



Pathway Analysis Report

This report contains the pathway analysis results for the submitted sample ". Analysis was performed against Reactome version 82 on 07/11/2022. The web link to these results is:

<https://reactome.org/PathwayBrowser/#/ANALYSIS=MjAyMjExMDIwMDI3MjhfNDIxMDY%3D>

Please keep in mind that analysis results are temporarily stored on our server. The storage period depends on usage of the service but is at least 7 days. As a result, please note that this URL is only valid for a limited time period and it might have expired.

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1. Introduction

Reactome is a curated database of pathways and reactions in human biology. Reactions can be considered as pathway 'steps'. Reactome defines a 'reaction' as any event in biology that changes the state of a biological molecule. Binding, activation, translocation, degradation and classical biochemical events involving a catalyst are all reactions. Information in the database is authored by expert biologists, entered and maintained by Reactome's team of curators and editorial staff. Reactome content frequently cross-references other resources e.g. NCBI, Ensembl, UniProt, KEGG (Gene and Compound), ChEBI, PubMed and GO. Orthologous reactions inferred from annotation for *Homo sapiens* are available for 17 non-human species including mouse, rat, chicken, puffer fish, worm, fly, yeast, rice, and *Arabidopsis*. Pathways are represented by simple diagrams following an SBGN-like format.

Reactome's annotated data describe reactions possible if all annotated proteins and small molecules were present and active simultaneously in a cell. By overlaying an experimental dataset on these annotations, a user can perform a pathway over-representation analysis. By overlaying quantitative expression data or time series, a user can visualize the extent of change in affected pathways and its progression. A binomial test is used to calculate the probability shown for each result, and the p-values are corrected for the multiple testing (Benjamini–Hochberg procedure) that arises from evaluating the submitted list of identifiers against every pathway.

To learn more about our Pathway Analysis, please have a look at our relevant publications:

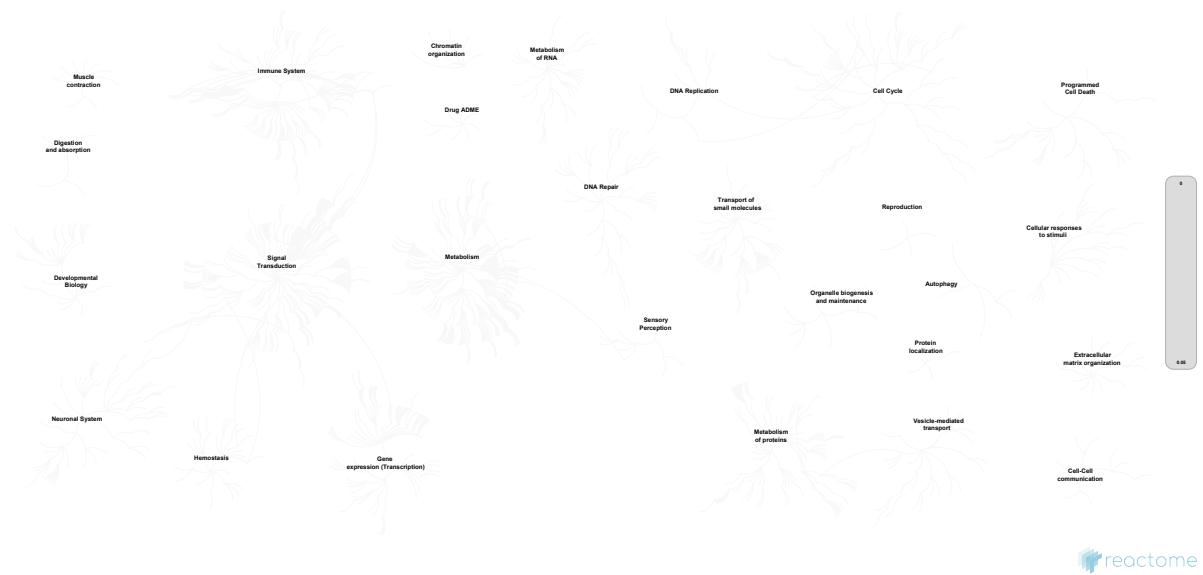
Fabregat A, Sidiropoulos K, Garapati P, Gillespie M, Hausmann K, Haw R, ... D'Eustachio P (2016). The reactome pathway knowledgebase. *Nucleic Acids Research*, 44(D1), D481–D487. <https://doi.org/10.1093/nar/gkv1351>.

Fabregat A, Sidiropoulos K, Viteri G, Forner O, Marin-Garcia P, Arnau V, ... Hermjakob H (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC Bioinformatics*, 18.

2. Properties

- This is an **overrepresentation** analysis: A statistical (hypergeometric distribution) test that determines whether certain Reactome pathways are over-represented (enriched) in the submitted data. It answers the question 'Does my list contain more proteins for pathway X than would be expected by chance?' This test produces a probability score, which is corrected for false discovery rate using the Benjamani-Hochberg method. ↗
- 783 out of 1253 identifiers in the sample were found in Reactome, where 7477 pathways were hit by at least one of them.
- This report is filtered to show only results for species 'Mus musculus' and resource 'all resources'.
- The unique ID for this analysis (token) is MjAyMjExMDIwMDI3MjhfNDIxMDY%3D. This ID is valid for at least 7 days in Reactome's server. Use it to access Reactome services with your data.

3. Genome-wide overview



This figure shows a genome-wide overview of the results of your pathway analysis. Reactome pathways are arranged in a hierarchy. The center of each of the circular "bursts" is the root of one top-level pathway, for example "DNA Repair". Each step away from the center represents the next level lower in the pathway hierarchy. The color code denotes over-representation of that pathway in your input dataset. Light grey signifies pathways which are not significantly over-represented.

4. Most significant pathways

The following table shows the 50 most relevant pathways sorted by p-value.

Pathway name	Entities				Reactions	
	found	ratio	p-value	FDR*	found	ratio
TRIF-mediated programmed cell death	6 / 10	9.25e-04	0.195	1	3 / 3	3.64e-04
FasL/ CD95L signaling	3 / 4	3.70e-04	0.203	1	4 / 4	4.86e-04
CLEC7A/inflammasome pathway	3 / 4	3.70e-04	0.203	1	3 / 3	3.64e-04
Interleukin-1 processing	6 / 11	0.001	0.256	1	5 / 5	6.07e-04
DEx/H-box helicases activate type I IFN and inflammatory cytokines production	4 / 7	6.48e-04	0.288	1	3 / 5	6.07e-04
TRAF6 mediated IRF7 activation in TLR7/8 or 9 signaling	1 / 1	9.25e-05	0.321	1	2 / 2	2.43e-04
RUNX1 regulates transcription of genes involved in interleukin signaling	2 / 3	2.78e-04	0.323	1	1 / 1	1.21e-04
Caspase activation via Death Receptors in the presence of ligand	7 / 16	0.001	0.425	1	8 / 8	9.71e-04
PD-1 signaling	11 / 26	0.002	0.425	1	5 / 5	6.07e-04
Trafficking and processing of endosomal TLR	6 / 14	0.001	0.457	1	6 / 6	7.28e-04
FLT3 signaling through SRC family kinases	2 / 4	3.70e-04	0.458	1	2 / 2	2.43e-04
Interleukin-21 signaling	5 / 12	0.001	0.495	1	5 / 5	6.07e-04
Interleukin-10 signaling	3 / 7	6.48e-04	0.509	1	7 / 7	8.50e-04
Regulation of HMOX1 expression and activity	1 / 2	1.85e-04	0.539	1	3 / 3	3.64e-04
TICAM1-dependent activation of IRF3/IRF7	1 / 2	1.85e-04	0.539	1	2 / 2	2.43e-04
TP53 Regulates Transcription of Death Receptors and Ligands	1 / 2	1.85e-04	0.539	1	1 / 1	1.21e-04
The AIM2 inflammasome	1 / 2	1.85e-04	0.539	1	1 / 1	1.21e-04
TRAIL signaling	2 / 5	4.63e-04	0.576	1	2 / 5	6.07e-04
Interleukin-4 and Interleukin-13 signaling	6 / 16	0.001	0.585	1	21 / 23	0.003
Interleukin-9 signaling	4 / 11	0.001	0.615	1	11 / 13	0.002
PECAM1 interactions	5 / 14	0.001	0.63	1	4 / 7	8.50e-04
ER-Phagosome pathway	14 / 39	0.004	0.646	1	5 / 5	6.07e-04
Translocation of ZAP-70 to Immunological synapse	8 / 23	0.002	0.665	1	4 / 4	4.86e-04

Pathway name	Entities				Reactions	
	found	ratio	p-value	FDR*	found	ratio
Extrinsic Pathway of Fibrin Clot Formation	2 / 6	5.55e-04	0.674	1	7 / 8	9.71e-04
Activation of C3 and C5	2 / 6	5.55e-04	0.674	1	3 / 4	4.86e-04
PTK6 Activates STAT3	2 / 6	5.55e-04	0.674	1	3 / 5	6.07e-04
Dectin-2 family	4 / 12	0.001	0.682	1	7 / 7	8.50e-04
Interleukin-33 signaling	1 / 3	2.78e-04	0.687	1	2 / 2	2.43e-04
Transfer of LPS from LBP carrier to CD14	1 / 3	2.78e-04	0.687	1	2 / 2	2.43e-04
TFAP2 (AP-2) family regulates transcription of cell cycle factors	1 / 3	2.78e-04	0.687	1	1 / 1	1.21e-04
SMAC(DIABLO)-mediated dissociation of IAP:caspase complexes	1 / 3	2.78e-04	0.687	1	1 / 1	1.21e-04
RUNX1 regulates transcription of genes involved in differentiation of myeloid cells	1 / 3	2.78e-04	0.687	1	1 / 1	1.21e-04
RUNX1 and FOXP3 control the development of regulatory T lymphocytes (Tregs)	1 / 3	2.78e-04	0.687	1	1 / 1	1.21e-04
SMAC (DIABLO) binds to IAPs	1 / 3	2.78e-04	0.687	1	1 / 2	2.43e-04
RUNX1 regulates transcription of genes involved in differentiation of keratinocytes	1 / 3	2.78e-04	0.687	1	1 / 2	2.43e-04
Generation of second messenger molecules	12 / 36	0.003	0.735	1	14 / 15	0.002
Regulation of IFNG signaling	4 / 13	0.001	0.74	1	3 / 3	3.64e-04
Interleukin-2 signaling	4 / 13	0.001	0.74	1	14 / 15	0.002
Regulation by c-FLIP	3 / 10	9.25e-04	0.743	1	4 / 4	4.86e-04
Dimerization of procaspase-8	3 / 10	9.25e-04	0.743	1	3 / 3	3.64e-04
CASP8 activity is inhibited	3 / 10	9.25e-04	0.743	1	2 / 2	2.43e-04
Caspase activation via extrinsic apoptotic signalling pathway	7 / 22	0.002	0.746	1	8 / 12	0.001
G2/M DNA replication checkpoint	2 / 7	6.48e-04	0.753	1	2 / 2	2.43e-04
G2 Phase	2 / 7	6.48e-04	0.753	1	2 / 2	2.43e-04
Activation of NIMA Kinases NEK9, NEK6, NEK7	2 / 7	6.48e-04	0.753	1	1 / 2	2.43e-04
Phosphorylation of CD3 and TCR zeta chains	8 / 26	0.002	0.786	1	5 / 7	8.50e-04
TNFs bind their physiological receptors	8 / 26	0.002	0.786	1	5 / 12	0.001
TRAF6 mediated IRF7 activation	1 / 4	3.70e-04	0.787	1	4 / 4	4.86e-04

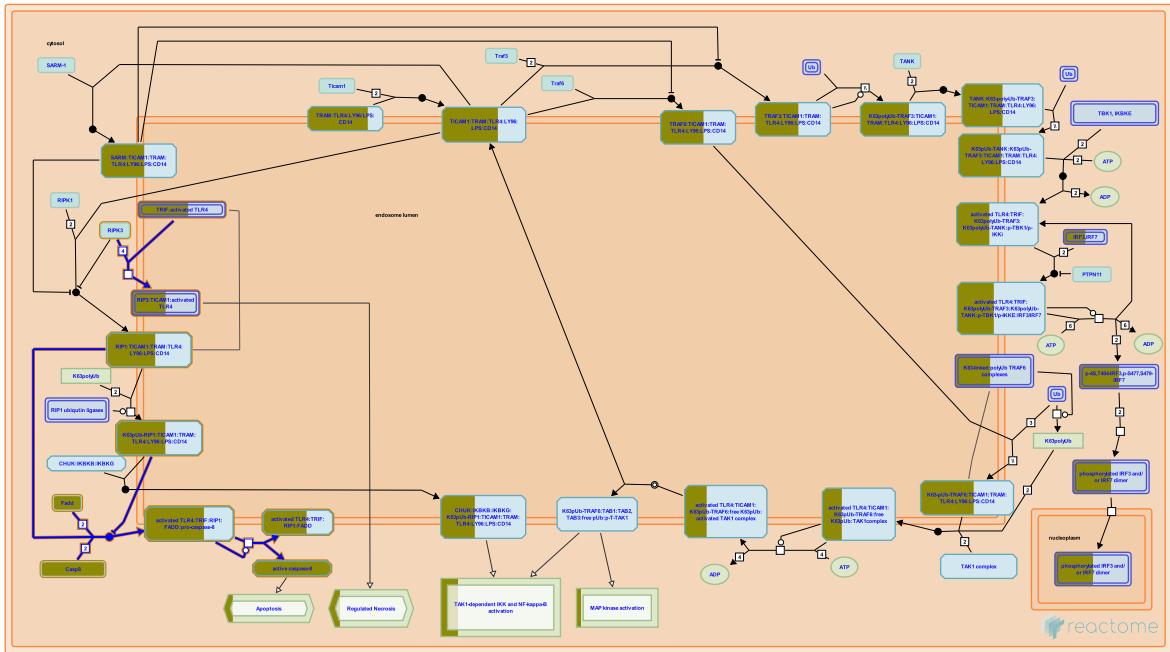
Pathway name	Entities				Reactions	
	found	ratio	p-value	FDR*	found	ratio
RUNX1 regulates transcription of genes involved in BCR signaling	1 / 4	3.70e-04	0.787	1	2 / 2	2.43e-04
Drug-mediated inhibition of ERBB2 signaling	1 / 4	3.70e-04	0.787	1	1 / 1	1.21e-04

* False Discovery Rate

5. Pathways details

For every pathway of the most significant pathways, we present its diagram, as well as a short summary, its bibliography and the list of inputs found in it.

1. TRIF-mediated programmed cell death (R-MMU-2562578)



Cellular compartments: endosome membrane, cytosol.

