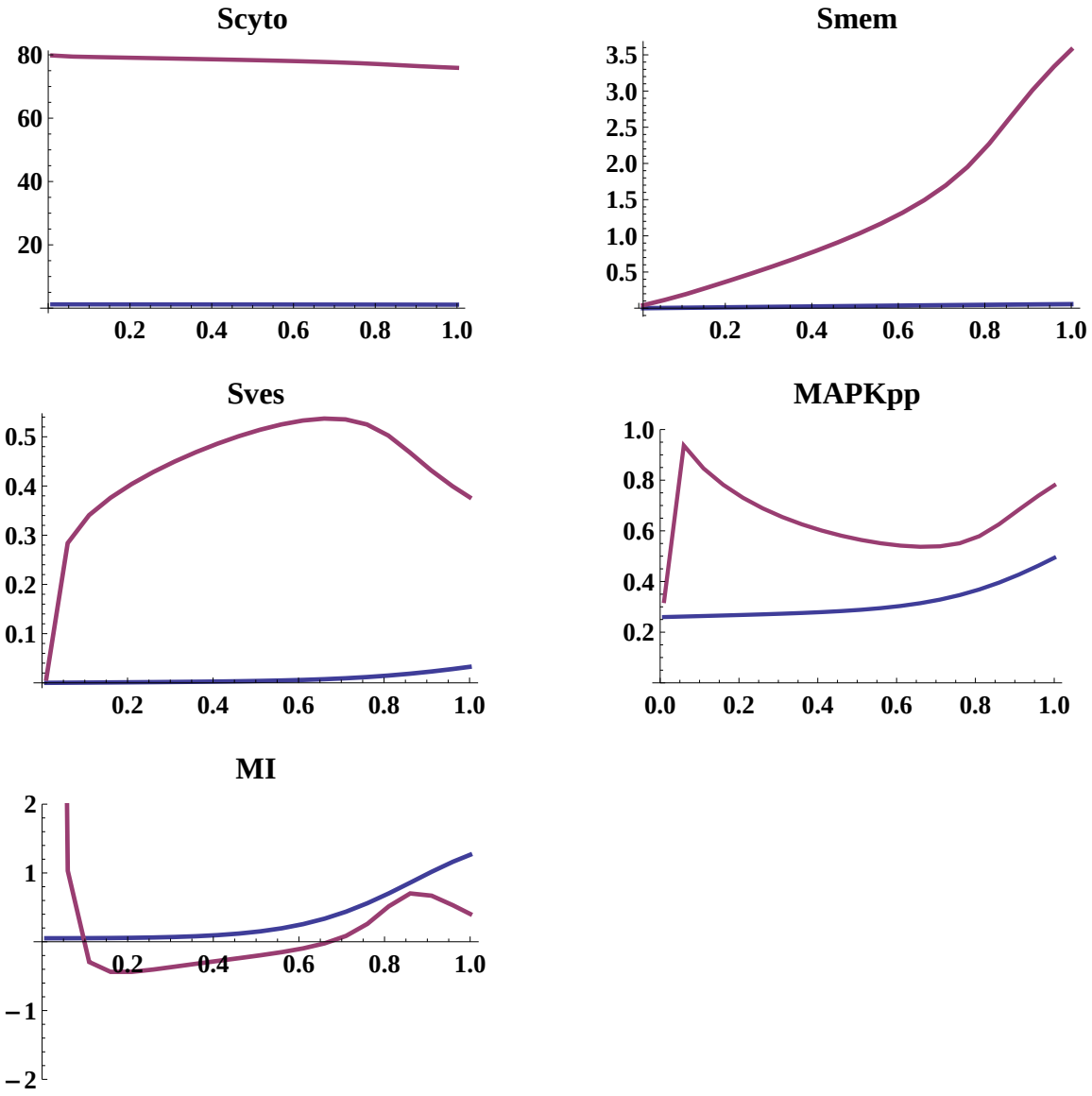
Varying dose from (0.0, 1.0]

