Supplementary Material:

Single-cell tracking of A549 lung cancer cells exposed to a marine toxin reveals correlations in pedigree tree profiles

Mónica Suárez Korsnes * **and Reinert Korsnes**

*Correspondence:
Mónica Suárez Korsnes
monica.suarez.korsnes@nmbu.no

VIDEO ILLUSTRATING CELL TRACKING

The following video files represent an image each $6\,\text{min}$ during $94\,\text{h}$ for cells exposed to yessotoxin (YTX) at various concentrations:

- $200\,\text{nM}$: `https://www.korsnesbiocomputing.no/a549cells_0200nMr.mp4`
- $500\,\text{nM}$: `https://www.korsnesbiocomputing.no/a549cells_0500nMr.mp4`
- $1000\,\text{nM}$: `https://www.korsnesbiocomputing.no/a549cells_1000nMr.mp4`

The file `https://www.korsnesbiocomputing.no/a549control_cells_r.mp4` covers similar recording of control cells for about $26\,\text{h}$. See paper.

The square dots of various colours here tag cells which at start are in the red square large enough to contain 100 cells at start. The statistical results in the paper are derived from track data for these cells and their descendants. There are also circular (partly white) dots tagging cells in the video. These are auxiliary (typically incomplete) tracks for cells which are not in the red square at start (or among their descendants). The purpose of these tracks are to serve multi-target tracking.

PEDIGREE TREES

Figure S1 - S10 show pedigree trees for the subsequent period of $94\,\text{h}$ for three groups of cells each consisting of 100 individuals initially. The three groups of cells were respectively exposed to 200, 500 and $1000\,\text{nM}$ YTX. The trees are here ranked according to their "size". See paper.
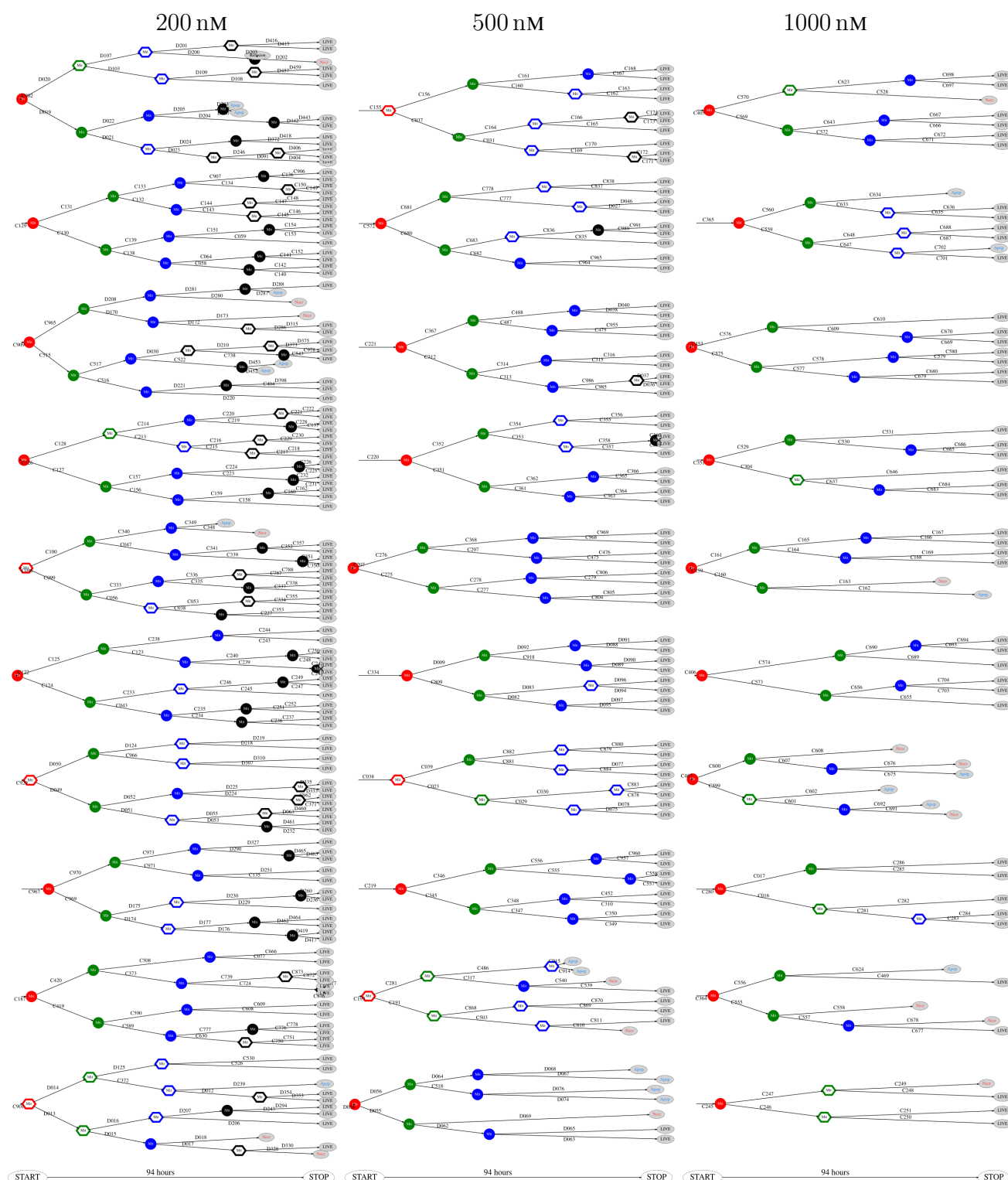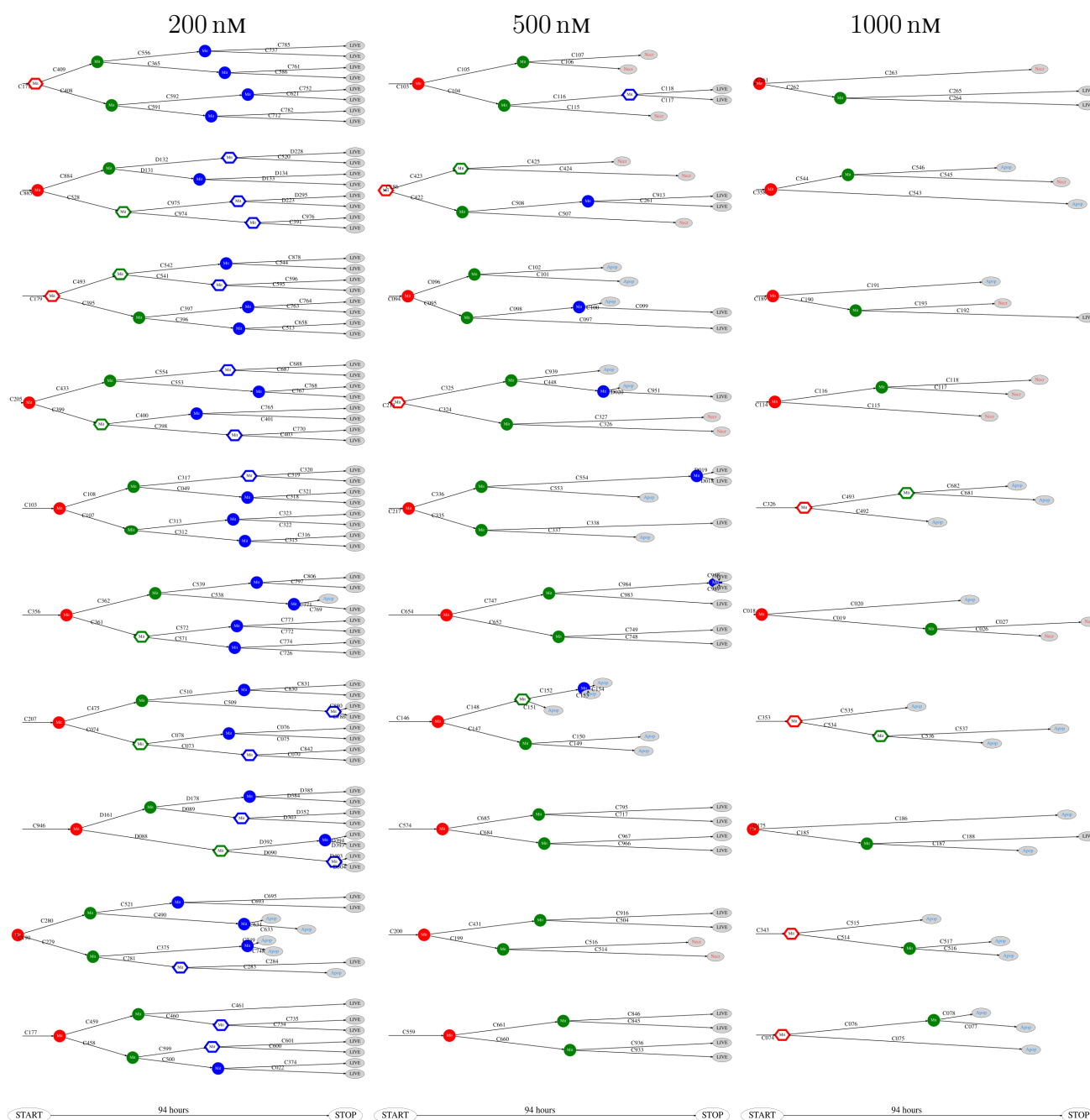
Figure S1. The 10 largest pedigree trees for cells exposed to 200, 500 and 1000 nм (respectively from left to right). Symbols: "Mit" represents mitosis. Circle here represents normal rounding during cell division whereas hexagon represents no normal rounding. "Apop" and "Necr" respectively represents apoptosis and necrosis. "LIVE" means the cell still lives at end of recording.