Inferred from: TRIF-mediated programmed cell death.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

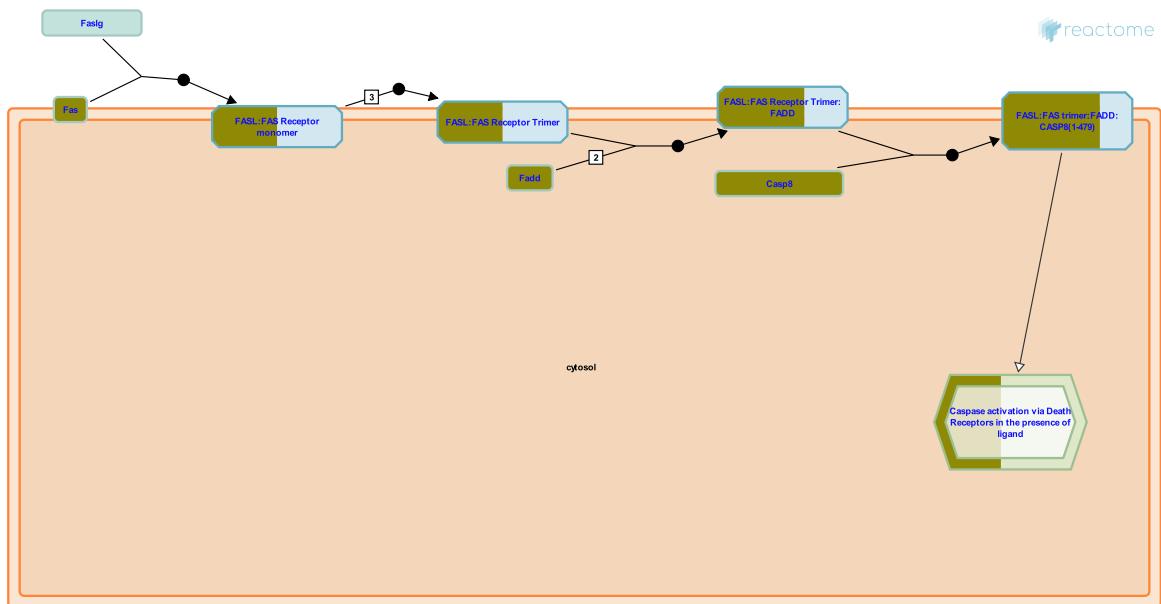
Edit history

Date	Action	Author
2022-08-25	Created	Wright A
2022-09-05	Modified	Wright A

6 submitted entities found in this pathway, mapping to 6 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Casp8	O89110	Cd14	P10810	Fadd	Q61160
Ly96	Q9JHF9	Ticam2	Q8BJQ4	Tlr4	Q9QUK6

2. FasL/ CD95L signaling (R-MMU-75157)



Inferred from: FasL/ CD95L signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

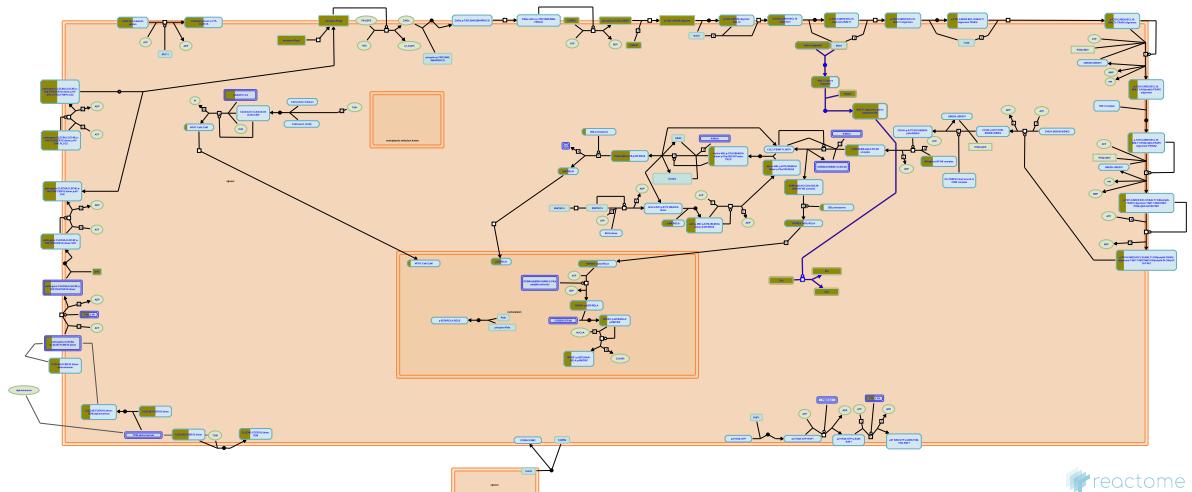
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

3 submitted entities found in this pathway, mapping to 3 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Casp8	O89110	Fadd	Q61160	Fas	P25446

3. CLEC7A/inflammasome pathway (R-MMU-5660668)



Cellular compartments: plasma membrane, cytosol.

Inferred from: CLEC7A/inflammasome pathway.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

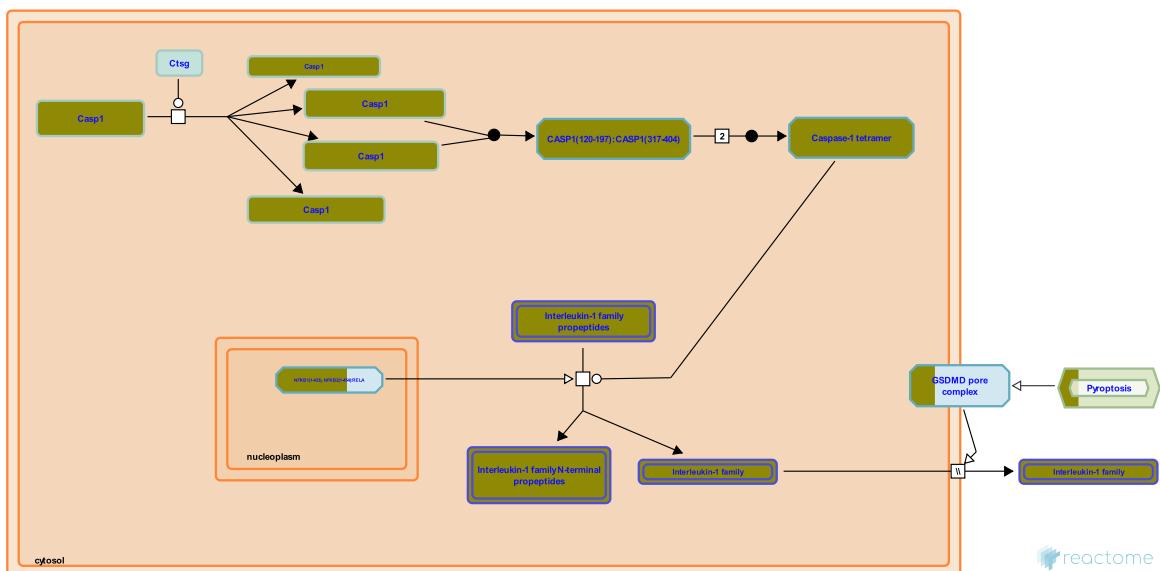
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

3 submitted entities found in this pathway, mapping to 3 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Casp8	O89110	Il1b	P10749	Pycard	Q9EPB4

4. Interleukin-1 processing (R-MMU-448706)



Cellular compartments: cytosol.

Inferred from: Interleukin-1 processing.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

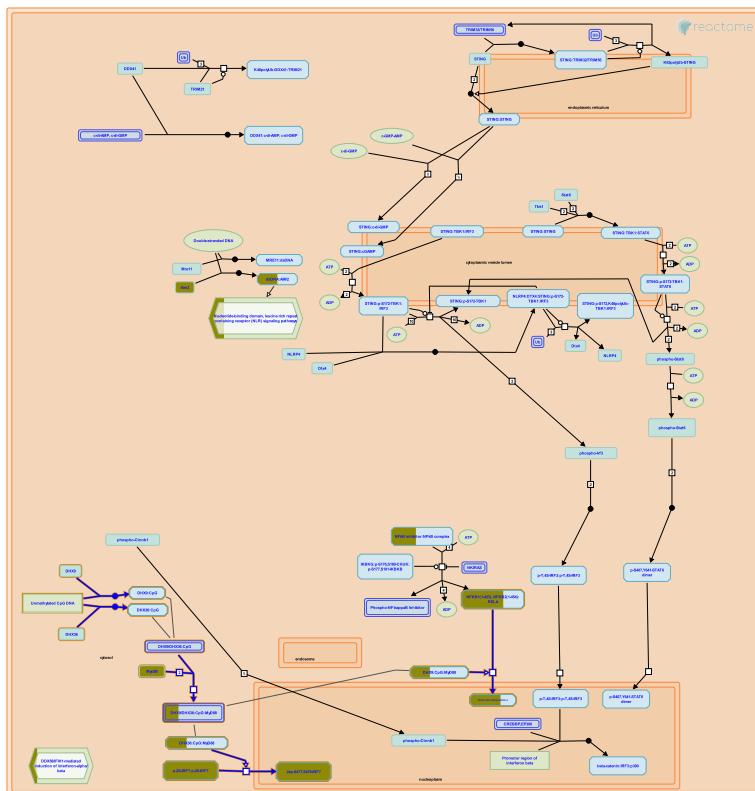
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

6 submitted entities found in this pathway, mapping to 6 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Casp1	P29452	Gsdmd	Q9D8T2	Il1a	P01582
Il1b	P10749	Nfkbp1	P25799	Nfkbp2	Q9WTK5

5. DEx/H-box helicases activate type I IFN and inflammatory cytokines production ([R-MMU-3134963](#))



Inferred from: DEx/H-box helicases activate type I IFN and inflammatory cytokines production .

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

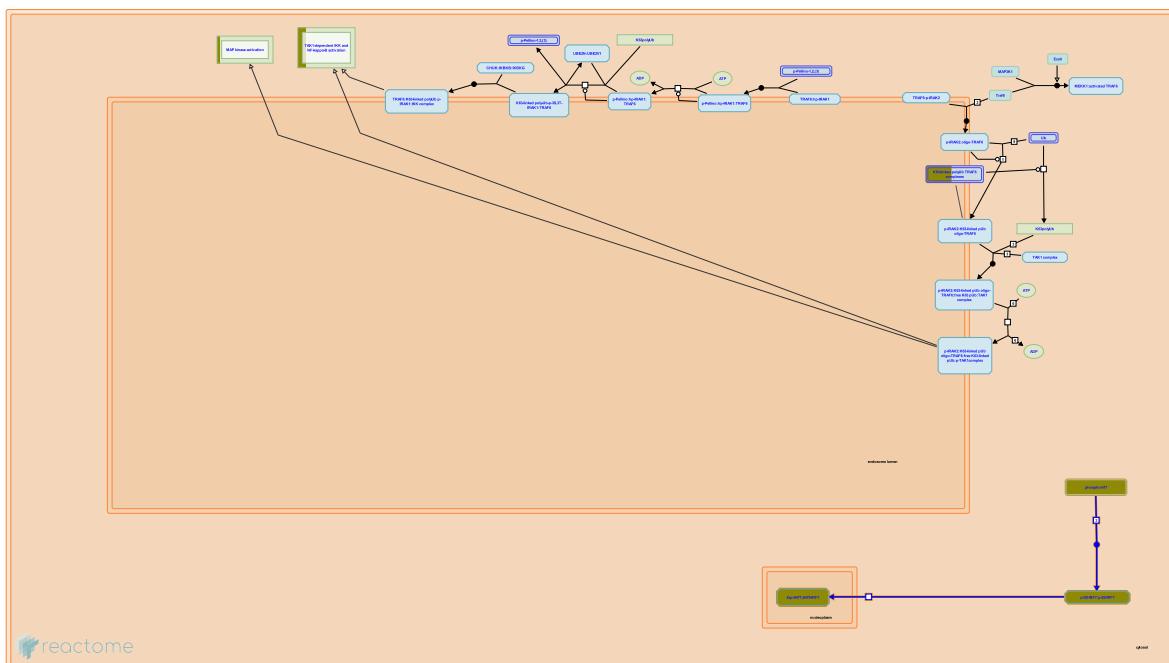
Edit history

Date	Action	Author
2022-08-25	Created	Wright A
2022-09-05	Modified	Wright A

4 submitted entities found in this pathway, mapping to 4 Reactome entities

Input	UniProt Id	Input	UniProt Id
Irf7	P70434	Myd88	P22366
Nfkb1	P25799	Nfkb2	Q9WTK5

6. TRAF6 mediated IRF7 activation in TLR7/8 or 9 signaling (R-MMU-975110)



Cellular compartments: endosome membrane, cytosol.

Inferred from: TRAF6 mediated IRF7 activation in TLR7/8 or 9 signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

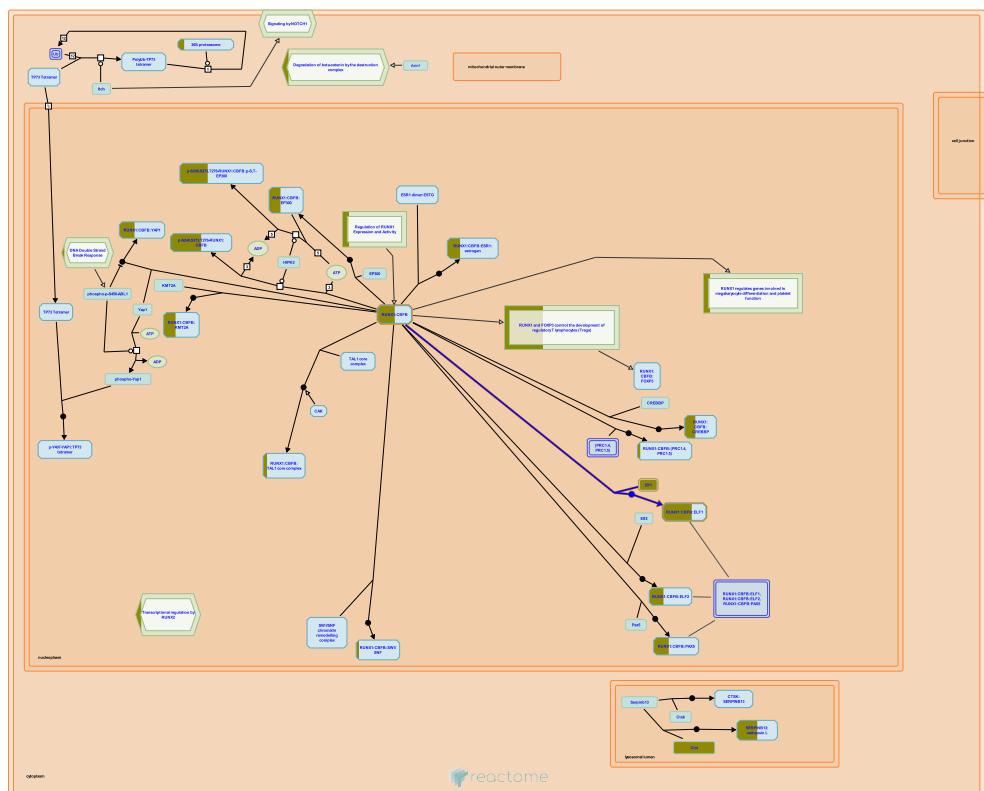
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Irf7	P70434

7. RUNX1 regulates transcription of genes involved in interleukin signaling (R-MMU-8939247)



Inferred from: RUNX1 regulates transcription of genes involved in interleukin signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

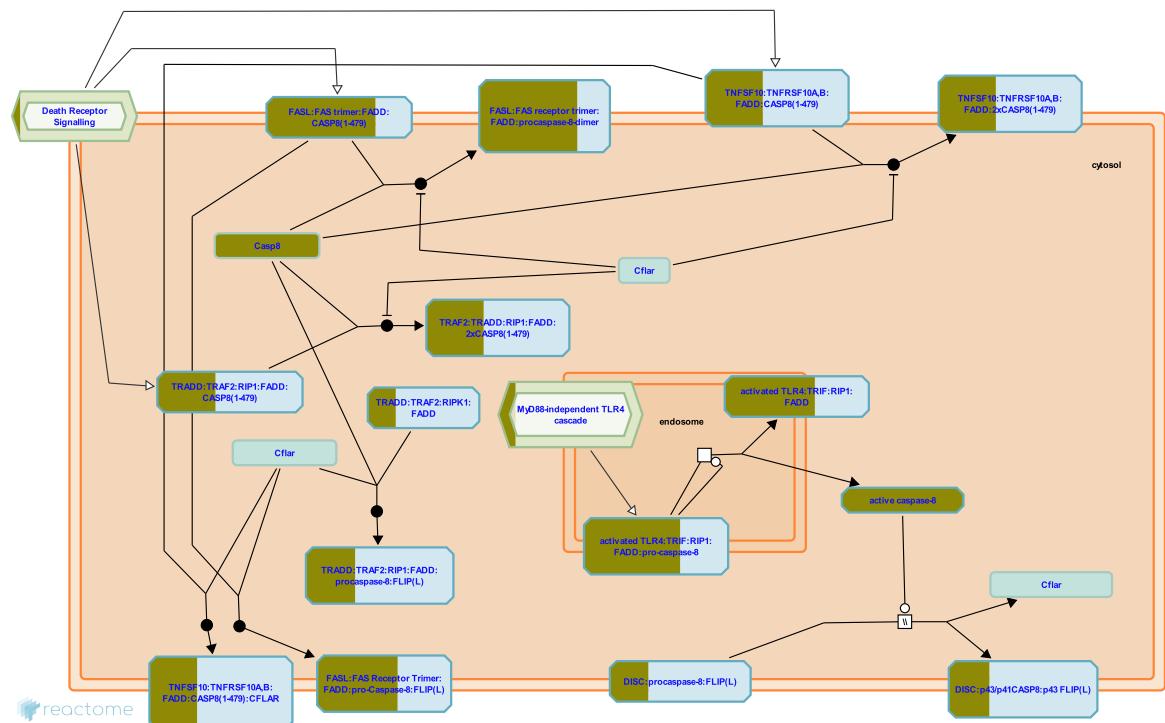
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

2 submitted entities found in this pathway, mapping to 2 Reactome entities

Input	UniProt Id	Input	UniProt Id
Elf1	Q60775	Runx1	Q03347

8. Caspase activation via Death Receptors in the presence of ligand (R-MMU-140534)



Cellular compartments: cytosol.