—— Native scaffold expression

—— Overexpressed scaffold expression

Out[129]=



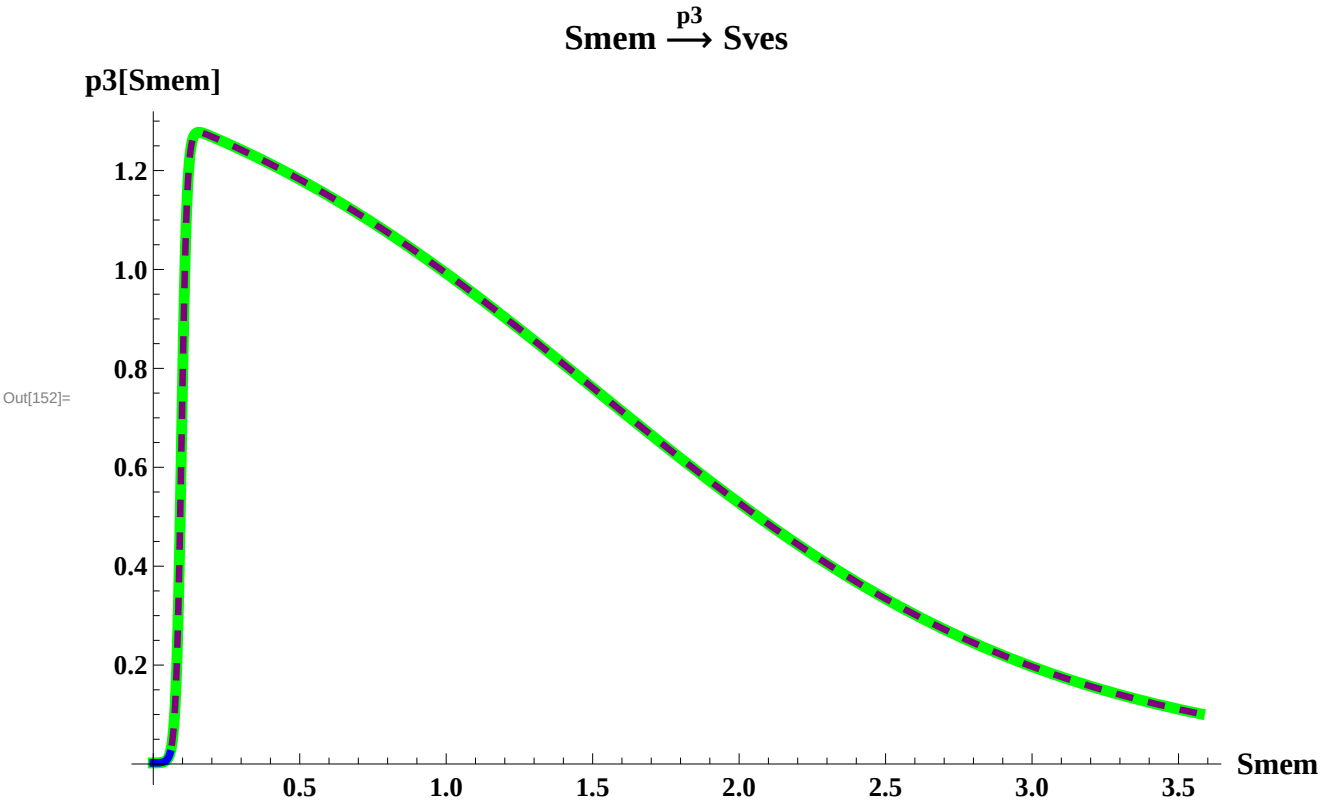
Traversing the membrane to vesicle rate curve

——Native scaffold expression

——Overexpressed scaffold expression

——Biphasic rate curve

Out[152]=



The native case is very low and remains on the left tail of the rate curve (the tiny blue blip on the left)

