

# the\_pentose\_phosphate\_pathway\_model

## 1 “global\_variables” component

This component has no equations.

## 2 “Glucose\_6\_phosphate” component

$$\frac{d(\text{Glucose}_6\text{phosphate})}{d(\text{time})} = \text{delta\_Glucose}_6\text{phosphate\_rxn0}$$

## 3 “Phosphoglucono\_lactone\_6” component

$$\frac{d(\text{Phosphoglucono\_lactone}_6)}{d(\text{time})} = (\text{delta\_Phosphoglucono\_lactone}_6\text{rxn0} + \text{delta\_Phosphoglucono\_lactone}_6\text{rxn1})$$

## 4 “Phosphogluconate\_6” component

$$\frac{d(\text{Phosphogluconate}_6)}{d(\text{time})} = (\text{delta\_Phosphogluconate}_6\text{rxn1} + \text{delta\_Phosphogluconate}_6\text{rxn2})$$

## 5 “Ribulose\_5\_phosphate” component

$$\frac{d(\text{Ribulose}_5\text{phosphate})}{d(\text{time})} = (\text{delta\_Ribulose}_5\text{phosphate\_rxn2} + \text{delta\_Ribulose}_5\text{phosphate\_rxn3} + \text{delta\_Ribulose}_5\text{phosphate\_rxn4})$$

## 6 “Xylulose\_5\_phosphate” component

$$\frac{d(\text{Xylulose}_5\text{-phosphate})}{d(\text{time})} = (\text{delta\_Xylulose}_5\text{-phosphate\_rxn3} + \text{delta\_Xylulose}_5\text{-phosphate\_rxn7} + \text{delta\_Xylulose}_5\text{-phosphate\_rxn5})$$

## 7 “Ribose\_5\_phosphate” component

$$\frac{d(\text{Ribose}_5\text{-phosphate})}{d(\text{time})} = (\text{delta\_Ribose}_5\text{-phosphate\_rxn4} + \text{delta\_Ribose}_5\text{-phosphate\_rxn5})$$

## 8 “Glyceraldehyde\_3\_phosphate” component

$$\frac{d(\text{Glyceraldehyde}_3\text{-phosphate})}{d(\text{time})} = (\text{delta\_Glyceraldehyde}_3\text{-phosphate\_rxn5} + \text{delta\_Glyceraldehyde}_3\text{-phosphate\_rxn10} + \text{delta\_Glyceraldehyde}_3\text{-phosphate\_rxn6} + \text{delta\_Glyceraldehyde}_3\text{-phosphate\_rxn7})$$

## 9 “Sedoheptulose\_7\_phosphate” component

$$\frac{d(\text{Sedoheptulose}_7\text{-phosphate})}{d(\text{time})} = (\text{delta\_Sedoheptulose}_7\text{-phosphate\_rxn5} + \text{delta\_Sedoheptulose}_7\text{-phosphate\_rxn6})$$

## 10 “Erythrose\_4\_phosphate” component

$$\frac{d(\text{Erythrose}_4\text{-phosphate})}{d(\text{time})} = (\text{delta\_Erythrose}_4\text{-phosphate\_rxn6} + \text{delta\_Erythrose}_4\text{-phosphate\_rxn7})$$

## 11 “Fructose\_6\_phosphate” component

$$\frac{d(\text{Fructose}_6\text{-phosphate})}{d(\text{time})} = (\text{delta\_Fructose}_6\text{-phosphate\_rxn6} + \text{delta\_Fructose}_6\text{-phosphate\_rxn9} + \text{delta\_Fructose}_6\text{-phosphate\_rxn7} + \text{delta\_Fructose}_6\text{-phosphate\_rxn8})$$

## 12 “NADP” component

$$\frac{d(\text{NADP})}{d(\text{time})} = (\text{delta\_NADP\_rxn0} + \text{delta\_NADP\_rxn2})$$

### 13 “NADPH” component

$$\frac{d(NADPH)}{d(time)} = (delta\_NADPH\_rxn0 + delta\_NADPH\_rxn2)$$

### 14 “H” component

$$\frac{d(H)}{d(time)} = delta\_H\_rxn0$$

### 15 “H2O” component

$$\frac{d(H2O)}{d(time)} = (delta\_H2O\_rxn1 + delta\_H2O\_rxn9)$$

### 16 “CO2” component

$$\frac{d(CO2)}{d(time)} = delta\_CO2\_rxn2$$

### 17 “Fructose\_1\_6\_bisphosphate” component

$$\frac{d(Fructose\_1\_6\_bisphosphate)}{d(time)} = (delta\_Fructose\_1\_6\_bisphosphate\_rxn8 + delta\_Fructose\_1\_6\_bisphosphate\_rxn9 + delta\_Fructose\_1\_6\_bisphosphate\_rxn10)$$

### 18 “Pi” component

$$\frac{d(Pi)}{d(time)} = delta\_Pi\_rxn9$$

### 19 “ATP” component

$$\frac{d(ATP)}{d(time)} = delta\_ATP\_rxn8$$

## 20 “ADP” component

$$\frac{d(ADP)}{d(time)} = \text{delta\_ADP\_rxn8}$$

## 21 “Glucose\_6\_phosphate\_dehydrogenase” component

This component has no equations.

## 22 “Lactonase” component

This component has no equations.

## 23 “Phosphogluconate\_6\_dehydrogenase” component

This component has no equations.

## 24 “Phosphopentose\_isomerase” component

This component has no equations.

## 25 “Phosphopentose\_epimerase” component

This component has no equations.

## 26 “Transketolase” component

This component has no equations.

## 27 “Transaldolase” component

This component has no equations.

## 28 “Fructose\_1\_6\_bisphosphatase” component

This component has no equations.

## **29 “Phosphofructokinase” component**

This component has no equations.

## **30 “Aldolase” component**

This component has no equations.

## **31 “reaction0” component**

This component has no equations.

## **32 “reaction1” component**

This component has no equations.

## **33 “reaction2” component**

This component has no equations.

## **34 “reaction3” component**

This component has no equations.

## **35 “reaction4” component**

This component has no equations.

## **36 “reaction5” component**

This component has no equations.

## **37 “reaction6” component**

This component has no equations.

### **38 “reaction7” component**

This component has no equations.

### **39 “reaction8” component**

This component has no equations.

### **40 “reaction9” component**

This component has no equations.

### **41 “reaction10” component**

This component has no equations.