Inferred from: Caspase activation via Death Receptors in the presence of ligand.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

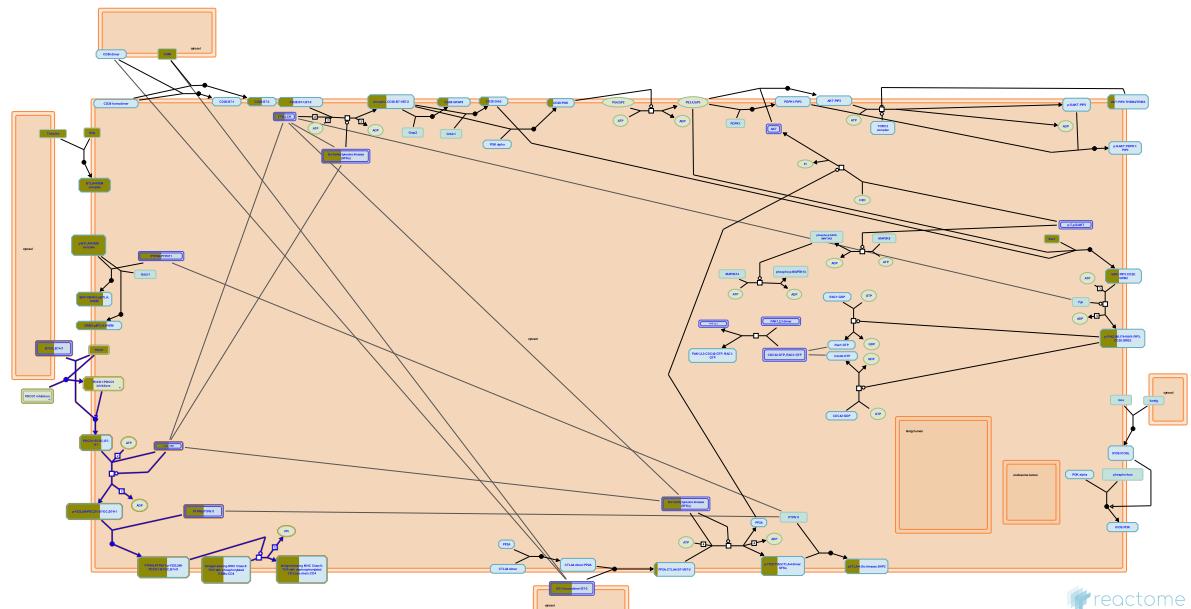
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

7 submitted entities found in this pathway, mapping to 7 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Casp8	O89110	Cd14	P10810	Fadd	Q61160
Fas	P25446	Ly96	Q9JHF9	Ticam2	Q8BJQ4
Tlr4	Q9QUK6				

9. PD-1 signaling (R-MMU-389948)



reactome

Cellular compartments: plasma membrane.

Inferred from: PD-1 signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

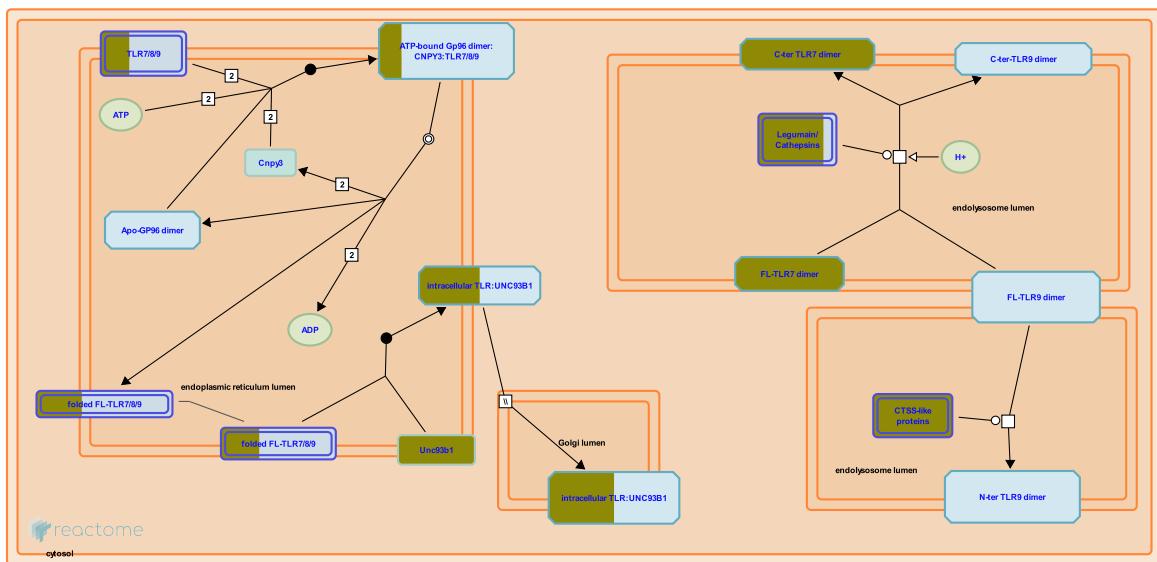
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

11 submitted entities found in this pathway, mapping to 11 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Cd247	P24161	Cd274	Q9EP73	Cd3d	P04235
Cd3g	P11942	H2-Aa	P01910	H2-Ab1	P01921
H2-Eb1	P04230	Lck	P06240	Pdcd1	Q02242
Ptpn6	P29351	Trbc1	A0A075B5J3		

10. Trafficking and processing of endosomal TLR (R-MMU-1679131)



Inferred from: Trafficking and processing of endosomal TLR.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

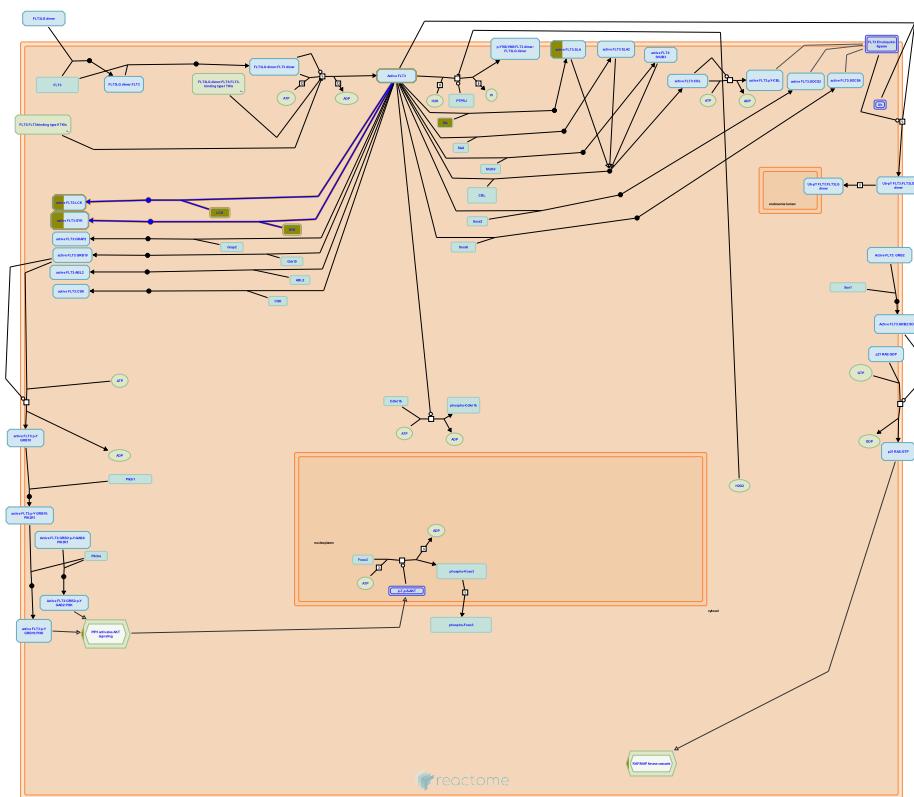
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

6 submitted entities found in this pathway, mapping to 6 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Ctsb	P10605	Ctsl	P06797	Ctss	O70370
Lgmn	O89017	Tlr7	P58681	Unc93b1	Q8VCW4

11. FLT3 signaling through SRC family kinases (R-MMU-9706374)



Inferred from: FLT3 signaling through SRC family kinases.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

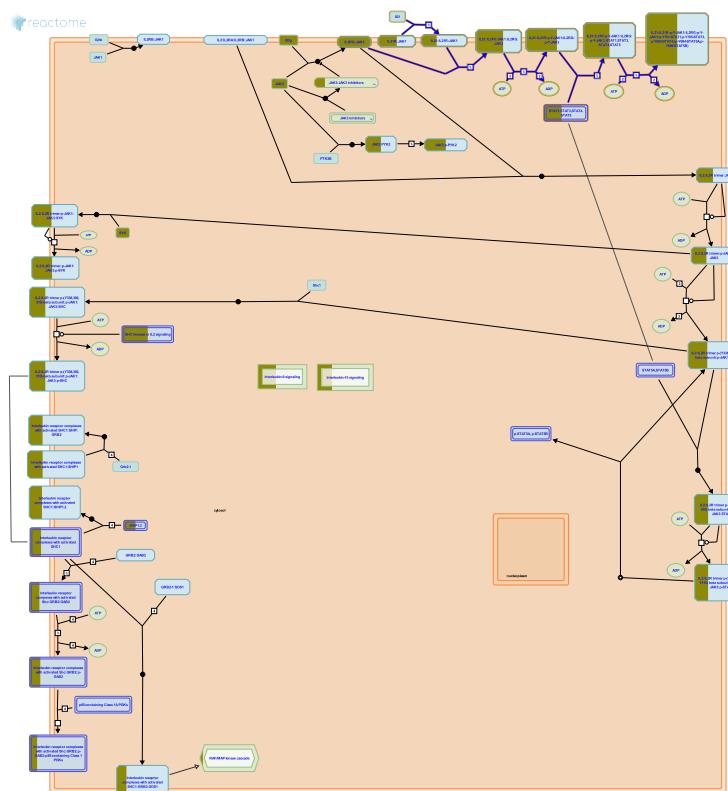
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

2 submitted entities found in this pathway, mapping to 2 Reactome entities

Input	UniProt Id	Input	UniProt Id
Lck	P06240	Syk	P48025

12. Interleukin-21 signaling (R-MMU-9020958)



Inferred from: Interleukin-21 signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

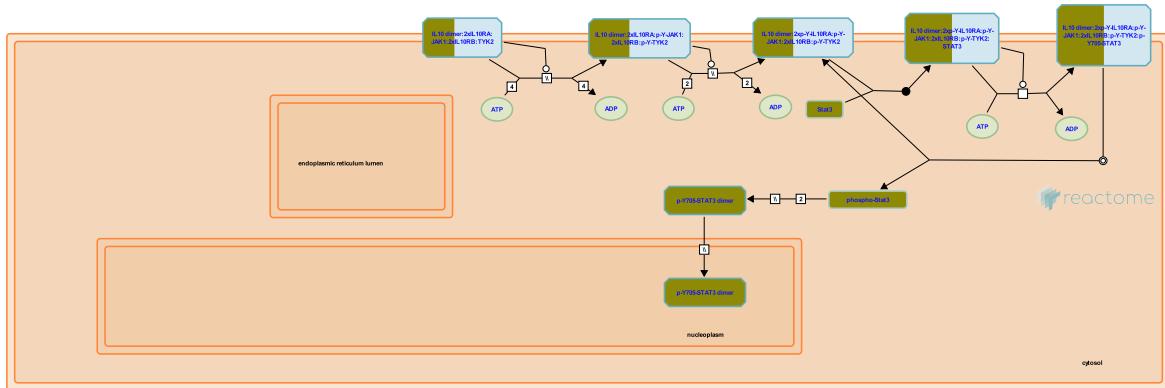
Edit history

Date	Action	Author
2022-08-25	Created	Wright A
2022-09-05	Modified	Wright A

5 submitted entities found in this pathway, mapping to 5 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Il21r	Q9JHX3	Il2rg	P34902	Jak3	Q62137
Stat1	P42225	Stat3	P42227		

13. Interleukin-10 signaling (R-MMU-6783783)



Inferred from: Interleukin-10 signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

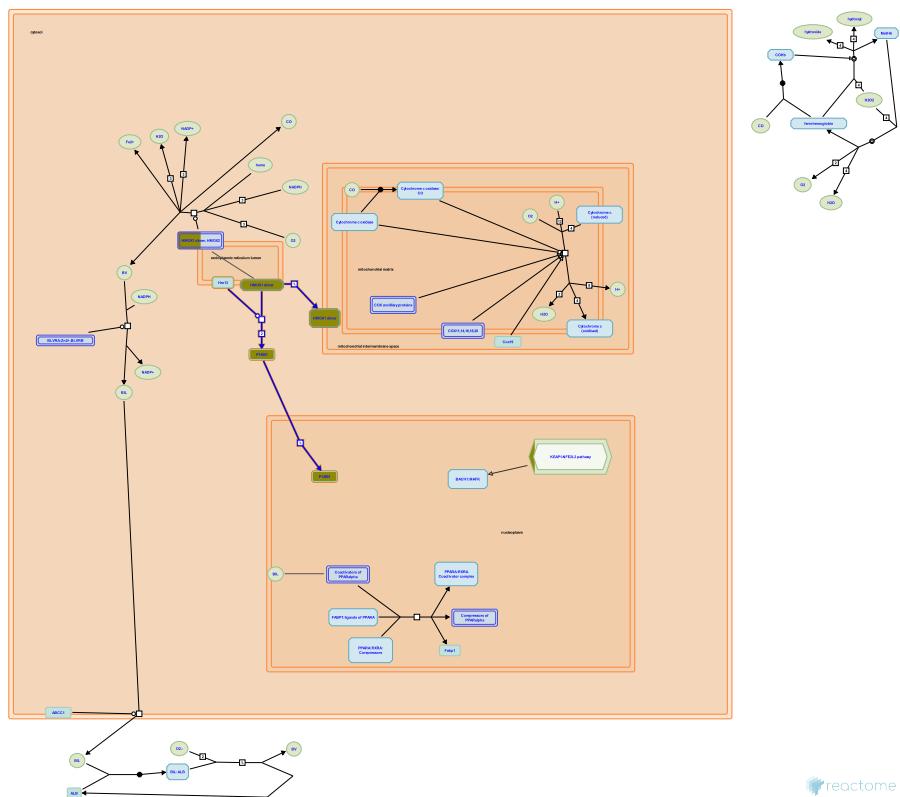
Edit history

Date	Action	Author
2022-08-25	Created	Wright A
2022-09-05	Modified	Wright A

3 submitted entities found in this pathway, mapping to 3 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Il10ra	Q61727	Il10rb	Q61190	Stat3	P42227

