



RQ1 Research question

Type	Label
Description	Estimate the effects of various mutations in APC and other known mutations using a recent mathematical model of the Wnt pathway
Study	Cho et al. 2006

QM1 Qualitative model

Type	Label
Description	Reaction scheme for Wnt signaling pathway (pathway model of Lee et al. 2003 with additional negative feedback on Axin)
Reference	Figure 1
Species	Wnt, Dsh, GSK3, APC, β -catenin, Axin, TCF
Compartments	Cytosol
Study	Cho et al. 2006

A1 Assumption

Type	Label
Description	“Axin1 and Axin2 are combined into ‘Axin’ because their function is believed to be largely equivalent. The introduced Axin2 synthesis term is set to have a range of small values so that the overall Axin (1 and 2) concentration remains in the similar low range as in the original model.”
Category	Equivalence (392)
Study	Cho et al. 2006

A2 Assumption

Type	Label
Description	“Combined the two molecular species β -catenin and β -catenin/TCF and termed them ‘available β -catenin’” because “the binding of β -catenin to TCF would take more time due to translocation into the nucleus”
Category	Equivalence (392)
Study	Cho et al. 2006

A3 Assumption

Type	Label
Description	“We fixed k_+ for reactions 7, 8, 16, and 17 to be 1. Then their dissociation rates k_- for the wild type are 50, 120, 30, and 1200, respectively, by the formula $K = k_- / k_+$.”
Category	Kinetic constant (9)
Study	Cho et al. 2006

BSM1 Building simulation model

Type	Label
Description	“adjustment on the Lee model was inclusion of the negative feedback provided by β -catenin/TCF-induced synthesis of Axin2” without using the approximations of Lee et al. 2003
Study	Krüger and Heinrich 2004

SM1 Simulation model

Type	Label
Description	Wnt model of Lee et al. 2003 with additional negative feedback on Axin
Reference	Not available
Study	Cho et al. 2006

VSM1 Validating simulation model

Type	Label
Description	Model (face) validation
Study	Cho et al. 2006

SE1 Experiment

Type	Label
Description	“Since an accurate measurement of this synthesis rate is not available, we also varied this rate constant (k_{18}) and confirmed that our qualitative conclusions are not affected by specific values of this parameter.”
Reference	Not available
Category	Parameter scan
Study	Cho et al. 2006

SD1 Data

Type	Label
Description	Simulation results of SE1 (validation successful)
Reference	Not shown
Related to	SE1
Study	Cho et al. 2006

ASM1 Analyzing simulation model

Type	Label
Description	Simulation model analysis
Study	Cho et al. 2006

SE2 Experiment

Type	Label
Description	“effects of individual mutations on β -catenin signaling (steady state) output.” (16 simulation experiments with different parameters, observable: available β -catenin)
Reference	Not available
Category	Perturbation
Study	Cho et al. 2006

SD2 Data

Type	Label
Description	Simulation results of SE2
Reference	Figure 3
Related to	SE2
Study	Cho et al. 2006

SE3 Experiment

Type	Label
Description	“we varied k_{13} to mimic the activity level of Axin-independent degradation in different tissues”
Reference	Not available
Category	Parameter scan
Study	Cho et al. 2006

SD3 Data

Type	Label
Description	Simulation results of SE3
Reference	Figure 4
Related to	SE3
Study	Cho et al. 2006