Reactome RESTFUL API Specifications

1). BioPAX Exporter:

Description: Pass an Event database identifier, and get the BioPAX exported in either XML or JSON.The passed Id has to be an Event Id. If there is no matching ID in the database, it will return an empty string.

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| Request Type | Parameters | Output |
| GET | Integer: Event Database Identifier | String: BioPAX RDF Document |

2). PathwayDiagram:

Description: This API lets you retrieve a pathway diagram by passing the database identifier of the pathway and the format of the pathway diagram returned. The available choices are PDF and PNG.

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| Request Type | Parameters | Output |
| GET | Integer: Pathway Database Identifier, String: Format | String: Base64 encoded pathway diagram |

3). QueryById:

Description: This API lets you query the Reactome Database for a specific object. It requires passing class name of the object, as well as the database identifier or the stable identifier of the object. The class name is required. It returns a full object, including full class information about all the attributes of the returned object. For example, if the object has one *PublicationSource* attribute, it will return a full *PublicationSource* object within the returned object.

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| Request Type | Parameters | Output |
| GET | String: Class Name  Integer: Database Identifier OR  Integer: Stable Identifier | String: Encoded object |

4). QueryByIds:

Description: This API lets you query the Reactome Database for a list of objects. It requires passing the object class as the first parameter in the URL. The as the database identifier or the stable identifier of the object The Identifiers are passed inside the body of the HTTP Post request. The Id’s format should structured as a Key=Value pair. First a key “ID”, and a value of comma separated list inside the body of the HTTP POST REQUEST.

Example HTTP POST Body: “ID=11,22,33,44”. In this example, the request specifies that 11,22,33,44 should be treated as identifiers.

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| Request Type | Parameters | Output |
| POST | String: Class Name  Integer: Database Identifiers OR  Integer: Stable Identifiers | String: List of Full Encoded objects |

5). ListByQuery:

Description: This API lets you query the Reactome Database for a list of objects by using Key Value pairs based on an object’s attributes. The format of the HTTP POST body should structured as a Key=Value pair. First there must be a key “key”, and a value “value” inside the body of the HTTP POST REQUEST.

There are two types of attributes that you can query. You can query an attribute of an object, or you can query using the DB\_ID directly. Note that in this case, it only searches for the database identifier and not the stable identifier.

Example HTTP POST Body: “ID=11”.

Example HTTP POST Body: “DB\_ID=Apoptosis”.

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| Request Type | Parameters | Output |
| POST | String: Class Name  Mixed: Database Identifiers OR  Mixed: Stable Identifiers | String: List of Full Encoded objects |

6). PathwayParticipants:

Descriptions: This API lets you query for a list pathway participants for a pathway using a Pathway database identifier. It returns a list all *EventEntity* objects that participate in the Pathway.

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| Request Type | Parameters | Output |
| GET | Integer: Database Identifier | String: List of Full Encoded *EventEntity* objects |

7). TopLevelPathways:

Description: List all top level pathways in the database. A top level pathway is not contained by other pathways in the event hierarchy. It returns full *Pathway* objects.

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| Request Type | Parameters | Output |
| GET | Integer: Database Identifier | String: List of Full Encoded *Pathway* objects |

8). QueryPathwayForEntities:

Description: Query for pathway objects by specifying an array of *EventEntity* database identifiers. The returned Pathways should contain the passed EventEntity objects. All passed *EventEntity* database identifiers should be in the database.

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| Request Type | Parameters | Output |
| GET | Integer: Database Identifiers | String: List of Full Encoded *Pathway* objects |

The returned format can be either XML or JSON.