14. Regulation of HMOX1 expression and activity (R-MMU-9707587)



Inferred from: Regulation of HMOX1 expression and activity.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

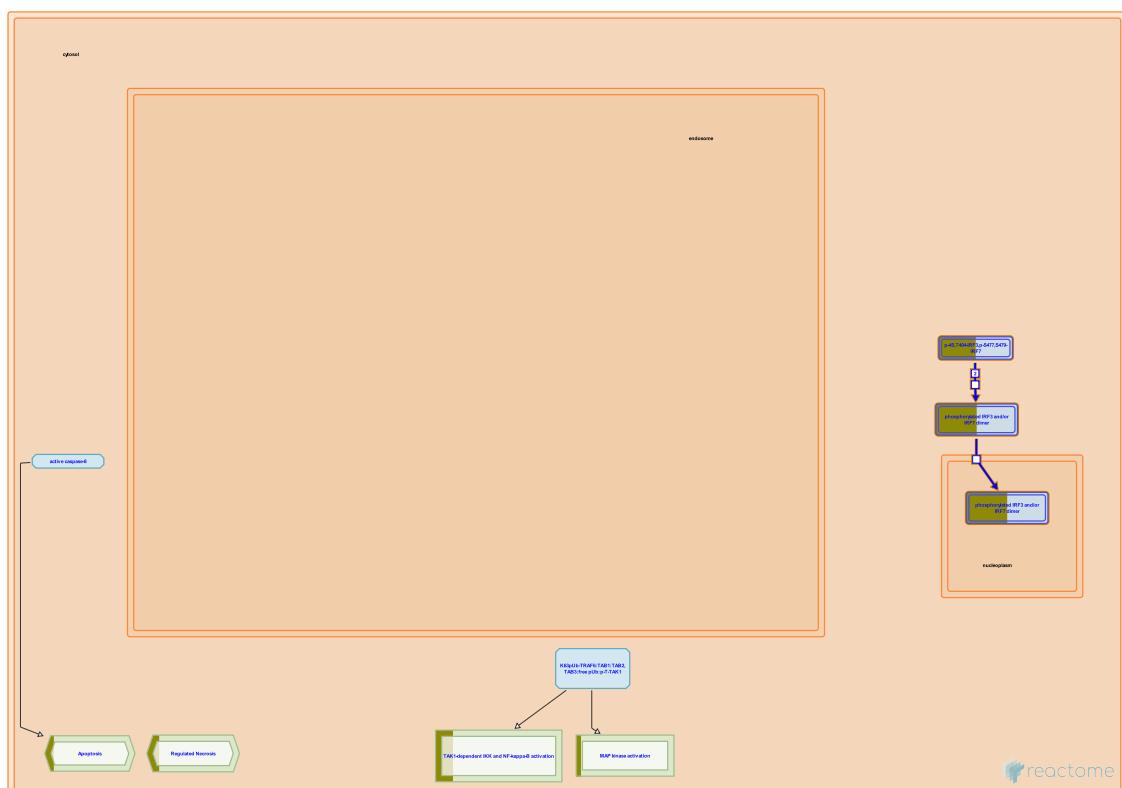
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Hmox1	P14901

15. TICAM1-dependent activation of IRF3/IRF7 (R-MMU-9013973)



Cellular compartments: cytosol.

Inferred from: TICAM1-dependent activation of IRF3/IRF7.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

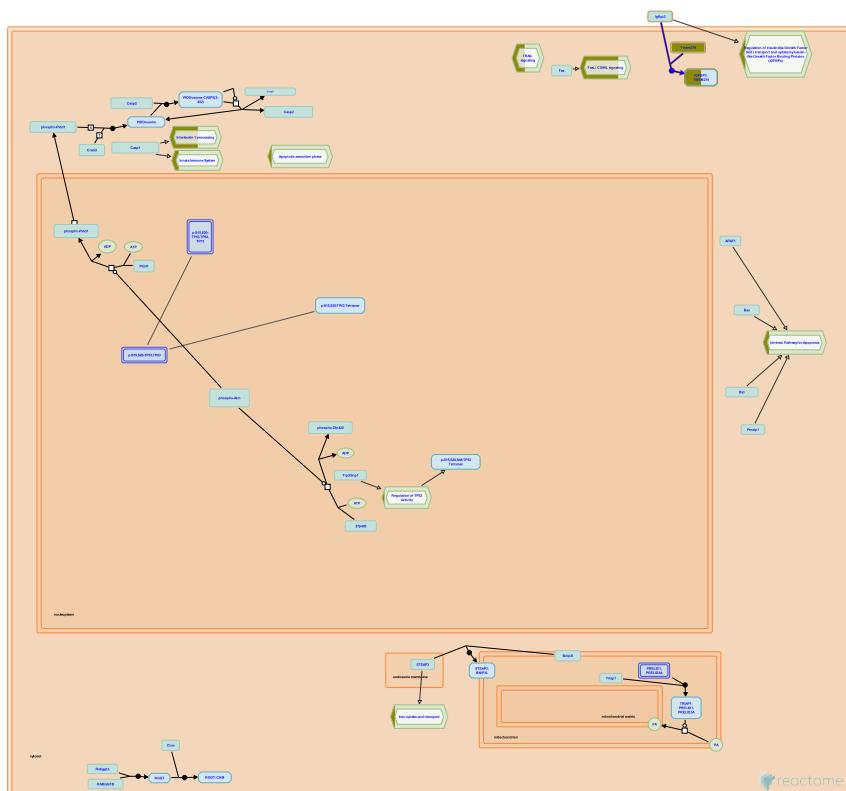
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Irf7	P70434

16. TP53 Regulates Transcription of Death Receptors and Ligands (R-MMU-6803211)



Inferred from: TP53 Regulates Transcription of Death Receptors and Ligands.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

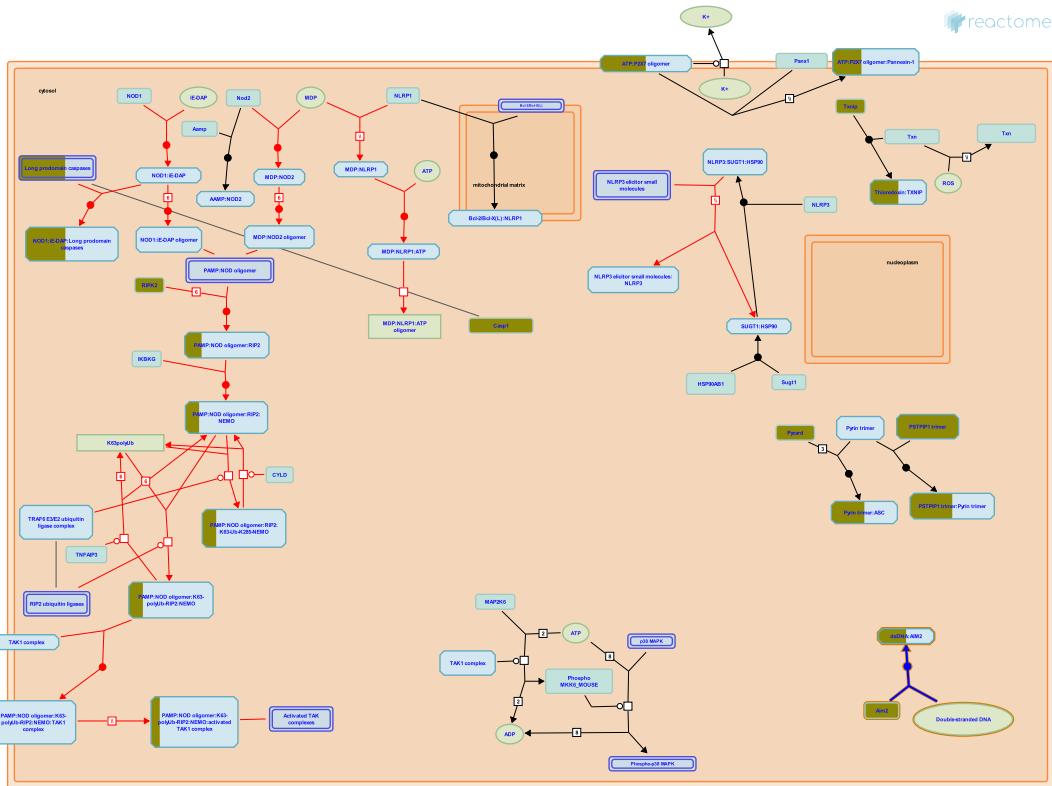
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Tmem219	Q9D123

17. The AIM2 inflammasome (R-MMU-844615)



Cellular compartments: cytosol.

Inferred from: The AIM2 inflammasome.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

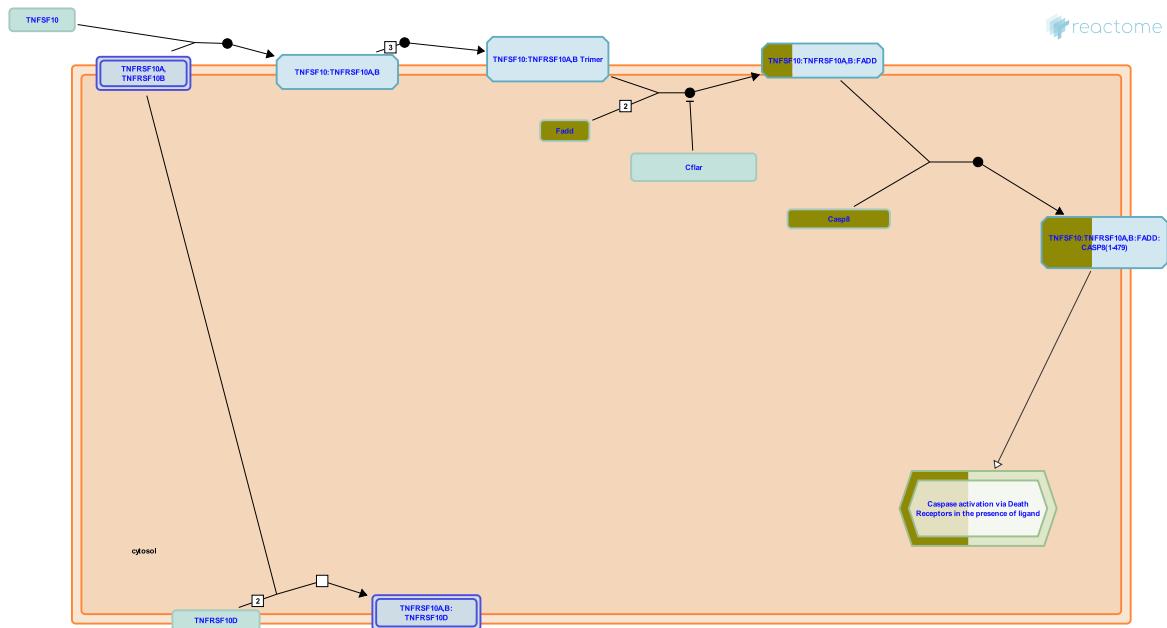
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Aim2	Q91VJ1

18. TRAIL signaling (R-MMU-75158)



Inferred from: TRAIL signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

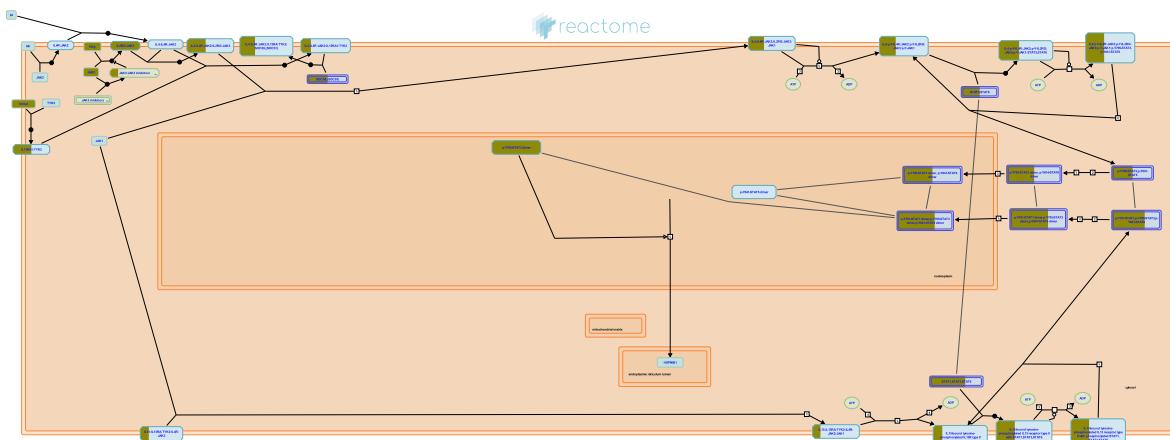
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

2 submitted entities found in this pathway, mapping to 2 Reactome entities

Input	UniProt Id	Input	UniProt Id
Casp8	O89110	Fadd	Q61160

19. Interleukin-4 and Interleukin-13 signaling (R-MMU-6785807)



Inferred from: Interleukin-4 and Interleukin-13 signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

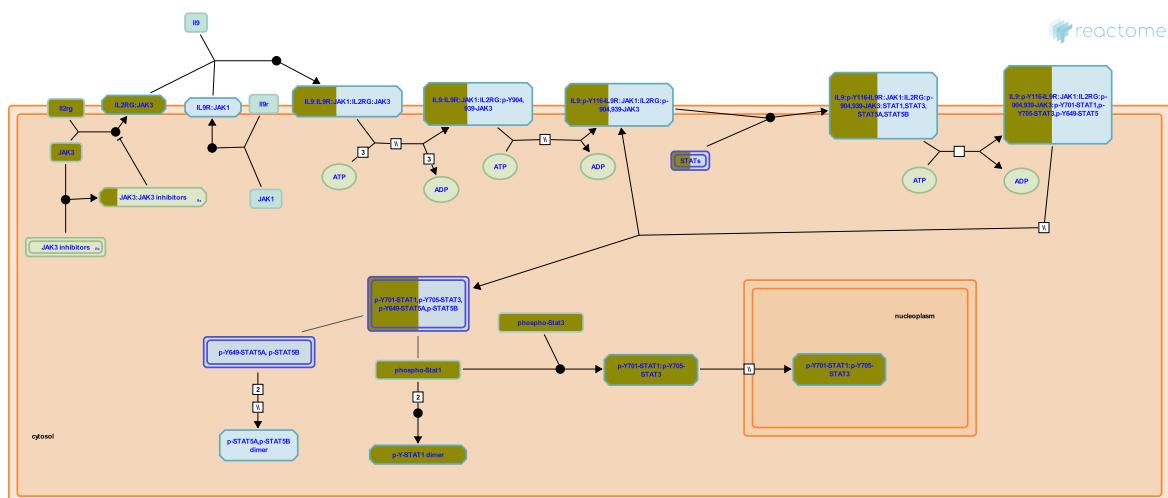
Edit history

Date	Action	Author
2022-08-25	Created	Wright A
2022-09-05	Modified	Wright A

6 submitted entities found in this pathway, mapping to 6 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Il13ra1	O09030	Il2rg	P34902	Jak3	Q62137
Socs1	O35716	Stat1	P42225	Stat3	P42227

