

Table 2. Dimensionless groups of the model and their reference values

Parameter	Description	Reference value
χ	$\frac{\text{time scale of constitutive deactivation of MPK-1}^*}{\text{time scale of lateral signal-mediated deactivation of MPK-1}^*}$	1
ψ	$\frac{\text{time scale of MPK-1}^*\text{-mediated downregulation of lateral signal}}{\text{time scale of constitutive deactivation of MPK-1}^*}$	2.8×10^1
μ	$\frac{\text{time scale of constitutive deactivation of MPK-1}^*}{\text{time scale of induced activation of MPK-1}^*}$	2×10^1
λ_d	$\frac{\text{time scale of constitutive deactivation of MPK-1}^*}{\text{time scale of constitutive downregulation of lateral signal}}$	2.4×10^{-2}
λ_s	$\frac{\text{time scale of constitutive deactivation of MPK-1}^*}{\text{time scale of constitutive synthesis of a characteristic amount of lateral signal}}$	3.9×10^{-4}
κ_M	dimensionless threshold for activation of lateral signal by MPK-1*	2.5×10^{-1}
κ_L	dimensionless threshold for MPK-1* inhibition by lateral signal	2.5×10^{-1}