1" idActiveInteractions="ATM:E2F1:1 Myc:E2F1:1 RB:E2F1:1 Sirt_1:E2F1:1"/>
249   <parameter val="1" idActiveInteractions="ATM:E2F1:1 Myc:E2F1:1 Cdc25A:E2F1:1"/>
250   <parameter val="1" idActiveInteractions="ATM:E2F1:1 Myc:E2F1:1 Cdc25A:E2F1:1
      Sirt_1:E2F1:1"/>
251   <parameter val="1" idActiveInteractions="ATM:E2F1:1 Myc:E2F1:1 Cdc25A:E2F1:1 RB:E2F1:1"/>
252   <parameter val="1" idActiveInteractions="ATM:E2F1:1 Myc:E2F1:1 Cdc25A:E2F1:1 RB:E2F1:1
      Sirt_1:E2F1:1"/>
253   <parameter val="1" idActiveInteractions="ATM:E2F1:1 miR_34a:E2F1:1"/>
254   <parameter val="1" idActiveInteractions="ATM:E2F1:1 miR_34a:E2F1:1 Cdc25A:E2F1:1"/>
255   <parameter val="1" idActiveInteractions="ATM:E2F1:1 miR_34a:E2F1:1 Cdc25A:E2F1:1
      Sirt_1:E2F1:1"/>
256   <parameter val="1" idActiveInteractions="ATM:E2F1:1 miR_34a:E2F1:1 Myc:E2F1:1"/>
257   <parameter val="1" idActiveInteractions="ATM:E2F1:1 miR_34a:E2F1:1 Myc:E2F1:1
      Sirt_1:E2F1:1"/>
258   <parameter val="1" idActiveInteractions="ATM:E2F1:1 miR_34a:E2F1:1 Myc:E2F1:1 RB:E2F1:1"/>
259   <parameter val="1" idActiveInteractions="ATM:E2F1:1 miR_34a:E2F1:1 Myc:E2F1:1 RB:E2F1:1
      Sirt_1:E2F1:1"/>
260   <parameter val="1" idActiveInteractions="ATM:E2F1:1 miR_34a:E2F1:1 Myc:E2F1:1

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261         Cdc25A:E2F1:1"/>
262     <parameter val="1" idActiveInteractions="ATM:E2F1:1 miR_34a:E2F1:1 Myc:E2F1:1
263         Cdc25A:E2F1:1 Sirt_1:E2F1:1"/>
264     <parameter val="1" idActiveInteractions="ATM:E2F1:1 miR_34a:E2F1:1 Myc:E2F1:1
265         Cdc25A:E2F1:1 RB:E2F1:1"/>
266     <parameter val="1" idActiveInteractions="ATM:E2F1:1 miR_34a:E2F1:1 Myc:E2F1:1
267         Cdc25A:E2F1:1 RB:E2F1:1 Sirt_1:E2F1:1"/>
268 </node>
269 <node id="ANRIL" maxvalue="1">
270     <parameter val="1" idActiveInteractions="E2F1:ANRIL:1"/>
271     <parameter val="1" idActiveInteractions="Myc:ANRIL:1"/>
272     <parameter val="1" idActiveInteractions="Myc:ANRIL:1 E2F1:ANRIL:1"/>
273 </node>
274 <node id="UFC1" maxvalue="1">
275     <parameter val="1" idActiveInteractions="E2F1:UFC1:1"/>
276 </node>
277 <node id="EZH2" maxvalue="1">
278     <parameter val="1" idActiveInteractions="Myc:EZH2:1 ANRIL:EZH2:1 UFC1:EZH2:1"/>
279 </node>
280 <node id="KLF2" maxvalue="1">
281     <parameter val="1" idActiveInteractions="p53_K:PTEN:1"/>
282 </node>
283 <node id="PTEN" maxvalue="1">
284     <parameter val="1" idActiveInteractions="BCL2:AKT:1"/>
285 </node>
286 <node id="AKT" maxvalue="1">
287     <parameter val="1" idActiveInteractions="E2F1:Sirt_1:1"/>
288     <parameter val="1" idActiveInteractions="E2F1:Sirt_1:1 HDAC1:Sirt_1:1"/>
289     <parameter val="1" idActiveInteractions="miR_34a:Sirt_1:1 E2F1:Sirt_1:1"/>
290 </node>
291 <node id="Sirt_1" maxvalue="1">
292     <parameter val="1" idActiveInteractions="E2F1:Sirt_1:1 HDAC1:Sirt_1:1"/>
293     <parameter val="1" idActiveInteractions="miR_34a:HDAC1:1 Sirt_1:HDAC1:1"/>
294     <parameter val="1" idActiveInteractions="DNA_Damage:HDAC1:1"/>
295 </node>
296 <node id="HDAC1" maxvalue="1">