20. Interleukin-9 signaling (R-MMU-8985947)



Inferred from: Interleukin-9 signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

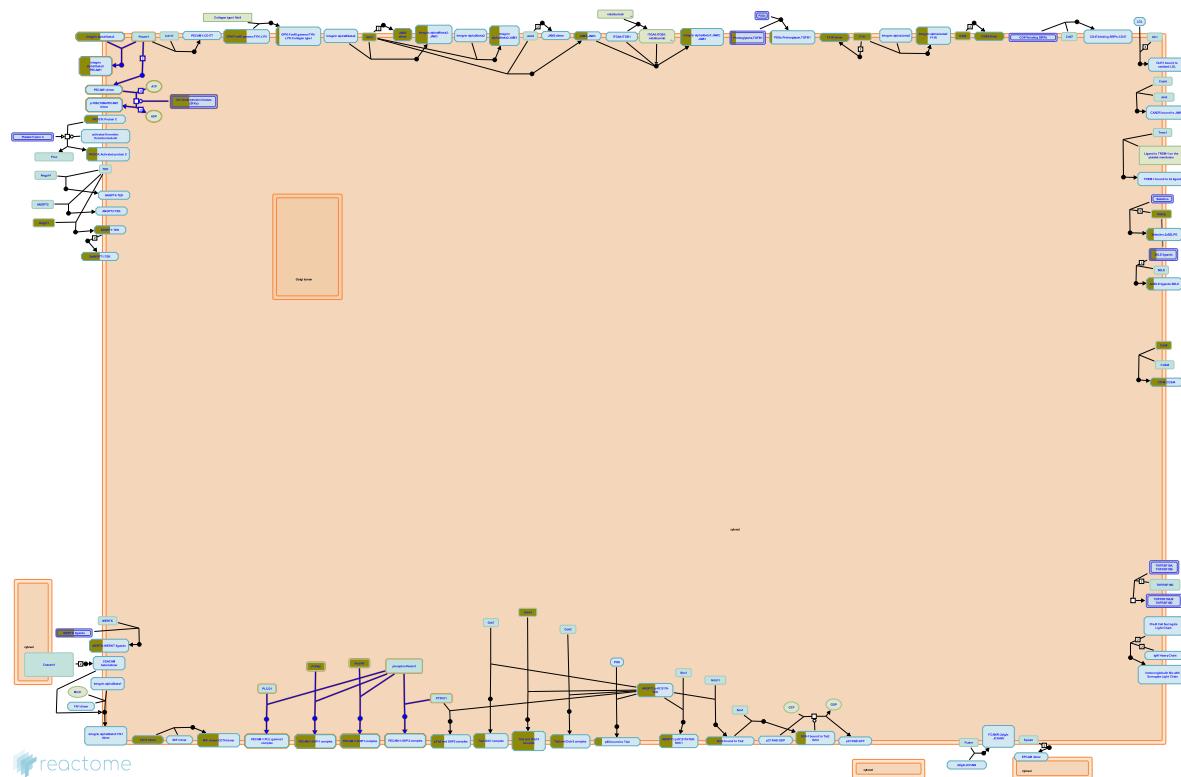
Edit history

Date	Action	Author
2022-08-25	Created	Wright A
2022-09-05	Modified	Wright A

4 submitted entities found in this pathway, mapping to 4 Reactome entities

Input	UniProt Id	Input	UniProt Id
Il2rg	P34902	Jak3	Q62137
Stat1	P42225	Stat3	P42227

21. PECAM1 interactions (R-MMU-210990)



Inferred from: PECAM1 interactions.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

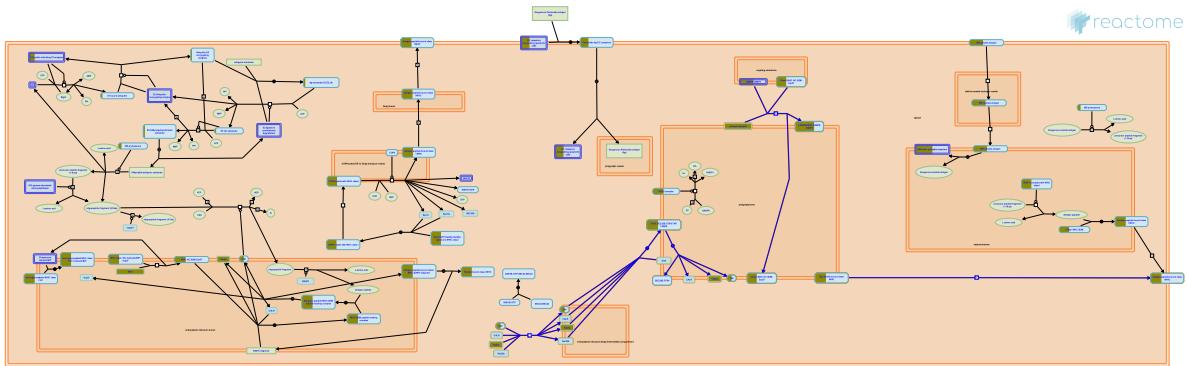
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

5 submitted entities found in this pathway, mapping to 5 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Inpp5d	Q9ES52	Itgb3	O54890	Lck	P06240
Lyn	P25911	Ptpn6	P29351		

22. ER-Phagosome pathway (R-MMU-1236974)



Inferred from: ER-Phagosome pathway.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

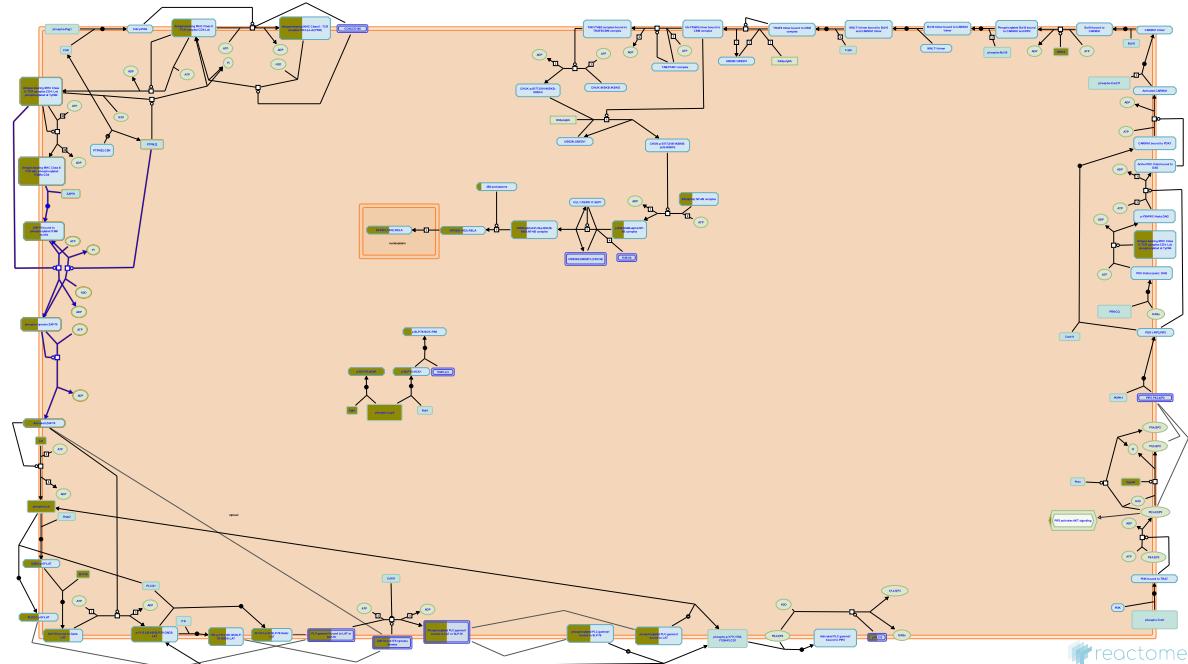
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

14 submitted entities found in this pathway, mapping to 14 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
B2m	P01887	H2-D1	P14427	H2-K1	P01901
H2-M3	Q31093	H2-Q4	Q8HWB2	H2-Q6	P79568
H2-Q7	P14429	H2-T10	F6T1I5	H2-T22	Q31615
H2-T23	P06339	Snap23	O09044	Tap1	P21958
Tapbp	Q9R233	Vamp8	O70404		

23. Translocation of ZAP-70 to Immunological synapse (R-MMU-202430)



Cellular compartments: plasma membrane.

Inferred from: Translocation of ZAP-70 to Immunological synapse.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

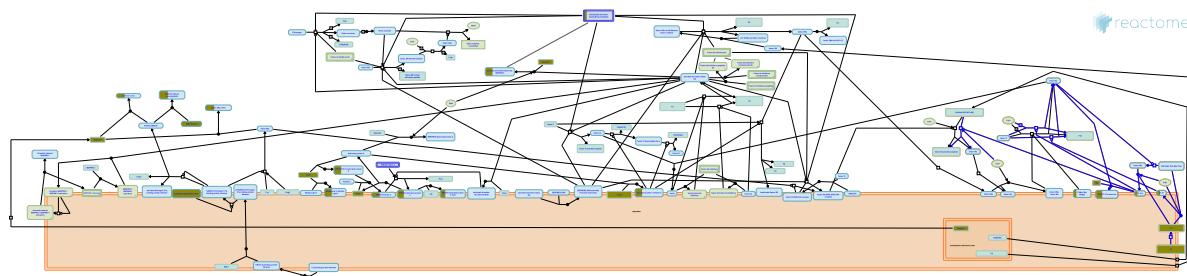
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

8 submitted entities found in this pathway, mapping to 8 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Cd247	P24161	Cd3d	P04235	Cd3g	P11942
H2-Aa	P01910	H2-Ab1	P01921	H2-Eb1	P04230
Lck	P06240	Trbc1	A0A075B5J3		

24. Extrinsic Pathway of Fibrin Clot Formation (R-MMU-140834)



Cellular compartments: extracellular region.

Inferred from: Extrinsic Pathway of Fibrin Clot Formation.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

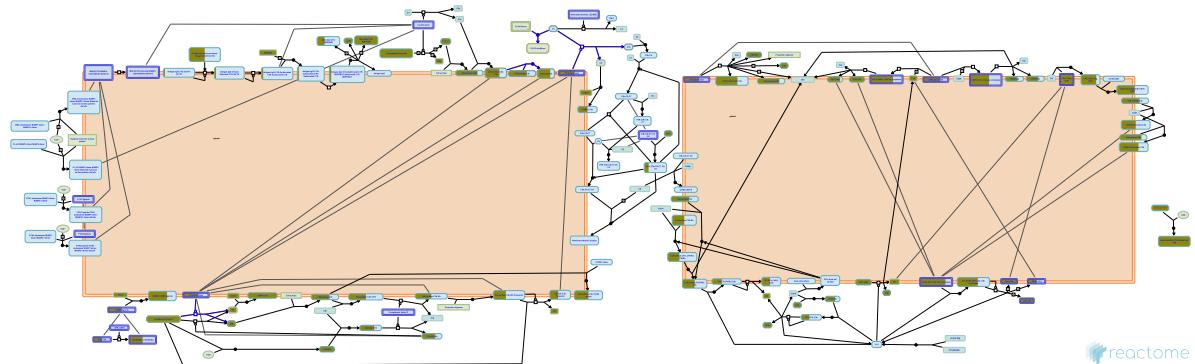
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

2 submitted entities found in this pathway, mapping to 2 Reactome entities

Input	UniProt Id	Input	UniProt Id
F3	P20352	Tfpi	O54819

25. Activation of C3 and C5 (R-MMU-174577)



Cellular compartments: plasma membrane, extracellular region.

Inferred from: Activation of C3 and C5.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

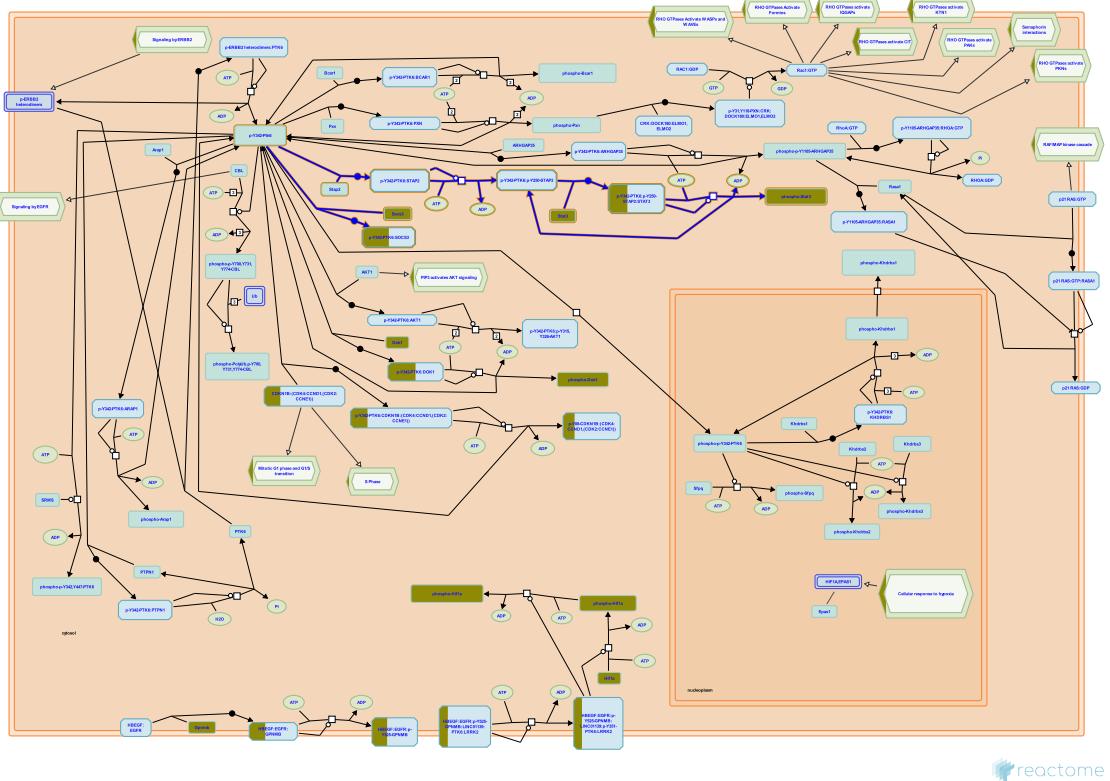
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

2 submitted entities found in this pathway, mapping to 2 Reactome entities

Input	UniProt Id	Input	UniProt Id
C3	P01027	C4b	P01029

26. PTK6 Activates STAT3 (R-MMU-8849474)



Inferred from: PTK6 Activates STAT3.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

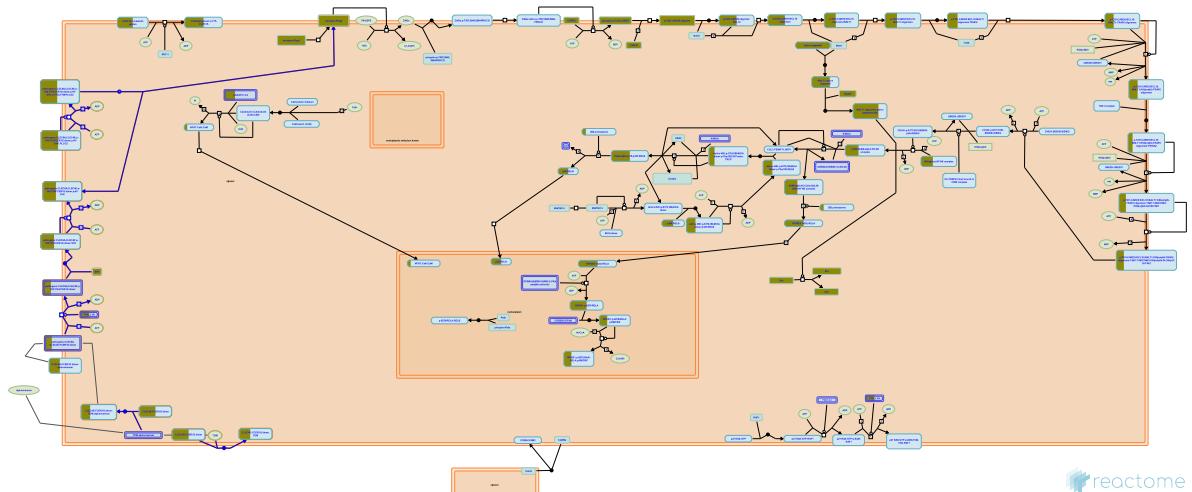
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

2 submitted entities found in this pathway, mapping to 2 Reactome entities

Input	UniProt Id	Input	UniProt Id
Socs3	O35718	Stat3	P42227

27. Dectin-2 family (R-MMU-5621480)



Cellular compartments: plasma membrane.

