

## APPENDIX C: GenMAPP Version 2.0 Pathway DTD

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<!-- GenMAPP Version 2.0 Pathway DTD Version 1.0 -->
<!--All graphics measurements are in centimeters -->
<!-- The three elements pathway, protein, and line encompass the -->
<!-- pathway data in this map. -->

<!ELEMENT pathway ( GeneProduct*, Line*, Label*, Shape*,
SmallMoleculeShape*, CellShape*, CellComponentShape*,
ProteinComplexShape*)>
<!ATTLIST pathway Name          CDATA          #IMPLIED>
    <!-- GenMAPP pathway title -->
<!ATTLIST pathway Organism      CDATA          #IMPLIED>
    <!-- GenMAPP maps have organism implied in file name. -->
    <!-- and are generally not visible on map. -->
    <!-- When exporting maps from GenMAPP organism -->
    <!-- be declared to preserve this information -->
    <! When importing from BioPAX place organism in -->
    <! GenMAPP REMARKS field in database -->
<!ATTLIST pathway Data-Source   CDATA          #IMPLIED -->
    <!-- When exporting GenMAPP maps, place "GenMAPP" in this field -->
<!ATTLIST pathway Version       CDATA          #IMPLIED>
<!ATTLIST pathway Author        CDATA          #IMPLIED>
<!ATTLIST pathway Maint         CDATA          #IMPLIED>
<!ATTLIST pathway Email         CDATA          #IMPLIED>
<!ATTLIST pathway Availability  CDATA          #IMPLIED>
    <! GenMAPP Copyright -->
<!ATTLIST pathway Modify        CDATA          #IMPLIED>
<!ATTLIST pathway Comment       CDATA          #IMPLIED>
    <!-- Text in comment will show up on map -->
    <!-- GenMAPP Remarks -->
<!ATTLIST pathway Boardwidth    CDATA          #IMPLIED>
<!ATTLIST pathway BoardHeight   CDATA          #IMPLIED>
<!ATTLIST pathway Notes         CDATA          #IMPLIED>
<!-- Text in Notes will show up in MAPP information window -->
<!ATTLIST pathway InfoboxLeft   CDATA          #DEFAULT "0">
<!ATTLIST pathway InfoboxTop    CDATA          #DEFAULT "0">
<!ATTLIST pathway LegendLeft    CDATA          #DEFAULT "0">
<!ATTLIST pathway LegendTop     CDATA          #DEFAULT "3">

```

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<!ELEMENT GeneProduct(graphics?)>
<!--Note this is a “gene” in GenMAPP terminology-->
<!-- the GeneProduct type maps to BioPAX subclasses physicalEntity protein, rna, or
complex -->

<!ATTLIST GeneProduct Type          CDATA (protein|rna|complex|unknown)
      #DEFAULT “unknown”>
<!ATTLIST GeneProduct Name          CDATA      #REQUIRED>
      <!-- GenMAPP ID -->
<!ATTLIST GeneProduct Data-Source   CDATA      #IMPLIED>
      <!-- GenMAPP System -->
<!ATTLIST GeneProduct Short-Name    CDATA      #IMPLIED>
      <!-- GenMAPP label -->
<!ATTLIST GeneProduct Comments      CDATA      #IMPLIED>
      <!-- Text in Comments will show up in GenMAPP backpage -->
<!ATTLIST GeneProduct Xref          CDATA      #IMPLIED>
      <!-- GenMAPP Links -->
<!ATTLIST GeneProduct BackpageHead  CDATA      #IMPLIED>
<!ATTLIST GeneProduct Notes         CDATA      #IMPLIED>
<!-- Text in Notes will NOT show up on GenMAPP map or backpage -->

<!ATTLIST GeneProduct CenterX      CDATA      #REQUIRED>
<!ATTLIST GeneProduct CenterY      CDATA      #REQUIRED>
<!ATTLIST GeneProduct Width        CDATA      #IMPLIED>
<!ATTLIST GeneProduct Image        CDATA      #IMPLIED>

<!ELEMENT Line(graphics?) >
<!-- Note in GenMAPP versions 1 and 2, lines and arrows represent --
> <!-- relationships between protein elements --
-->
<!-- In a future version of GenMAPP, lines and arrows will be represented by a --
>
<!-- relationship type similar to the interaction type in BioPAX --
>
<!-- though we will maintain the line element for lines that do not represent --
>
<!-- relationships --
>
<!ATTLIST Line Type (Line| Arrow)   CDATA      #REQUIRED>

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<!ATTLIST Line Style          CDATA (Solid|Broken)
      #DEFAULT "Solid">
<!ATTLIST Line Notes          CDATA      #IMPLIED>
<!-- Text in Notes will NOT show up in GenMAPP but will be stored in database-->
<!ATTLIST Line Remarks        CDATA      #IMPLIED>
<!-- Text in remarks will show up on right click of line -->

<!ATTLIST Line StartX         CDATA      #REQUIRED>
<!ATTLIST Line StartY         CDATA      #REQUIRED>
<!ATTLIST Line EndX           CDATA      #REQUIRED>
<!ATTLIST Line EndY           CDATA      #REQUIRED>
<!ATTLIST Line Color          CDATA      #DEFAULT "Black">

```

**<!ELEMENT Label (graphics?)>**

<!-- This is a GenMAPP map object. A GenMAPP label is simply text that the -->  
 <!-- user can right click on to bring up any text that is stored in the Remarks -->