The overexpress case fully traverses both sides of the bell curve

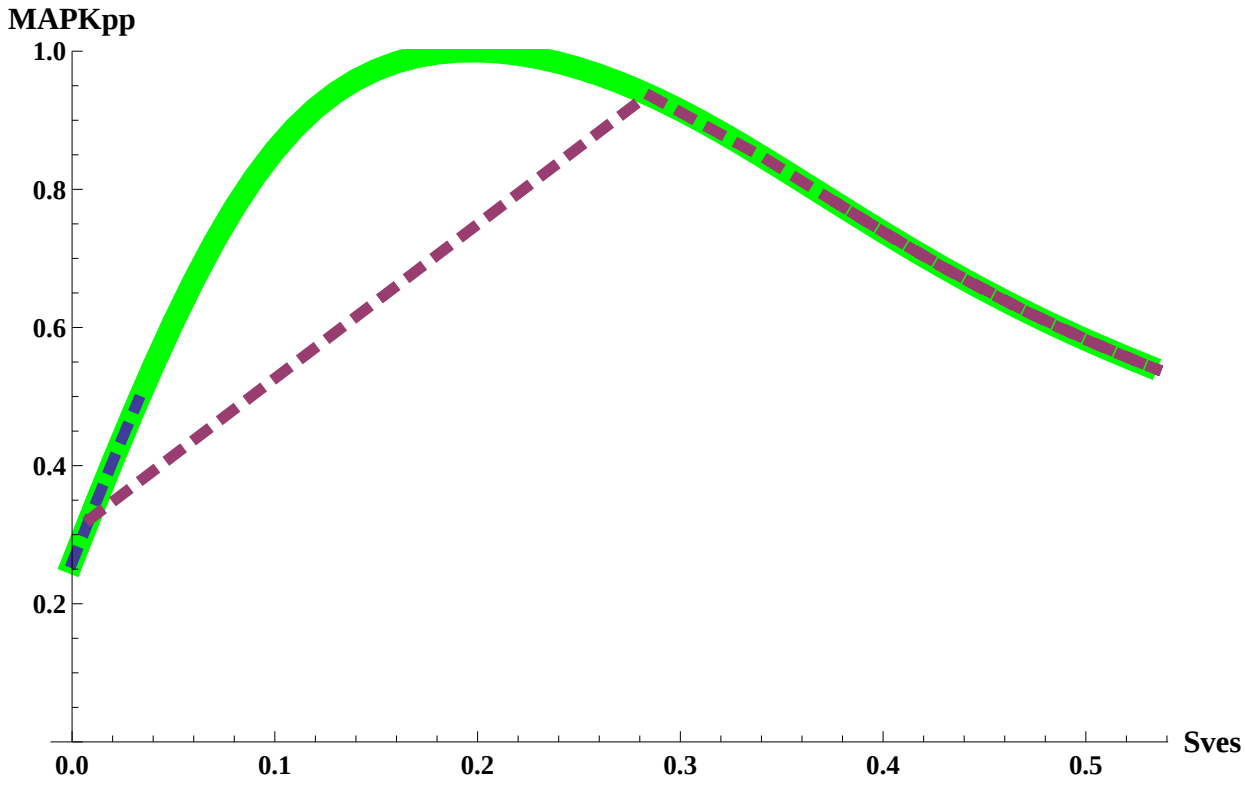
Traversing the MAPKpp response curve in the native and OE case:

——Native scaffold expression

——Overexpressed scaffold expression

——Biphasic dose response curve

Out[138]=



The green is the continuous curve which is the open-loop model purely using vesicle as input and MAPKpp activity as output from the PNAS paper

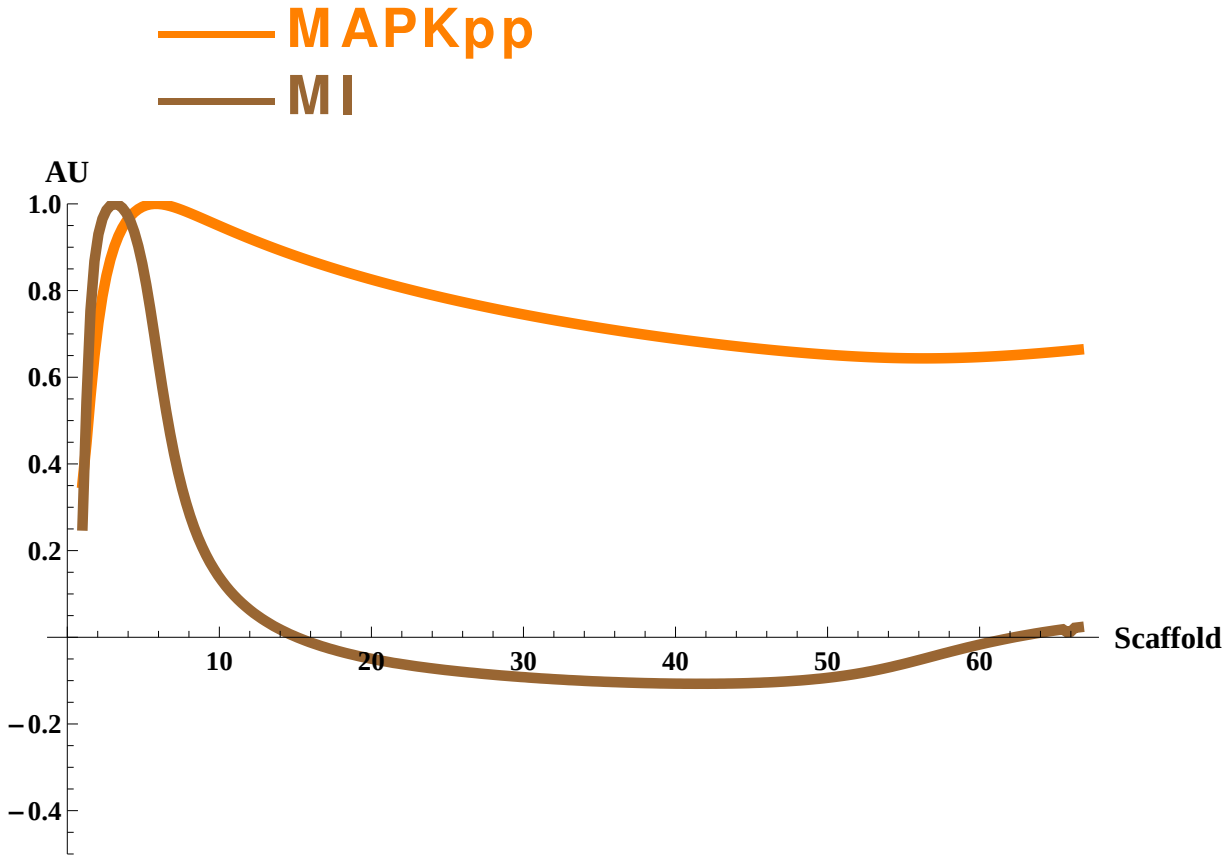
The dotted lines are a product of the new models transport simulations. (Cyto→Mem→Ves)