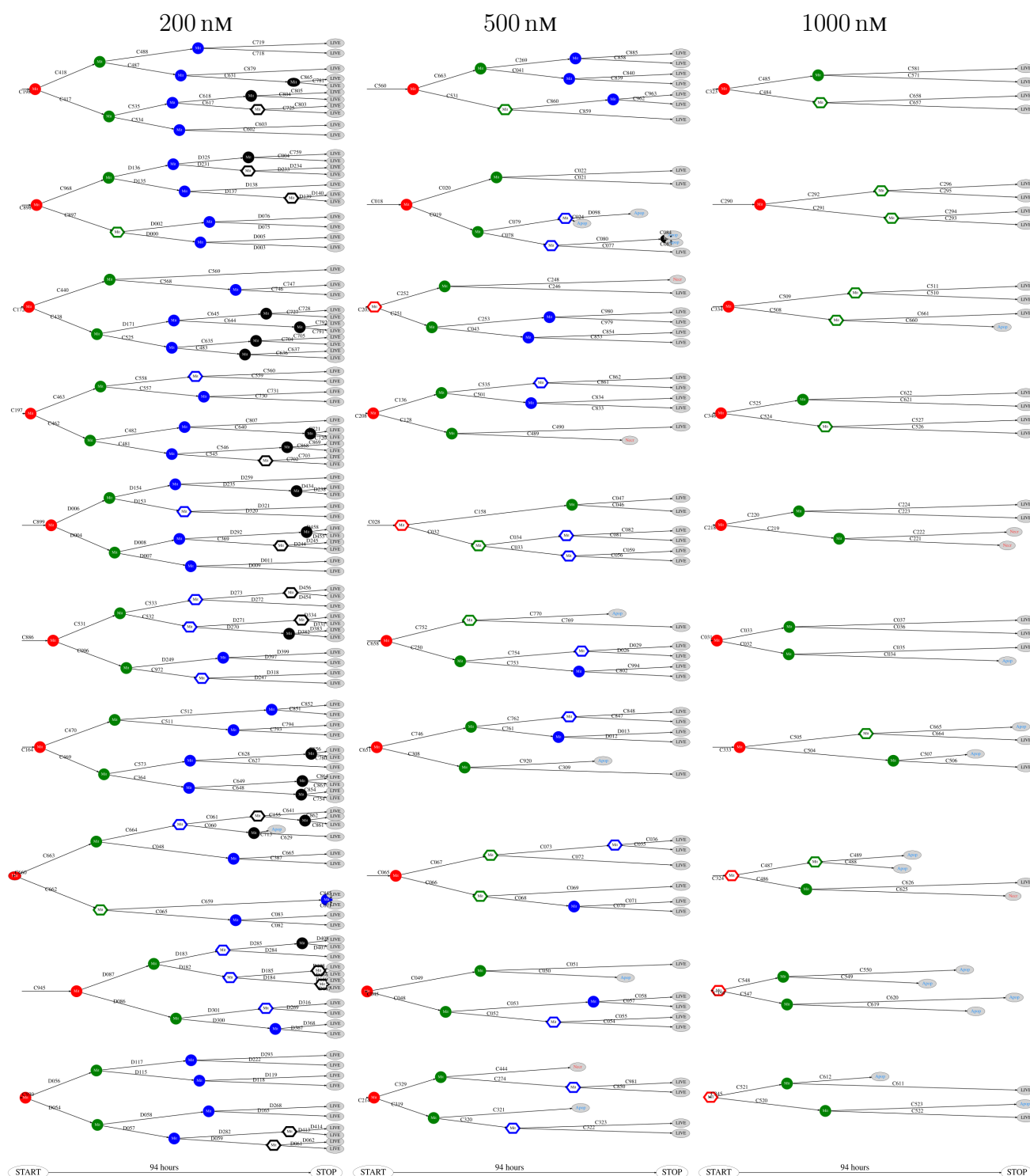
Figure S2. Pedigree trees with size number 11-20 for cells exposed to 200, 500 and 1000 nm (respectively from left to right). Symbols: "Mit" represents mitosis. Circle here represents normal rounding during cell division whereas hexagon represents no normal rounding. "Apop" and "Necr" respectively represents apoptosis and necrosis. "LIVE" means the cell still lives at end of recording.
