The initial total volume is 10mL. The volume of medium is 10 – Vcells

Where Vcells = Ncells\*Vcell = 5.4\*10^7\*2.276\*10^-9 = 0.1229mL

Therefore the volume of medium before the drug is added = 10 – 0.1229 = 9.8771mL

If (as in tarlox.inp) the added volume is 0.05mL, then the volume of medium is Vmedium = 9.9271.

If the medium concentration is Cm and the intracellular concentration is Ci, then the total mass of drug is Cm\*Vmedium + Ci\*Vcells

(Note that there is a rather crude approximation here, identifying the intracellular volume with the cell volume.)

Using the tarlox.inp protocol, the mass of drug added is 1100\*0.05 = 55 (units?)

The initial drug concentration in the medium is 55/9.9271 = 5.54uM

With the code fixes, the final concentrations are:

Cm = 1.379, Ci = 340.2

Therefore the final mass = medium mass + IC mass = 1.379\*9.9271 + 340.2\*0.1229 = 55.5.

This shows a small increase in mass of about 0.9%. I’m not sure where that happens.