

Table 1. Numeric Values of Input Quantities of the Model for the Reference State

Symbol	Description	Reference value
<i>Concentrations</i>		
Dsh^0	total Dsh	100 nM
APC^0	total APC	100 nM
TCF^0	total TCF	15 nM
GSK^0	total GSK3 β	50 nM
$Axin^0$	total axin	0.02 nM
$\beta\text{-catenin}^0$	total β -catenin	35 nM
$\beta\text{-catenin}^*$	free phosphorylated β -catenin	<i>1 nM</i>
<i>Dissociation constants</i>		
K_6	binding of GSK3 β to (APC/axin)	<i>10 nM</i>
K_7	binding of APC to axin	<i>50 nM</i>
K_8	binding of β -catenin to (APC/axin/GSK3 β)	<i>120 nM</i>
K_{16}	binding of β -catenin to TCF	<i>30 nM</i>
K_{17}	binding of β -catenin to APC	<i>1200 nM</i>
<i>Concentration ratios</i>		
$\frac{(APC^*/Axin^*/GSK3\beta)}{(APC/Axin/GSK3\beta)}$		2
$\frac{(\beta\text{-catenin}^*/APC^*/Axin^*/GSK3\beta)}{(\beta\text{-catenin}/APC^*/Axin^*/GSK3\beta)}$		1
<i>Flux and flux ratio</i>		
v_{11}	degradation flux of β -catenin via the proteasome	25 nM/h
v_{13}/v_{11}		0.015
<i>Characteristic times</i>		
$\tau_{K,P}$	phosphorylation/dephosphorylation of APC and axin	<i>2.5 min</i>
$\tau_{GSK,ass}$	GSK3 β association/dissociation	<i>1 min</i>
$\tau_{ax,deg}$	Axin degradation	6 min

The data are grouped into concentrations of pathway components, dissociation constants of protein complexes, concentration ratios, fluxes and flux ratios, and characteristic times of selected processes. Experimental evidence for these data is discussed in the text. From these data, the following rates and rate constants are calculated: $v_{12} = 0.42 \text{ nM} \cdot \text{min}^{-1}$ (rate of β -catenin synthesis), $v_{14} = 8.2 \cdot 10^{-5} \cdot \text{nM} \cdot \text{min}^{-1}$ (rate of axin synthesis), $k_4 = 0.27 \text{ min}^{-1}$, $k_5 = 0.13 \text{ min}^{-1}$, $k_6 = 9.1 \cdot 10^{-2} \text{ nM}^{-1} \cdot \text{min}^{-1}$, $k_8 = 0.91 \cdot \text{nM}^{-1} \cdot \text{min}^{-1}$, $k_9 = 210 \text{ min}^{-1}$, $k_{10} = 210 \text{ min}^{-1}$, $k_{11} = 0.42 \text{ min}^{-1}$, $k_{13} = 2.6 \cdot 10^{-4} \text{ min}^{-1}$, $k_{15} = 0.17 \cdot \text{min}^{-1}$. See Table S2, found at <http://dx.doi.org/10.1371/journal.pbio.0000010.t002>, for more precise numbers used in the calculations.

Bold: Measured values, Italics: Estimated values.
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