Inferred from: Dectin-2 family.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

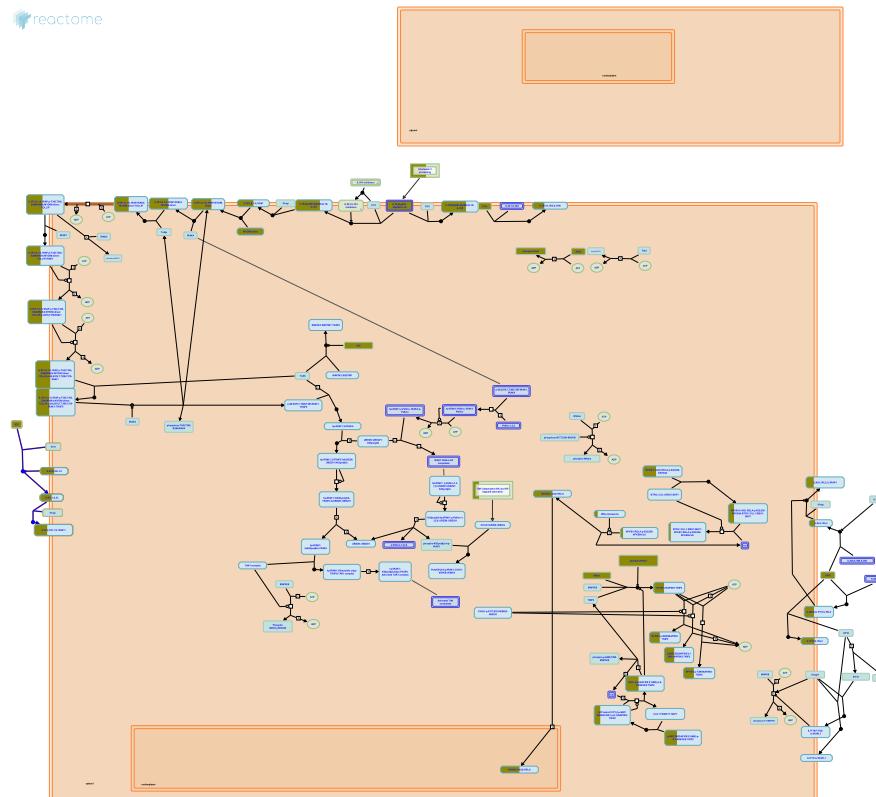
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

4 submitted entities found in this pathway, mapping to 4 Reactome entities

Input	UniProt Id	Input	UniProt Id
Fcer1g	P20491	Lyn	P25911
Plcg2	Q8CIH5	Syk	P48025

28. Interleukin-33 signaling (R-MMU-9014843)



Inferred from: Interleukin-33 signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

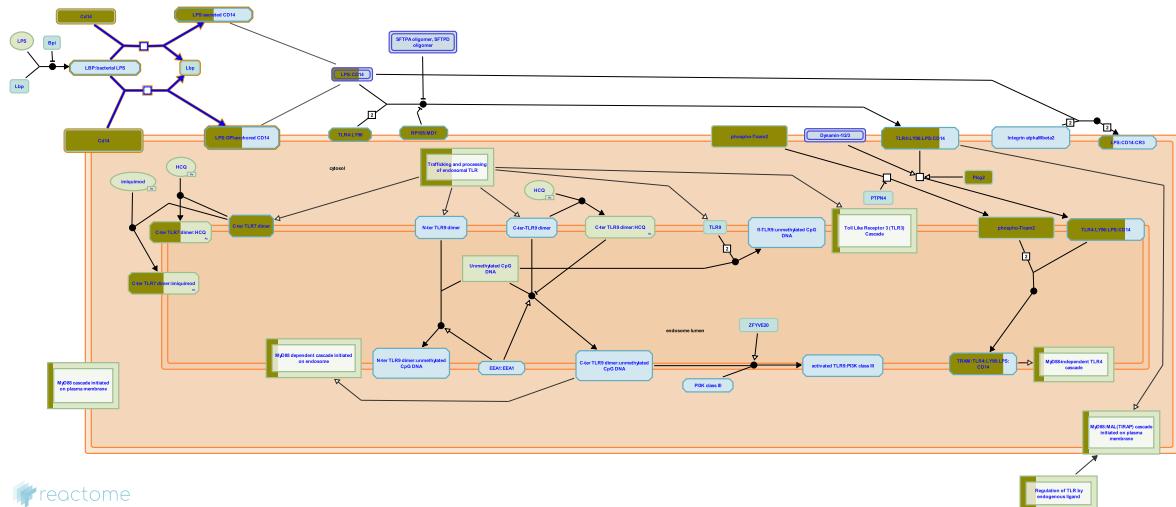
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Il33	Q8BVZ5

29. Transfer of LPS from LBP carrier to CD14 (R-MMU-166020)



Cellular compartments: plasma membrane, extracellular region.

Inferred from: Transfer of LPS from LBP carrier to CD14.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

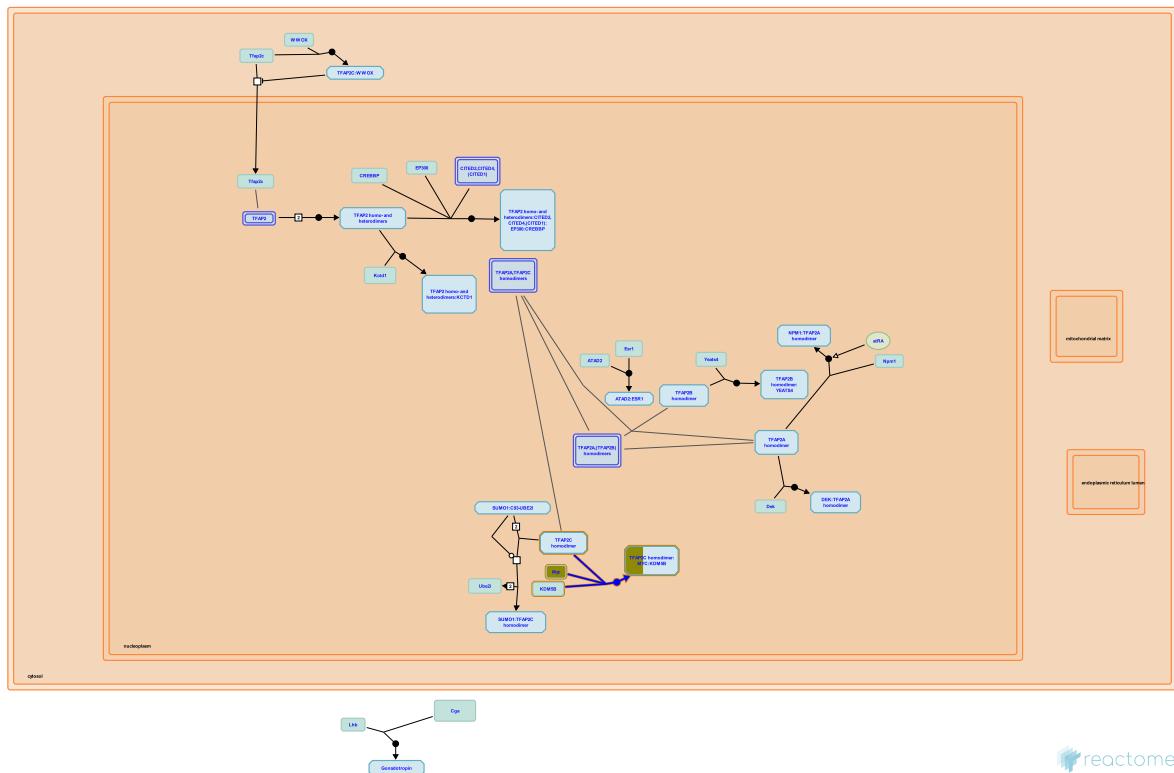
Edit history

Date	Action	Author
2022-08-25	Created	Wright A
2022-09-05	Modified	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Cd14	P10810

30. TFAP2 (AP-2) family regulates transcription of cell cycle factors ([R-MMU-8866911](#))



Inferred from: TFAP2 (AP-2) family regulates transcription of cell cycle factors.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

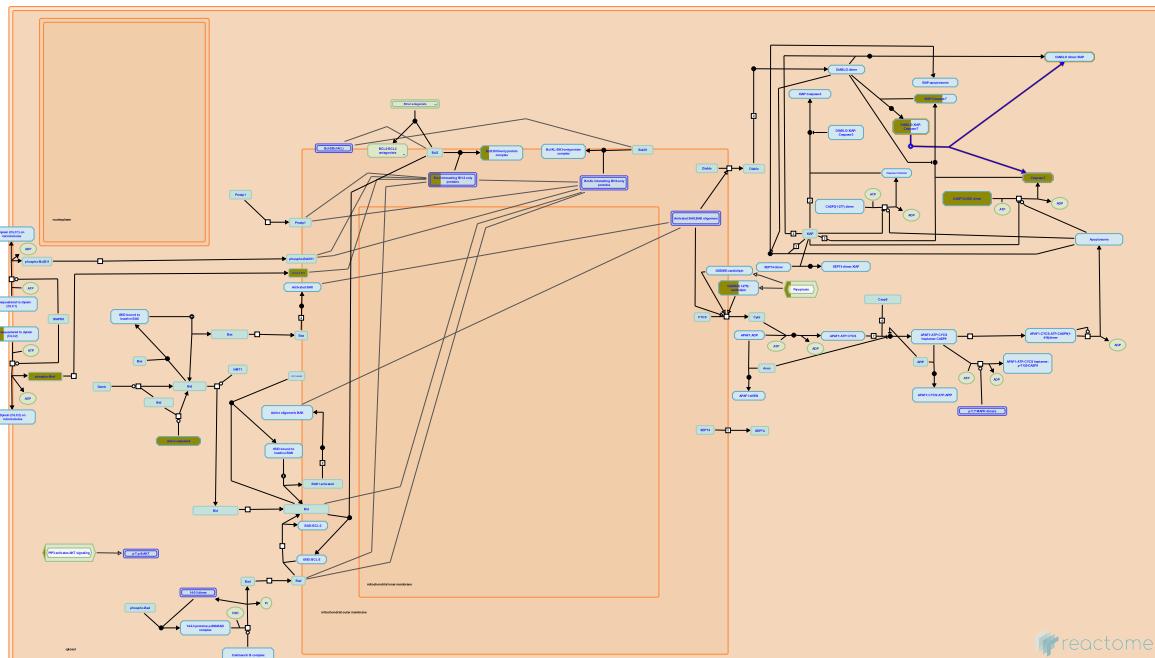
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Myc	P01108

31. SMAC(DIABLO)-mediated dissociation of IAP:caspase complexes (R-MMU-111464)



Cellular compartments: cytosol.

Inferred from: SMAC(DIABLO)-mediated dissociation of IAP:caspase complexes .

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

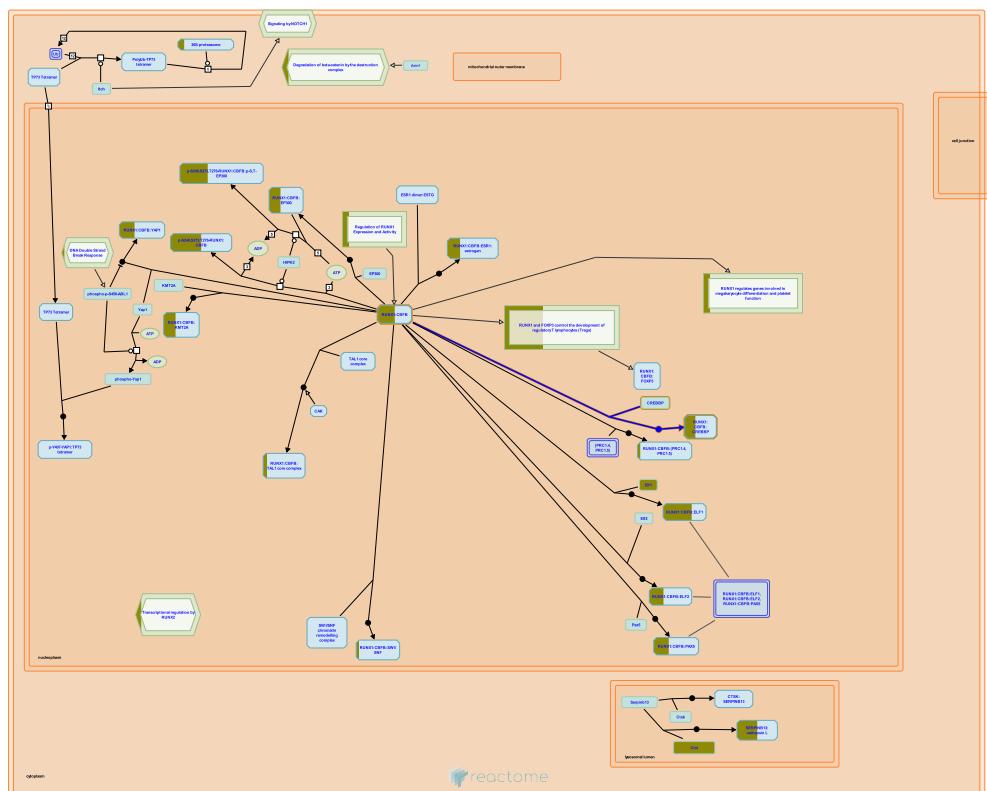
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Casp7	P97864

32. RUNX1 regulates transcription of genes involved in differentiation of myeloid cells (R-MMU-8939246)



Inferred from: RUNX1 regulates transcription of genes involved in differentiation of myeloid cells.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

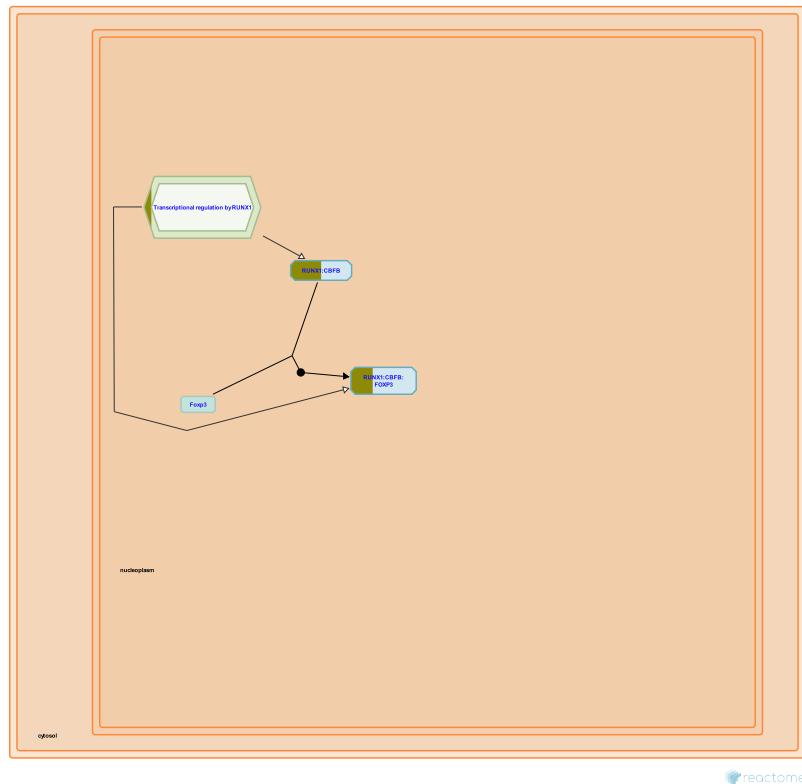
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Runx1	Q03347

33. RUNX1 and FOXP3 control the development of regulatory T lymphocytes (Tregs) (R-MMU-8877330)



Inferred from: RUNX1 and FOXP3 control the development of regulatory T lymphocytes (Tregs).