297     <parameter val="1" idActiveInteractions="Sirt_1:HDAC1:1"/>
298     <parameter val="1" idActiveInteractions="miR_34a:HDAC1:1 Sirt_1:HDAC1:1"/>
299     <parameter val="1" idActiveInteractions="DNA_Damage:HDAC1:1"/>
300 </node>
301 <node id="PUMA" maxvalue="1">
302     <parameter val="1" idActiveInteractions="p53_K:PUMA:1"/>
303 </node>
304 <node id="BCL2" maxvalue="1">
305     <parameter val="1" idActiveInteractions="p53_K:BAX:1"/>
306 </node>
307 <node id="BAX" maxvalue="1">
308     <parameter val="1" idActiveInteractions="p53_K:BAX:1"/>
309 </node>
310 <node id="Caspase3" maxvalue="1">
311     <parameter val="1" idActiveInteractions="BAX:Caspase3:1"/>
312     <parameter val="1" idActiveInteractions="BCL2:Caspase3:1 BAX:Caspase3:1"/>
313     <parameter val="1" idActiveInteractions="p21:Caspase3:1 BAX:Caspase3:1"/>
314 </node>
315 <node id="Proliferation" maxvalue="1">
316     <parameter val="1" idActiveInteractions="E2F1:Proliferation:1"/>
317 </node>
318 <node id="Senescence" maxvalue="1">
319     <parameter val="1" idActiveInteractions="p21:Senescence:1"/>
320 </node>
321 <node id="Apoptosis" maxvalue="1">
322     <parameter val="1" idActiveInteractions="Caspase3:Apoptosis:1"/>
323 </node>

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319 </node>
320 <edge id="DNA_Damage:DNA_Damage:1" from="DNA_Damage" to="DNA_Damage" sign="positive"
      minvalue="1"/>
321 <edge id="DNA_Damage:ATM:1" from="DNA_Damage" to="ATM" sign="positive" minvalue="1"/>
322 <edge id="Wip1:ATM:1" from="Wip1" to="ATM" sign="negative" minvalue="1"/>
323 <edge id="E2F1:ATM:1" from="E2F1" to="ATM" sign="positive" minvalue="1"/>
324 <edge id="HDAC1:ATM:1" from="HDAC1" to="ATM" sign="negative" minvalue="1"/>
325 <edge id="ATM:p38MAPK:1" from="ATM" to="p38MAPK" sign="positive" minvalue="1"/>
326 <edge id="Wip1:p38MAPK:1" from="Wip1" to="p38MAPK" sign="negative" minvalue="1"/>
327 <edge id="ATM:Mdm2:1" from="ATM" to="Mdm2" sign="negative" minvalue="1"/>
328 <edge id="p53:Mdm2:1" from="p53" to="Mdm2" sign="positive" minvalue="1"/>
329 <edge id="Wip1:Mdm2:1" from="Wip1" to="Mdm2" sign="negative" minvalue="1"/>
330 <edge id="ATM:p53:1" from="ATM" to="p53" sign="positive" minvalue="1"/>
331 <edge id="p38MAPK:p53:1" from="p38MAPK" to="p53" sign="positive" minvalue="1"/>
332 <edge id="Mdm2:p53:1" from="Mdm2" to="p53" sign="negative" minvalue="1"/>
333 <edge id="HDAC1:p53:1" from="HDAC1" to="p53" sign="negative" minvalue="1"/>
334 <edge id="p53_A:Wip1:1" from="p53_A" to="Wip1" sign="positive" minvalue="1"/>
335 <edge id="p53:p53_A:1" from="p53" to="p53_A" sign="positive" minvalue="1"/>
336 <edge id="p53_K:p53_A:1" from="p53_K" to="p53_A" sign="negative" minvalue="1"/>
337 <edge id="p53_INP1:p53_A:1" from="p53_INP1" to="p53_A" sign="negative" minvalue="1"/>
338 <edge id="Sirt1:p53_A:1" from="Sirt1" to="p53_A" sign="negative" minvalue="1"/>
339 <edge id="p53:p53_K:1" from="p53" to="p53_K" sign="positive" minvalue="1"/>
340 <edge id="Wip1:p53_K:1" from="Wip1" to="p53_K" sign="negative" minvalue="1"/>
341 <edge id="p53_A:p53_K:1" from="p53_A" to="p53_K" sign="negative" minvalue="1"/>