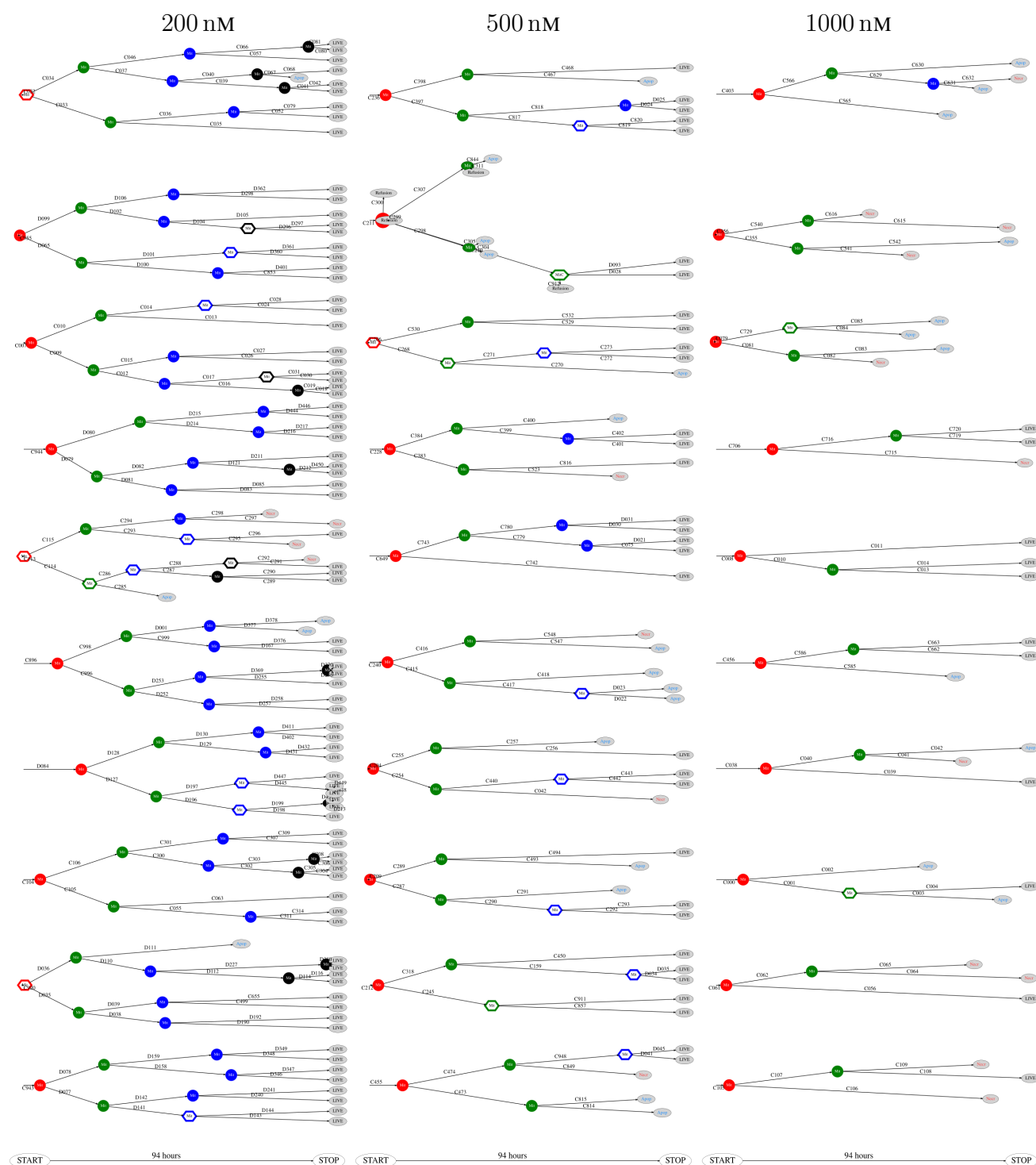
Figure S3. Pedigree trees with size number 21-30 for cells exposed to 200, 500 and 1000 nᴍ (respectively from left to right). Symbols: "Mit" represents mitosis. Circle here represents normal rounding during cell division whereas hexagon represents no normal rounding. "Apop" and "Necr" respectively represents apoptosis and necrosis. "LIVE" means the cell still lives at end of recording.