The overexpressed case jumps rapidly since dose is discretize from 0.0 to 1.0 over small increments. Where the dashing

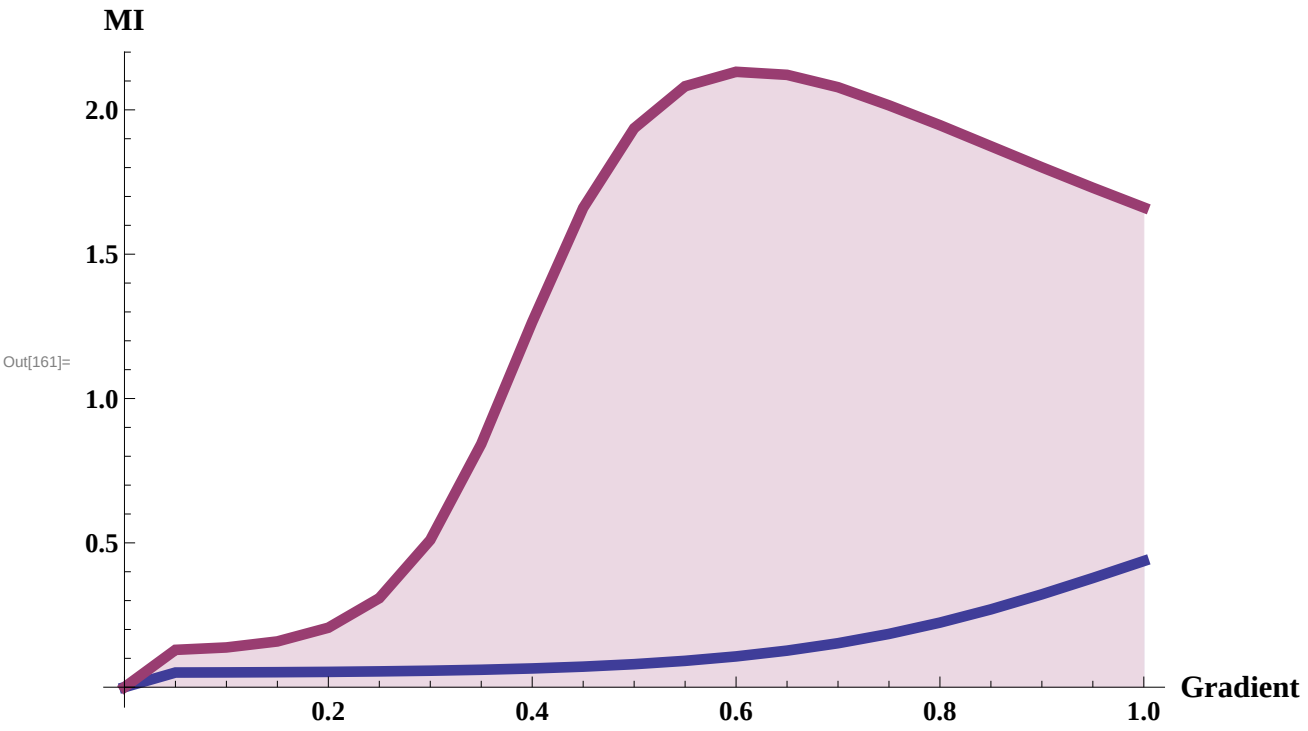
changes on the right is where the response goes back on itself.

Varying scaffold from Native to Overexpressed levels

Out[176]=



Out[161]=


Varying gradient (from 1.0 x original gradient)
Native scaffold expression
Optimal scaffold expression
MI
2.0
1.5
1.0
0.5
0.2
0.4
0.6
0.8
1.0
Gradient