342 <edge id="Sirt1:p53_K:1" from="Sirt1" to="p53_K" sign="negative" minvalue="1"/>
343 <edge id="ATM:miR_34a:1" from="ATM" to="miR_34a" sign="positive" minvalue="1"/>
344 <edge id="p53:miR_34a:1" from="p53" to="miR_34a" sign="positive" minvalue="1"/>
345 <edge id="ANRIL:miR_34a:1" from="ANRIL" to="miR_34a" sign="negative" minvalue="1"/>
346 <edge id="UFC1:miR_34a:1" from="UFC1" to="miR_34a" sign="negative" minvalue="1"/>
347 <edge id="EZH2:miR_34a:1" from="EZH2" to="miR_34a" sign="negative" minvalue="1"/>
348 <edge id="p38MAPK:p21:1" from="p38MAPK" to="p21" sign="positive" minvalue="1"/>
349 <edge id="p53_A:p21:1" from="p53_A" to="p21" sign="positive" minvalue="1"/>
350 <edge id="Myc:p21:1" from="Myc" to="p21" sign="negative" minvalue="1"/>
351 <edge id="EZH2:p21:1" from="EZH2" to="p21" sign="negative" minvalue="1"/>
352 <edge id="KLF2:p21:1" from="KLF2" to="p21" sign="positive" minvalue="1"/>
353 <edge id="AKT:p21:1" from="AKT" to="p21" sign="negative" minvalue="1"/>
354 <edge id="HDAC1:p21:1" from="HDAC1" to="p21" sign="negative" minvalue="1"/>
355 <edge id="Caspase3:p21:1" from="Caspase3" to="p21" sign="negative" minvalue="1"/>
356 <edge id="p53_A:p53_INP1:1" from="p53_A" to="p53_INP1" sign="positive" minvalue="1"/>
357 <edge id="p53_K:p53_INP1:1" from="p53_K" to="p53_INP1" sign="positive" minvalue="1"/>
358 <edge id="p38MAPK:Myc:1" from="p38MAPK" to="Myc" sign="positive" minvalue="1"/>
359 <edge id="miR_34a:Myc:1" from="miR_34a" to="Myc" sign="negative" minvalue="1"/>
360 <edge id="p21:Myc:1" from="p21" to="Myc" sign="negative" minvalue="1"/>
361 <edge id="RB:Myc:1" from="RB" to="Myc" sign="negative" minvalue="1"/>
362 <edge id="E2F1:Myc:1" from="E2F1" to="Myc" sign="positive" minvalue="1"/>
363 <edge id="ATM:Cdc25A:1" from="ATM" to="Cdc25A" sign="negative" minvalue="1"/>
364 <edge id="p38MAPK:Cdc25A:1" from="p38MAPK" to="Cdc25A" sign="negative" minvalue="1"/>
365 <edge id="miR_34a:Cdc25A:1" from="miR_34a" to="Cdc25A" sign="negative" minvalue="1"/>
366 <edge id="miR_34a:cdk46_CycD:1" from="miR_34a" to="cdk46_CycD" sign="negative" minvalue="1"
      "/>
367 <edge id="p21:cdk46_CycD:1" from="p21" to="cdk46_CycD" sign="negative" minvalue="1"/>
368 <edge id="Cdc25A:cdk46_CycD:1" from="Cdc25A" to="cdk46_CycD" sign="positive" minvalue="1"
      >
369 <edge id="miR_34a:cdk2_CycE:1" from="miR_34a" to="cdk2_CycE" sign="negative" minvalue="1"
      >
370 <edge id="p21:cdk2_CycE:1" from="p21" to="cdk2_CycE" sign="negative" minvalue="1"/>
371 <edge id="Cdc25A:cdk2_CycE:1" from="Cdc25A" to="cdk2_CycE" sign="positive" minvalue="1"/>
372 <edge id="E2F1:cdk2_CycE:1" from="E2F1" to="cdk2_CycE" sign="positive" minvalue="1"/>
373 <edge id="cdk46_CycD:RB:1" from="cdk46_CycD" to="RB" sign="negative" minvalue="1"/>
374 <edge id="cdk2_CycE:RB:1" from="cdk2_CycE" to="RB" sign="negative" minvalue="1"/>
375 <edge id="ATM:E2F1:1" from="ATM" to="E2F1" sign="positive" minvalue="1"/>
376 <edge id="miR_34a:E2F1:1" from="miR_34a" to="E2F1" sign="negative" minvalue="1"/>