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

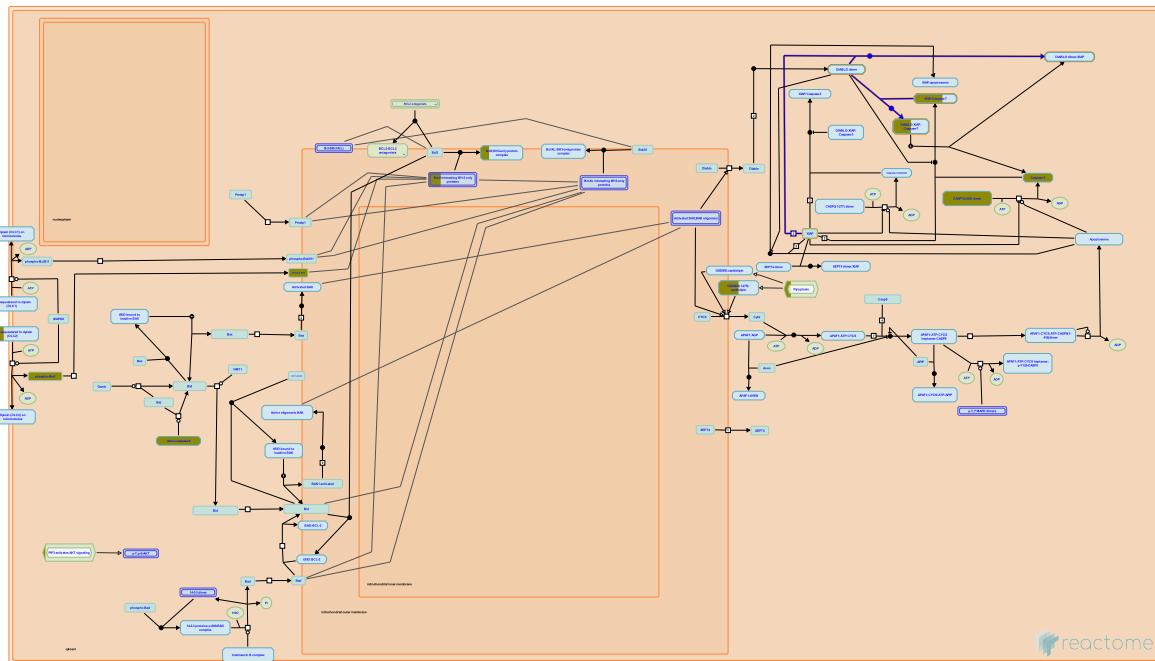
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Runx1	Q03347

34. SMAC (DIABLO) binds to IAPs (R-MMU-111463)



Cellular compartments: cytosol.

Inferred from: SMAC (DIABLO) binds to IAPs .

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

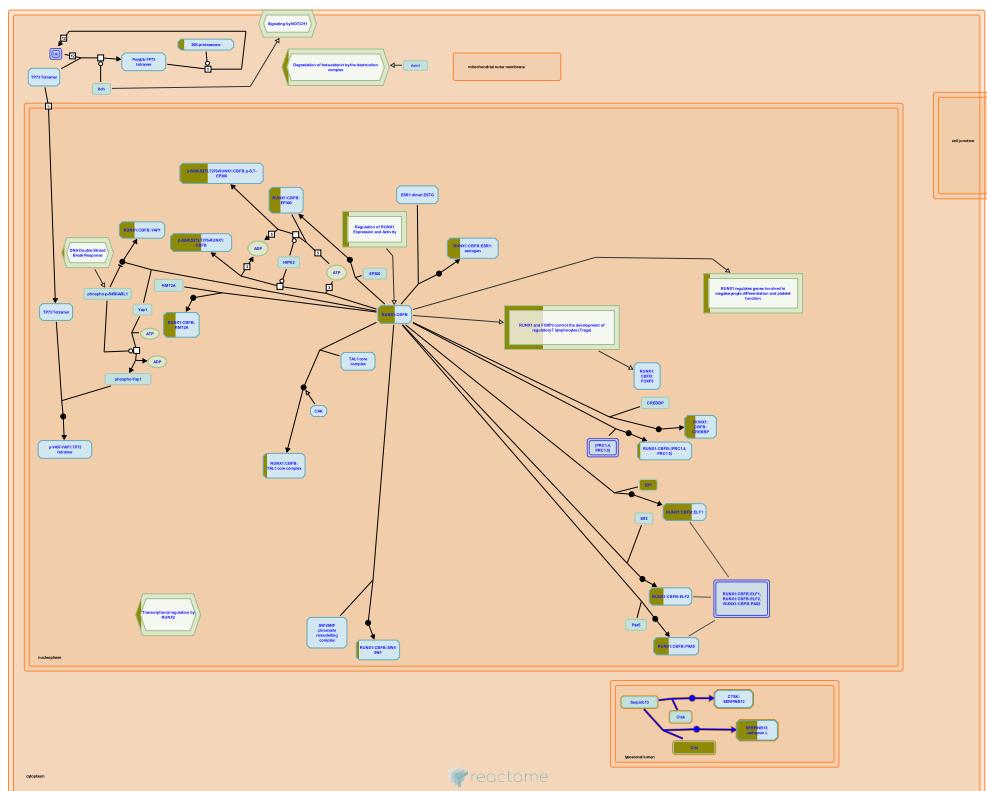
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Casp7	P97864

35. RUNX1 regulates transcription of genes involved in differentiation of keratinocytes (R-MMU-8939242)



Inferred from: RUNX1 regulates transcription of genes involved in differentiation of keratinocytes.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

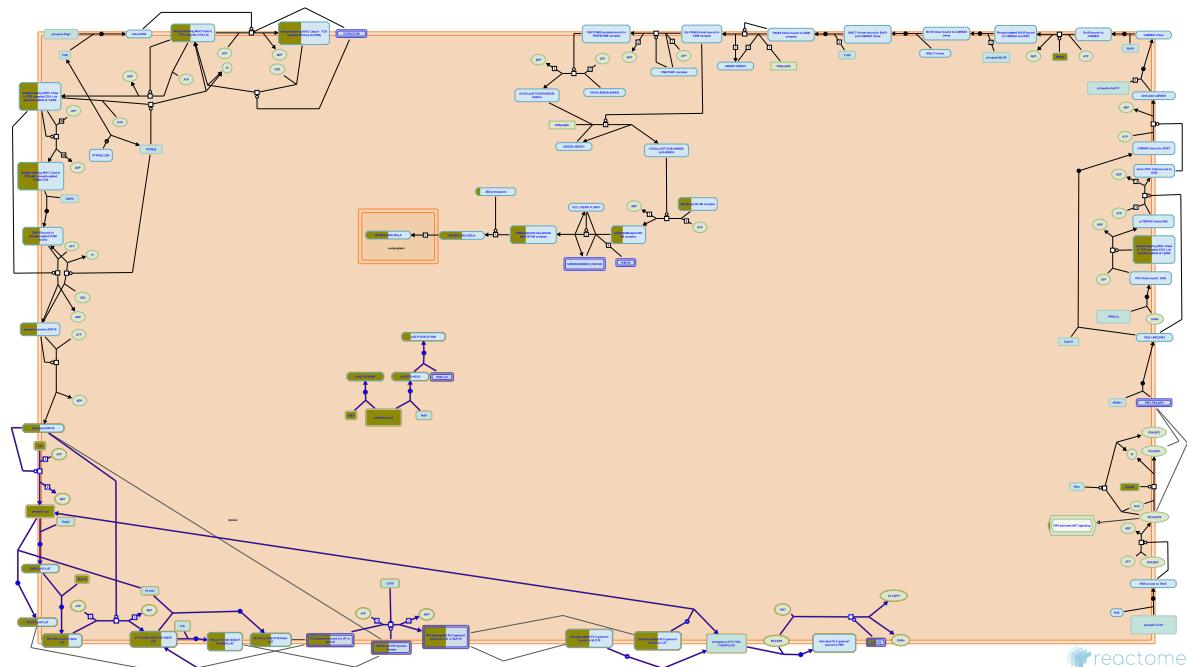
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Ctsl	P06797

36. Generation of second messenger molecules (R-MMU-202433)



Cellular compartments: plasma membrane.

Inferred from: Generation of second messenger molecules.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

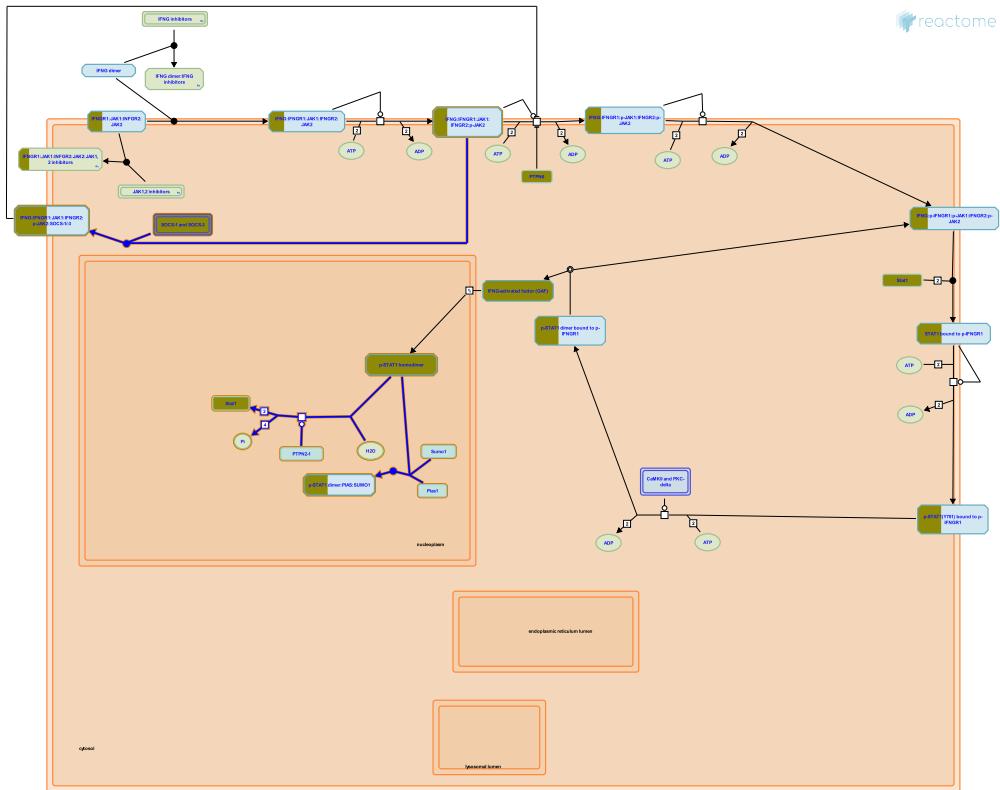
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

12 submitted entities found in this pathway, mapping to 12 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Cd247	P24161	Cd3d	P04235	Cd3g	P11942
Fyb	O35601	H2-Aa	P01910	H2-Ab1	P01921
H2-Eb1	P04230	Lat	O54957	Lck	P06240
Lcp2	Q60787	Plcg2	Q8CIH5	Trbc1	A0A075B5J3

37. Regulation of IFNG signaling (R-MMU-877312)



Inferred from: Regulation of IFNG signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

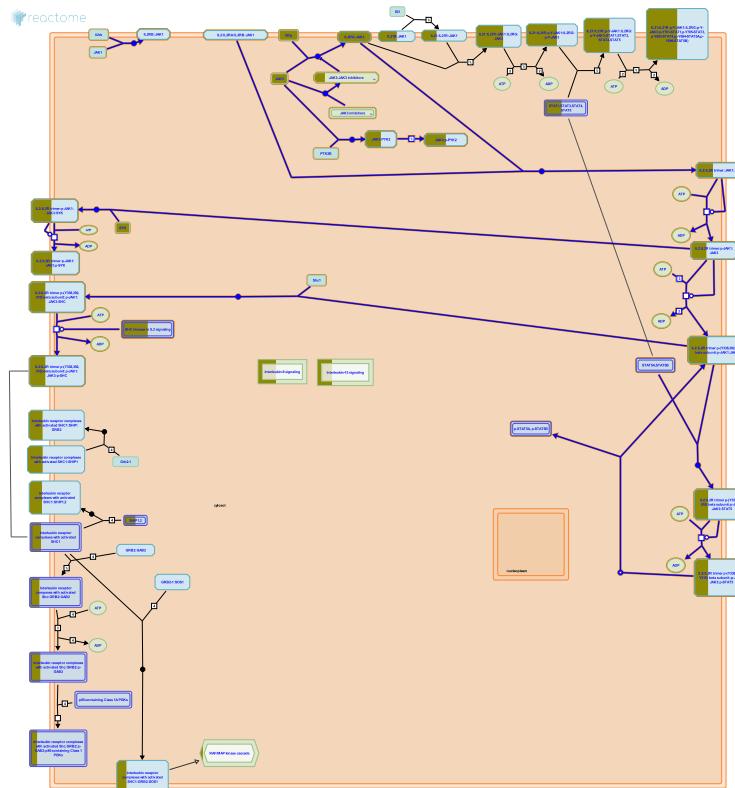
Edit history

Date	Action	Author
2022-08-25	Created	Wright A
2022-09-05	Modified	Wright A

4 submitted entities found in this pathway, mapping to 4 Reactome entities

Input	UniProt Id	Input	UniProt Id
Ifngr1	P15261	Socs1	O35716
Socs3	O35718	Stat1	P42225

38. Interleukin-2 signaling (R-MMU-9020558)



Inferred from: Interleukin-2 signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

