



$$\frac{d([PAMP] \cdot V_{Cell})}{dt} = -(k1_{("PAMP\ recognition")} \cdot [PRR] \cdot [PAMP] - k2_{("PAMP\ recognition")} \cdot ["PRR*"])$$

$$-V_{Cell} \cdot k1_{("PAMP\ removal")} \cdot [PAMP] \\ + k1_{("PAMP\ production")} \cdot [Path]$$

$$\frac{d([R] \cdot V_{Cell})}{dt} = -V_{Cell} \cdot (k1_{("Effector\ recognition")} \cdot [R] \cdot [E_int] - k2_{("Effector\ recognition")} \cdot ["R*"])$$

$$\frac{d(["R*"] \cdot V_{Cell})}{dt} = +V_{Cell} \cdot (k1_{("Effector\ recognition")} \cdot [R] \cdot [E_int] - k2_{("Effector\ recognition")} \cdot ["R*"])$$

$$\frac{d([E_int] \cdot V_{Cell})}{dt} = -V_{Cell} \cdot (k1_{("Effector\ recognition")} \cdot [R] \cdot [E_int] - k2_{("Effector\ recognition")} \cdot ["R*"])$$

$$+ "Competitive\ inhibition\ (irr)"([E], [Callose], Km_{("Effector\ translocation")}, V_{("Effector\ translocation")}, Ki_{("Effector\ translocation")}) \\ -V_{Cell} \cdot k1_{("E_int\ removal")} \cdot [E_int]$$

$$\frac{d([Callose] \cdot V_{Cell})}{dt} = +k1_{("Callose\ production")} \cdot ["PRR*"]$$

$$-V_{Cell} \cdot k1_{("Callose\ removal")} \cdot [Callose] \\ -V_{Cell} \cdot k1_{("Callose\ suppression")} \cdot [Callose] \cdot [E_int]$$

$$\frac{d([Path] \cdot V_{Apoplast})}{dt} = -V_{Apoplast} \cdot k1_{(PTI)} \cdot [Path] \cdot ["PRR*"]$$

$$+V_{Apoplast} \cdot k1_{("Pathogen\ arrival")} \cdot [Path_bulk] \\ -V_{Apoplast} \cdot k1_{("Pathogen\ removal")} \cdot [Path] \\ -k1_{(ETI)} \cdot [Path] \cdot ["R*"]$$

$$\frac{d(["PRR*"] \cdot V_{Apoplast})}{dt} = +(k1_{("PAMP\ recognition")} \cdot [PRR] \cdot [PAMP] - k2_{("PAMP\ recognition")} \cdot ["PRR*"])$$

$$\frac{d([PRR] \cdot V_{Apoplast})}{dt} = -(k1_{("PAMP\ recognition")} \cdot [PRR] \cdot [PAMP] - k2_{("PAMP\ recognition")} \cdot ["PRR*"])$$

$$\frac{d([E] \cdot V_{Apoplast})}{dt} = -"Competitive\ inhibition\ (irr)"([E], [Callose], Km_{("Effector\ translocation")}, V_{("Effector\ translocation")}, Ki_{("Effector\ translocation")})$$

$$-V_{Apoplast} \cdot k1_{("Effector\ removal")} \cdot [E] \\ +V_{Apoplast} \cdot k1_{("Effector\ production")} \cdot [Path]$$