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377 <edge id="Myc:E2F1:1" from="Myc" to="E2F1" sign="positive" minvalue="1"/>
378 <edge id="Cdc25A:E2F1:1" from="Cdc25A" to="E2F1" sign="positive" minvalue="1"/>
379 <edge id="RB:E2F1:1" from="RB" to="E2F1" sign="negative" minvalue="1"/>
380 <edge id="Sirt_1:E2F1:1" from="Sirt_1" to="E2F1" sign="negative" minvalue="1"/>
381 <edge id="Myc:ANRIL:1" from="Myc" to="ANRIL" sign="positive" minvalue="1"/>
382 <edge id="E2F1:ANRIL:1" from="E2F1" to="ANRIL" sign="positive" minvalue="1"/>
383 <edge id="E2F1:UFC1:1" from="E2F1" to="UFC1" sign="positive" minvalue="1"/>
384 <edge id="ATM:EZH2:1" from="ATM" to="EZH2" sign="negative" minvalue="1"/>
385 <edge id="Myc:EZH2:1" from="Myc" to="EZH2" sign="positive" minvalue="1"/>
386 <edge id="ANRIL:EZH2:1" from="ANRIL" to="EZH2" sign="positive" minvalue="1"/>
387 <edge id="UFC1:EZH2:1" from="UFC1" to="EZH2" sign="positive" minvalue="1"/>
388 <edge id="Myc:KLF2:1" from="Myc" to="KLF2" sign="negative" minvalue="1"/>
389 <edge id="EZH2:KLF2:1" from="EZH2" to="KLF2" sign="negative" minvalue="1"/>
390 <edge id="p53_K:PTEN:1" from="p53_K" to="PTEN" sign="positive" minvalue="1"/>
391 <edge id="EZH2:PTEN:1" from="EZH2" to="PTEN" sign="negative" minvalue="1"/>
392 <edge id="PTEN:AKT:1" from="PTEN" to="AKT" sign="negative" minvalue="1"/>
393 <edge id="BCL2:AKT:1" from="BCL2" to="AKT" sign="positive" minvalue="1"/>
394 <edge id="miR_34a:Sirt_1:1" from="miR_34a" to="Sirt_1" sign="negative" minvalue="1"/>
395 <edge id="E2F1:Sirt_1:1" from="E2F1" to="Sirt_1" sign="positive" minvalue="1"/>
396 <edge id="HDAC1:Sirt_1:1" from="HDAC1" to="Sirt_1" sign="negative" minvalue="1"/>
397 <edge id="DNA_Damage:HDAC1:1" from="DNA_Damage" to="HDAC1" sign="negative" minvalue="1"/>
398 <edge id="miR_34a:HDAC1:1" from="miR_34a" to="HDAC1" sign="negative" minvalue="1"/>
399 <edge id="Sirt_1:HDAC1:1" from="Sirt_1" to="HDAC1" sign="negative" minvalue="1"/>
400 <edge id="p53_K:PUMA:1" from="p53_K" to="PUMA" sign="positive" minvalue="1"/>
401 <edge id="miR_34a:BCL2:1" from="miR_34a" to="BCL2" sign="negative" minvalue="1"/>
402 <edge id="PUMA:BCL2:1" from="PUMA" to="BCL2" sign="negative" minvalue="1"/>
403 <edge id="p53_K:BAX:1" from="p53_K" to="BAX" sign="positive" minvalue="1"/>
404 <edge id="BCL2:BAX:1" from="BCL2" to="BAX" sign="negative" minvalue="1"/>
405 <edge id="p21:Caspase3:1" from="p21" to="Caspase3" sign="negative" minvalue="1"/>
406 <edge id="BCL2:Caspase3:1" from="BCL2" to="Caspase3" sign="negative" minvalue="1"/>
407 <edge id="BAX:Caspase3:1" from="BAX" to="Caspase3" sign="positive" minvalue="1"/>
408 <edge id="p53:Proliferation:1" from="p53" to="Proliferation" sign="negative" minvalue="1"/>
409 <edge id="E2F1:Proliferation:1" from="E2F1" to="Proliferation" sign="positive" minvalue="1"/>
410 <edge id="p21:Senescence:1" from="p21" to="Senescence" sign="positive" minvalue="1"/>
411 <edge id="E2F1:Senescence:1" from="E2F1" to="Senescence" sign="negative" minvalue="1"/>
412 <edge id="Caspase3:Apoptosis:1" from="Caspase3" to="Apoptosis" sign="positive" minvalue="1"/>
413 </graph>
414 </gxl>

```