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<!ATTRIBUTE Label Remarks     CDATA      #IMPLIED>
<!-- Text in Remarks will show up in GenMAPP on right click -->

<!ATTRIBUTE Label FontName    CDATA      #DEFAULT "Arial">
<!ATTRIBUTE Label FontStyle   CDATA (Normal|Italic|Underscore|Strikethru)
      #DEFAULT "Normal">
<!ATTRIBUTE Label FontWeight  CDATA (Regular|Bold)      #DEFAULT
      "Regular">
<!ATTRIBUTE Label FontSize    CDATA      #DEFAULT "12">
<!ATTRIBUTE Label CenterX     CDATA      #REQUIRED>
<!ATTRIBUTE Label CenterY     CDATA      #REQUIRED>
<!-- Text in Remarks will show up in GenMAPP on right click -->

```

**<!ELEMENT Shape(graphics?) >**

<!-- This is a GenMAPP map object -->  
 <!ATTLIST Shape Type (Brace|Rectangle|Arc|Oval) #REQUIRED>  
 <!ATTLIST Shape Notes CDATA #IMPLIED>  
 <!ATTLIST Shape Remarks CDATA #IMPLIED>  
 <!-- Text in Remarks will show up in GenMAPP on right click -->

```

<!ATTLIST Shape2 CenterX     CDATA      #REQUIRED>
<!ATTLIST Shape2 CenterY     CDATA      #REQUIRED>

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<!ATTLIST Shape2 Width      CDATA      #REQUIRED>
<!ATTLIST Shape2 Height    CDATA      #REQUIRED>
<!ATTLIST Shape2 Rotation   CDATA      #IMPLIED>
<!ATTLIST Shape2 Color     CDATA      #DEFAULT "Black">

```

**<!ELEMENT SmallMoleculeShape(graphics?)>**

```

<!ATTLIST SmallMolecule Type (Receptor|
    ReceptorRd|LigandRd|ReceptorSq|LigandSq|Inhibition)  CDATA
    #REQUIRED>
<!ATTLIST SmallMolecule Notes      CDATA      #IMPLIED>
<!ATTLIST SmallMolecule Remarks    CDATA      #IMPLIED>

<!ATTLIST SmallMolecule StartX     CDATA      #REQUIRED>
<!ATTLIST SmallMolecule StartY     CDATA      #REQUIRED>
<!ATTLIST SmallMolecule EndX       CDATA      #REQUIRED>
<!ATTLIST SmallMolecule EndY       CDATA      #REQUIRED>
<!ATTLIST SmallMolecule Color      CDATA      #DEFAULT "Black">

```

**<!ELEMENT CellShape(graphics?)>**

```

<!ATTRIBUTE Cell CenterX  CDATA      #REQUIRED>
<!ATTRIBUTE Cell CenterY  CDATA      #REQUIRED>
<!ATTRIBUTE Cell Width    CDATA      #FIXED "1500">
<!ATTRIBUTE Cell Height   CDATA      #FIXED "375">
<!ATTRIBUTE Cell Rotation  CDATA      #FIXED "-1.308997">

```

**<!ELEMENT CellComponentShape(graphics?)>**

```

<!ATTLIST CellComponent Type (OrganA|OrganB|OrganC|Ribosome)
    #REQUIRED>
<!ATTLIST CellComponent Notes      CDATA      #IMPLIED>

<!ATTLIST CellComponent CenterX    CDATA      #REQUIRED>
<!ATTLIST CellComponent CenterY    CDATA      #REQUIRED>

```

**<!ELEMENT ProteinComplexShape(graphics?)>**

```

<!--This is the GenMAPP ProteinB shape only ->
<!ATTLIST SmallMoleculeProtein Notes      CDATA      #IMPLIED>

```

```

<!ATTLIST SmallMoleculeProtein CenterX      CDATA      #REQUIRED>
<!ATTLIST SmallMoleculeProtein CenterY      CDATA      #REQUIRED>
<!ATTLIST SmallMoleculeProtein Width        CDATA      #REQUIRED>

```

**<!ELEMENT graphics>**

```

<!ATTLIST graphics CenterX      CDATA      #IMPLIED>
<!ATTLIST graphics CenterY      CDATA      #IMPLIED>
<!ATTLIST graphics StartX       CDATA      #IMPLIED>
<!ATTLIST graphics EndX         CDATA      #IMPLIED>
<!ATTLIST graphics StartY       CDATA      #IMPLIED>
<!ATTLIST graphics EndY         CDATA      #IMPLIED>
<!ATTLIST graphics Width        CDATA      #IMPLIED>
<!ATTLIST graphics Height       CDATA      #IMPLIED>
<!ATTLIST graphics Color        CDATA      #DEFAULT "Black">
<!ATTLIST graphics Rotation     CDATA      #IMPLIED> <!--for cells fixed
at "-1.308997 →

```

<!-- Notes for graphics -->

```

<!-- Protein use           CenterY, CenterX, Width -->
<!-- SmallMolecule use   StartX, StartY, EndX, EndY, Color -->
<!-- SmallMoleculeProtein use CenterX, CenterY, Width-->
<!--Cell use              CenterX, CenterY, Width, Height, Rotation>
<!--Cellcomponent use     CenterX, CenterY-->
<!--Label use             CenterX, CenterY-->
<!--Line use              StartX, StartY, EndX, EndY, Color-->
<!--Shape use             CenterX, CenterY, Width, Height, Rotation, Color-->

```