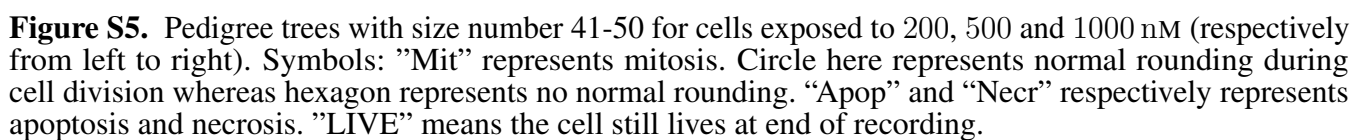
Figure S4. Pedigree trees with size number 31-40 for cells exposed to 200, 500 and 1000 nM (respectively from left to right). Symbols: "Mit" represents mitosis. Circle here represents normal rounding during cell division whereas hexagon represents no normal rounding. "Apop" and "Necr" respectively represents apoptosis and necrosis. "LIVE" means the cell still lives at end of recording.
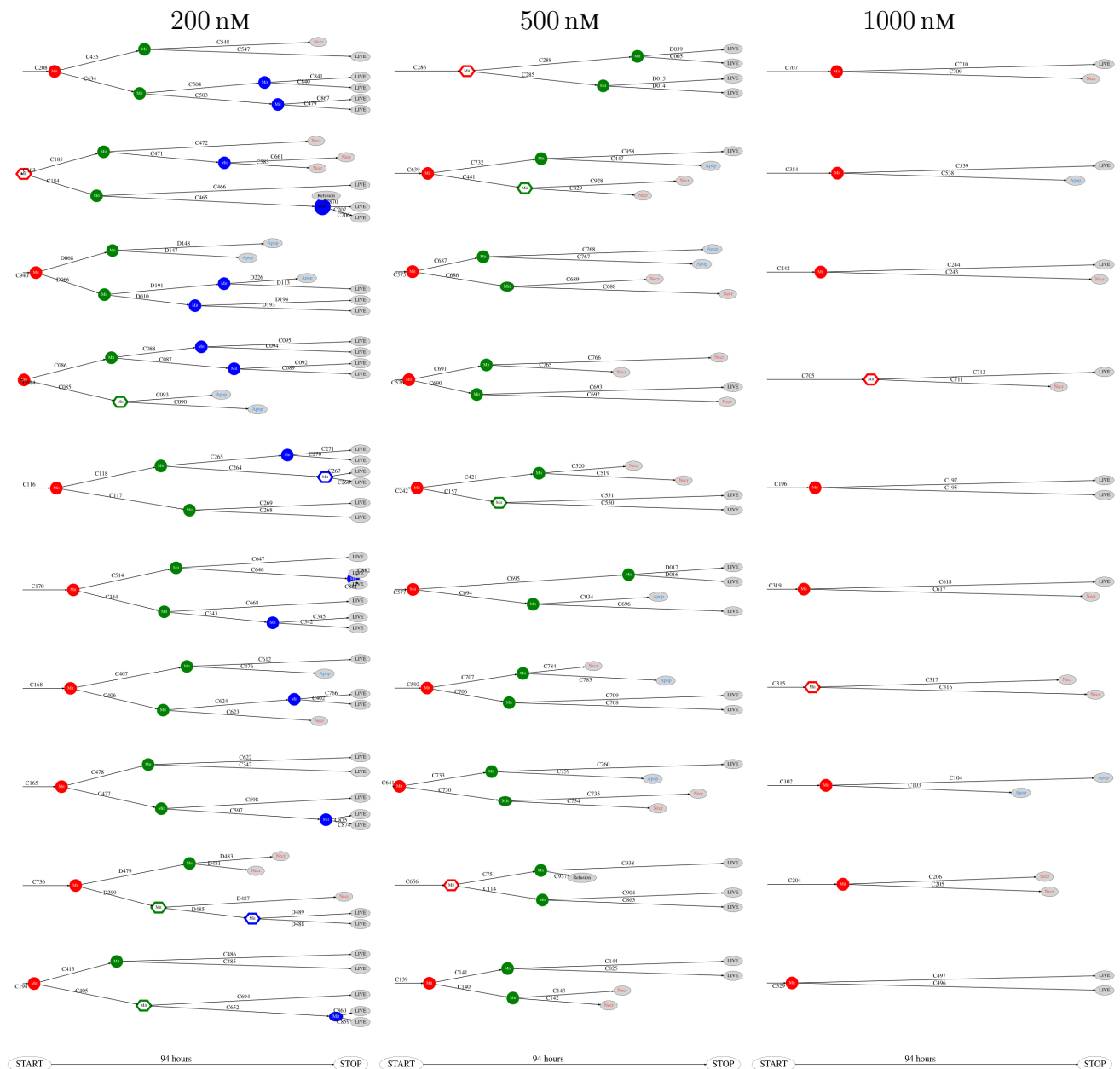
Figure S5. Pedigree trees with size number 41-50 for cells exposed to 200, 500 and 1000 nM (respectively from left to right). Symbols: "Mit" represents mitosis. Circle here represents normal rounding during cell division whereas hexagon represents no normal rounding. "Apop" and "Necr" respectively represents apoptosis and necrosis. "LIVE" means the cell still lives at end of recording.
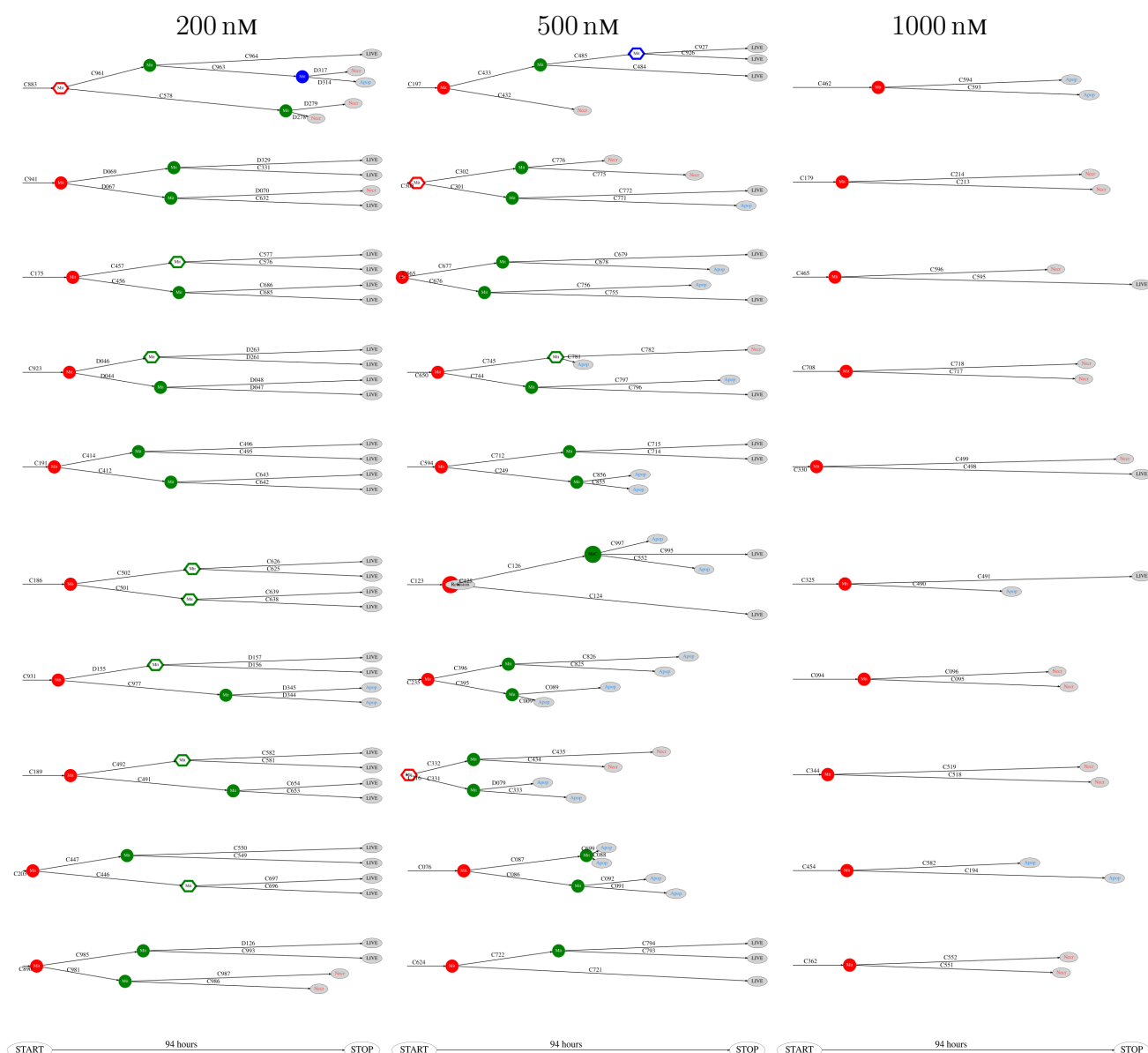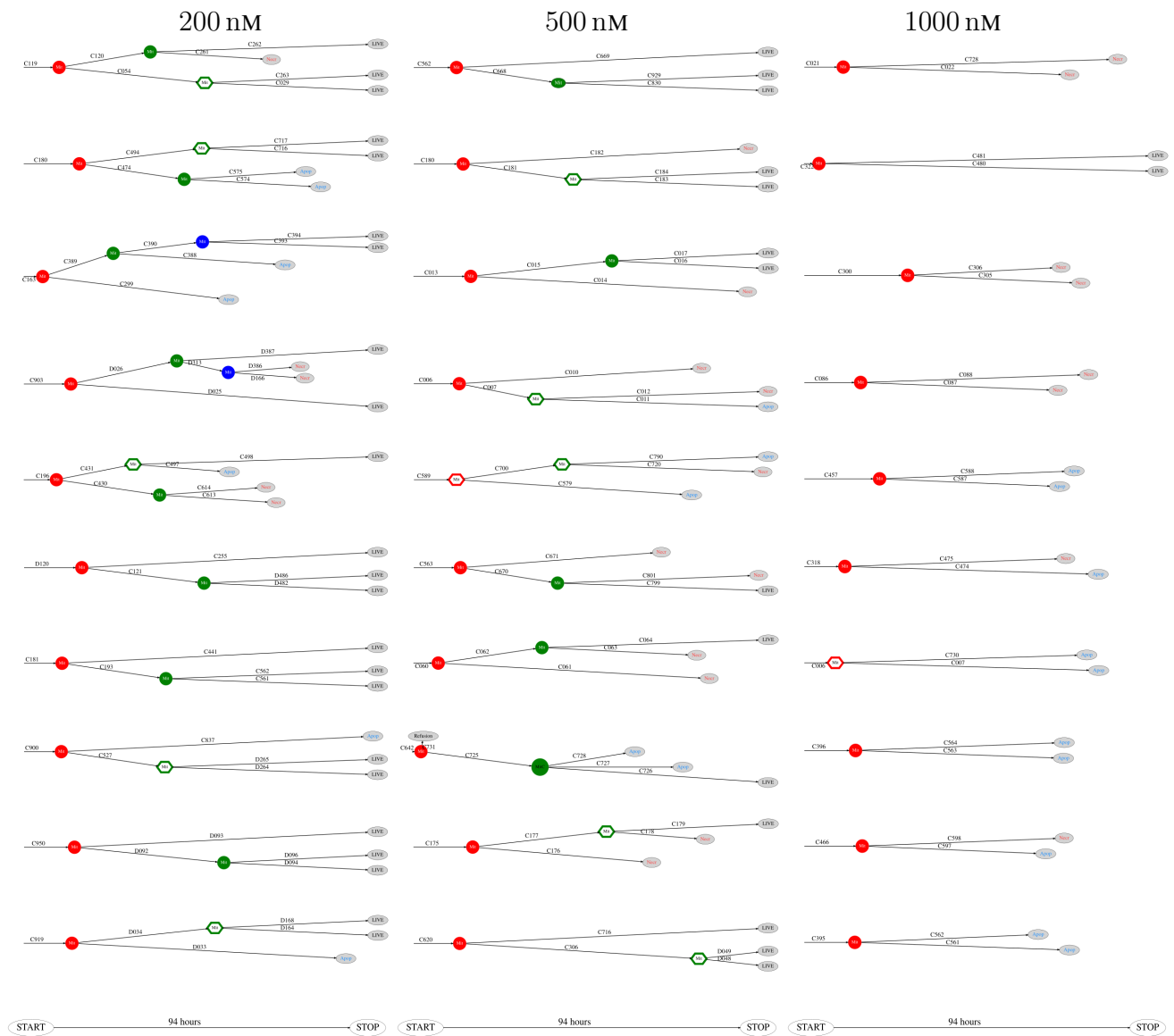
Figure S6. Pedigree trees with size number 51-60 for cells exposed to 200, 500 and 1000 nM (respectively from left to right). Symbols: "Mit" represents mitosis. Circle here represents normal rounding during cell division whereas hexagon represents no normal rounding. "Apop" and "Necr" respectively represents apoptosis and necrosis. "LIVE" means the cell still lives at end of recording.

Figure S7. Pedigree trees with size number 61-70 for cells exposed to 200, 500 and 1000 nм (respectively from left to right). Symbols: "Mit" represents mitosis. Circle here represents normal rounding during cell division whereas hexagon represents no normal rounding. "Apop" and "Necr" respectively represents apoptosis and necrosis. "LIVE" means the cell still lives at end of recording.

Figure S8. Pedigree trees with size number 71-80 for cells exposed to 200, 500 and 1000 nM (respectively from left to right). Symbols: "Mit" represents mitosis. Circle here represents normal rounding during cell division whereas hexagon represents no normal rounding. "Apop" and "Necr" respectively represents apoptosis and necrosis. "LIVE" means the cell still lives at end of recording.
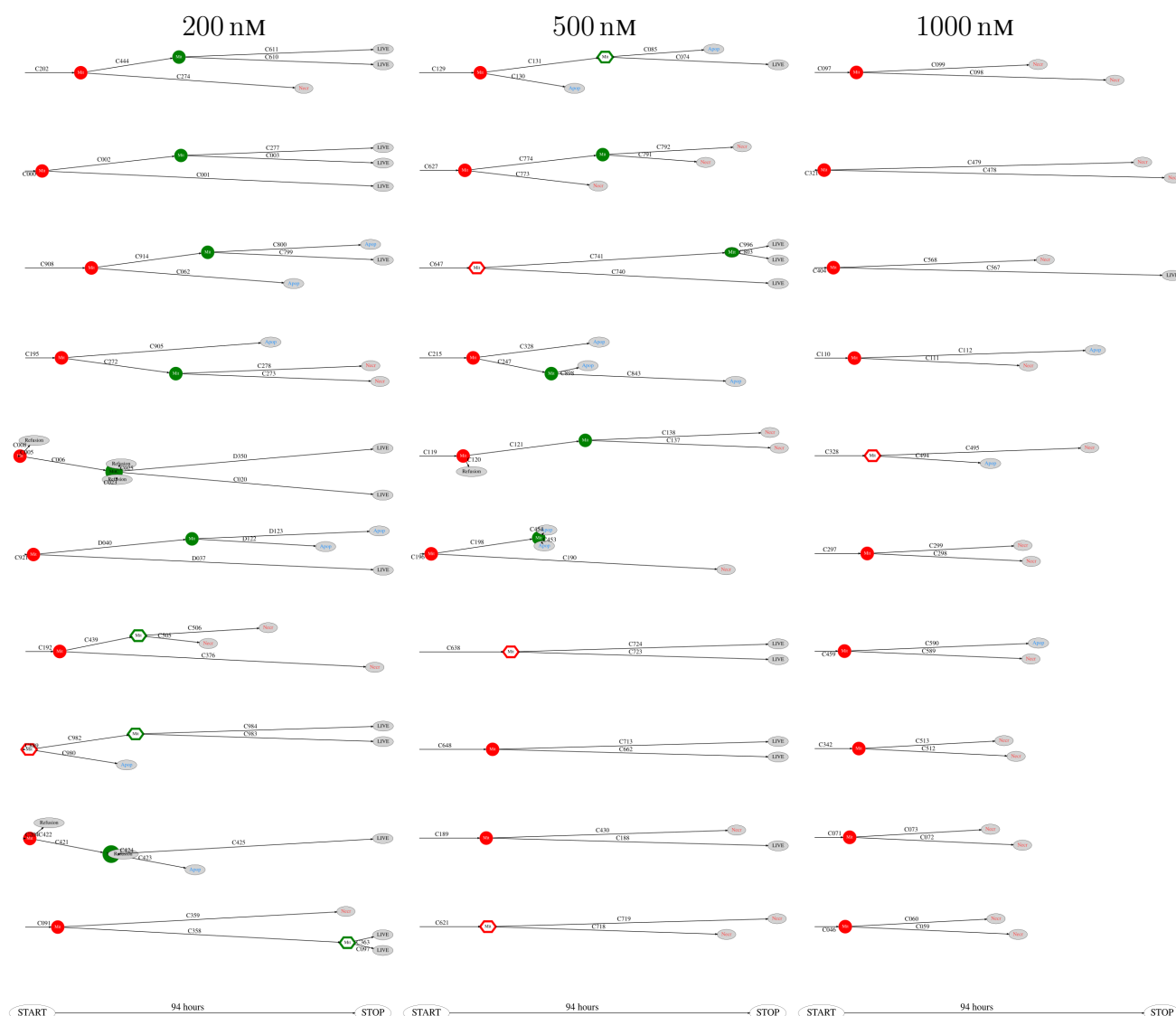
Figure S9. Pedigree trees with size number 81-90 for cells exposed to 200, 500 and 1000 nM (respectively from left to right). Symbols: "Mit" represents mitosis. Circle here represents normal rounding during cell division whereas hexagon represents no normal rounding. "Apop" and "Necr" respectively represents apoptosis and necrosis. "LIVE" means the cell still lives at end of recording.

Figure S10. Pedigree trees with size number 91-100 for cells exposed to 200, 500 and 1000 nM (respectively from left to right). Symbols: "Mit" represents mitosis. Circle here represents normal rounding during cell division whereas hexagon represents no normal rounding. "Apop" and "Necr" respectively represents apoptosis and necrosis. "LIVE" means the cell still lives at end of recording.