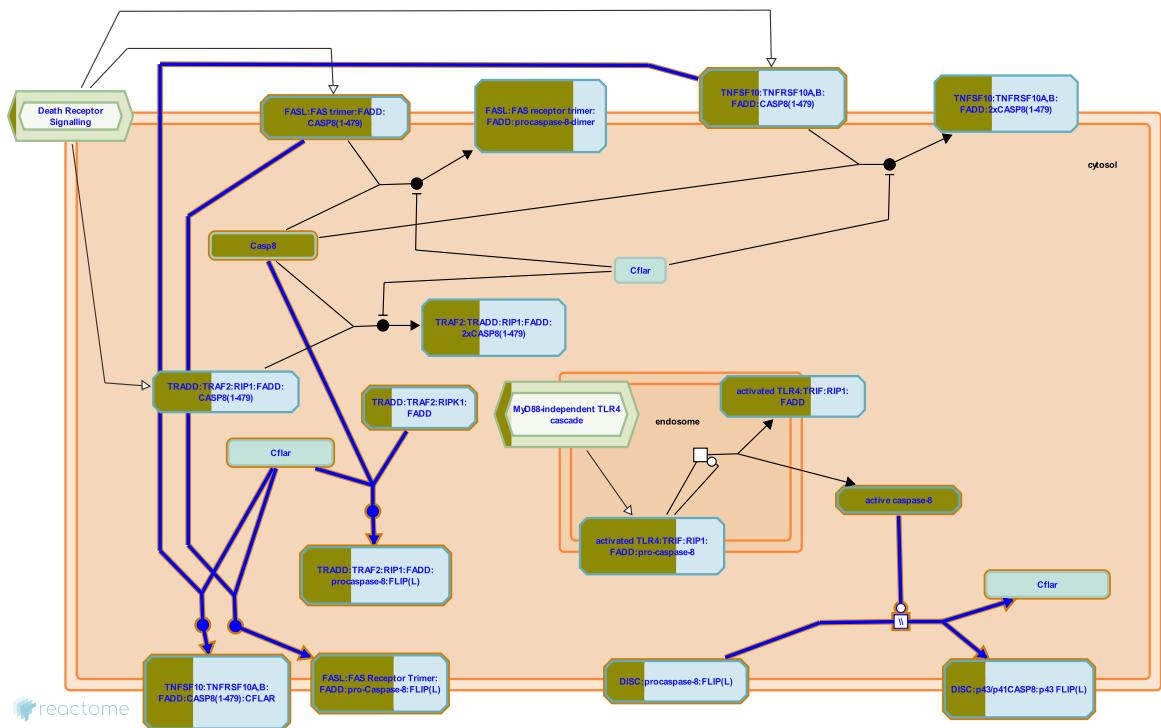
Edit history

Date	Action	Author
2022-08-25	Created	Wright A
2022-09-05	Modified	Wright A

4 submitted entities found in this pathway, mapping to 4 Reactome entities

Input	UniProt Id	Input	UniProt Id
Il2rg	P34902	Jak3	Q62137
Lck	P06240	Syk	P48025

39. Regulation by c-FLIP (R-MMU-3371378)



Inferred from: Regulation by c-FLIP.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

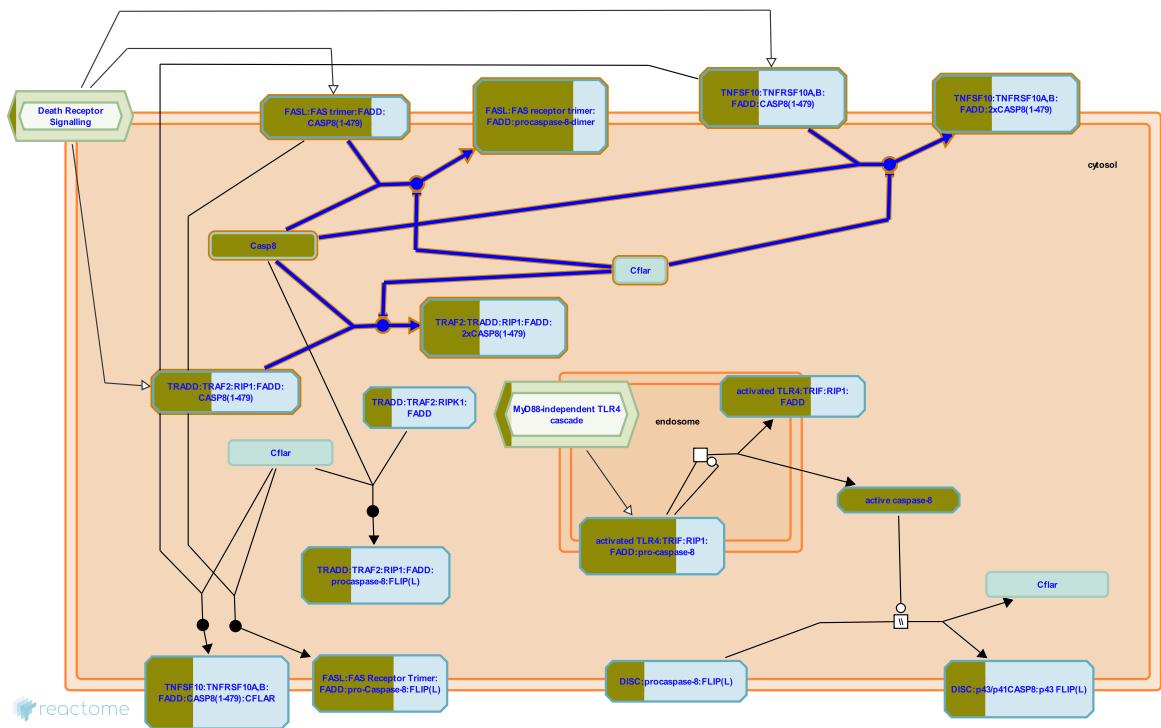
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

3 submitted entities found in this pathway, mapping to 3 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Casp8	O89110	Fadd	Q61160	Fas	P25446

40. Dimerization of procaspase-8 (R-MMU-69416)



Inferred from: Dimerization of procaspase-8.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

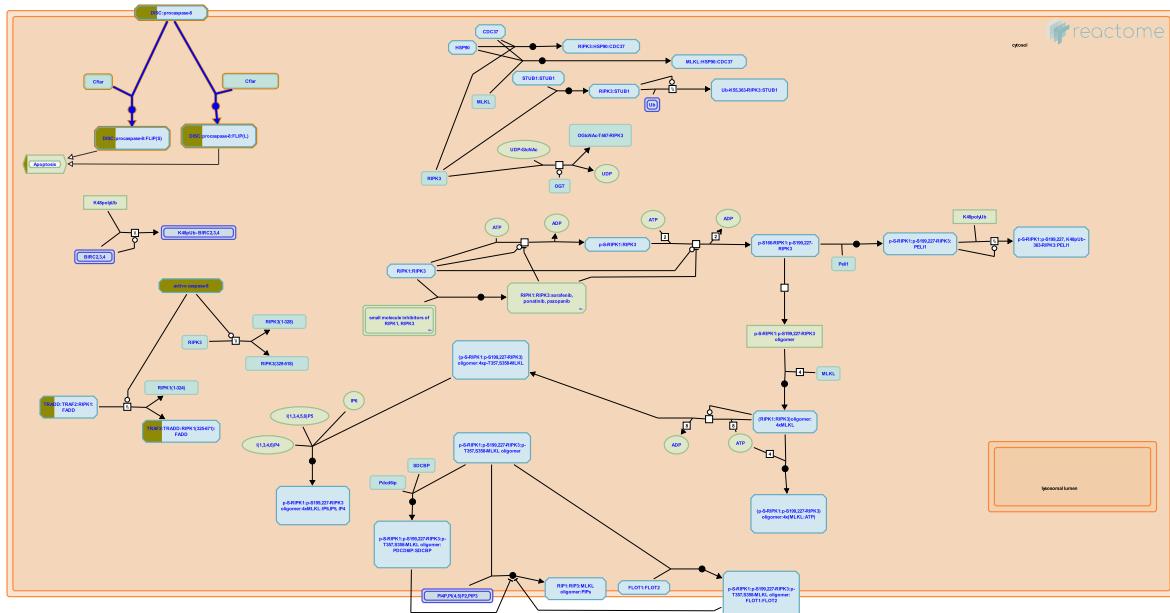
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

3 submitted entities found in this pathway, mapping to 3 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Casp8	O89110	Fadd	Q61160	Fas	P25446

41. CASP8 activity is inhibited (R-MMU-5218900)



Inferred from: CASP8 activity is inhibited.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

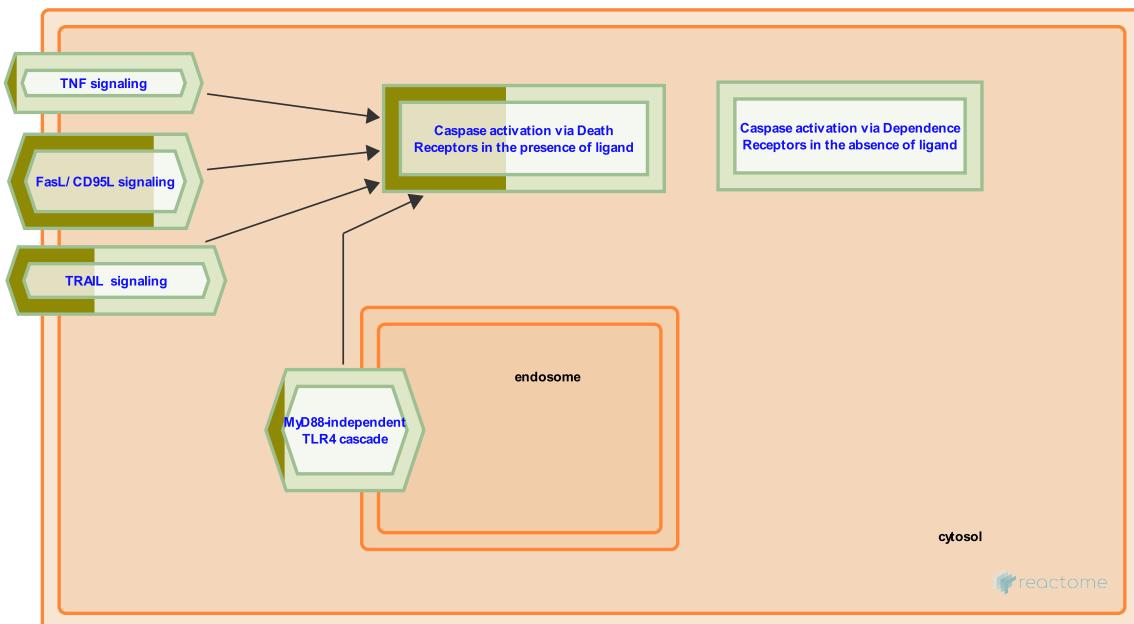
Edit history

Date	Action	Author
2022-08-25	Created	Wright A
2022-09-05	Modified	Wright A

3 submitted entities found in this pathway, mapping to 3 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Casp8	O89110	Fadd	Q61160	Fas	P25446

42. Caspase activation via extrinsic apoptotic signalling pathway (R-MMU-5357769)



Inferred from: Caspase activation via extrinsic apoptotic signalling pathway.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

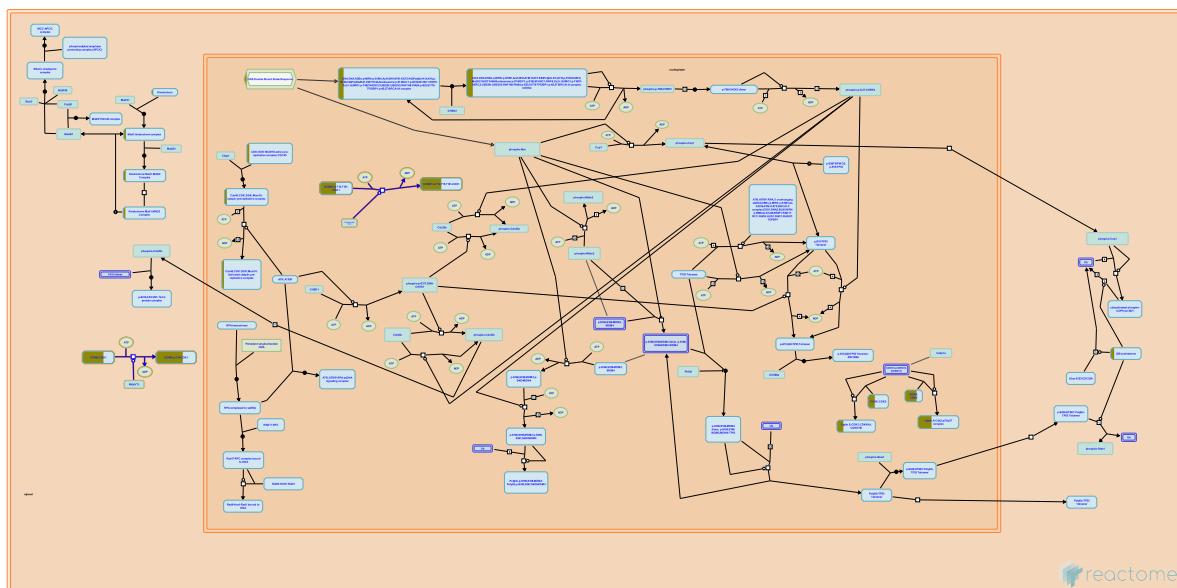
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

7 submitted entities found in this pathway, mapping to 7 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Casp8	O89110	Cd14	P10810	Fadd	Q61160
Fas	P25446	Ly96	Q9JHF9	Ticam2	Q8BJQ4
Tlr4	Q9QUK6				

43. G2/M DNA replication checkpoint (R-MMU-69478)



Inferred from: G2/M DNA replication checkpoint.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

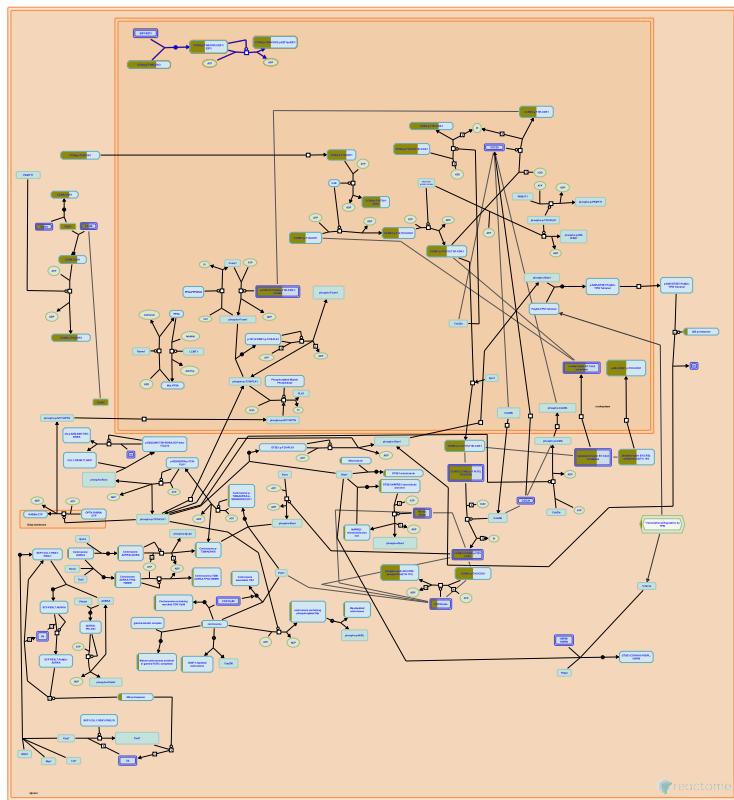
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

2 submitted entities found in this pathway, mapping to 2 Reactome entities

Input	UniProt Id	Input	UniProt Id
Ccnb2	P30276	Cdk1	P11440

44. G2 Phase (R-MMU-68911)



Inferred from: G2 Phase.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

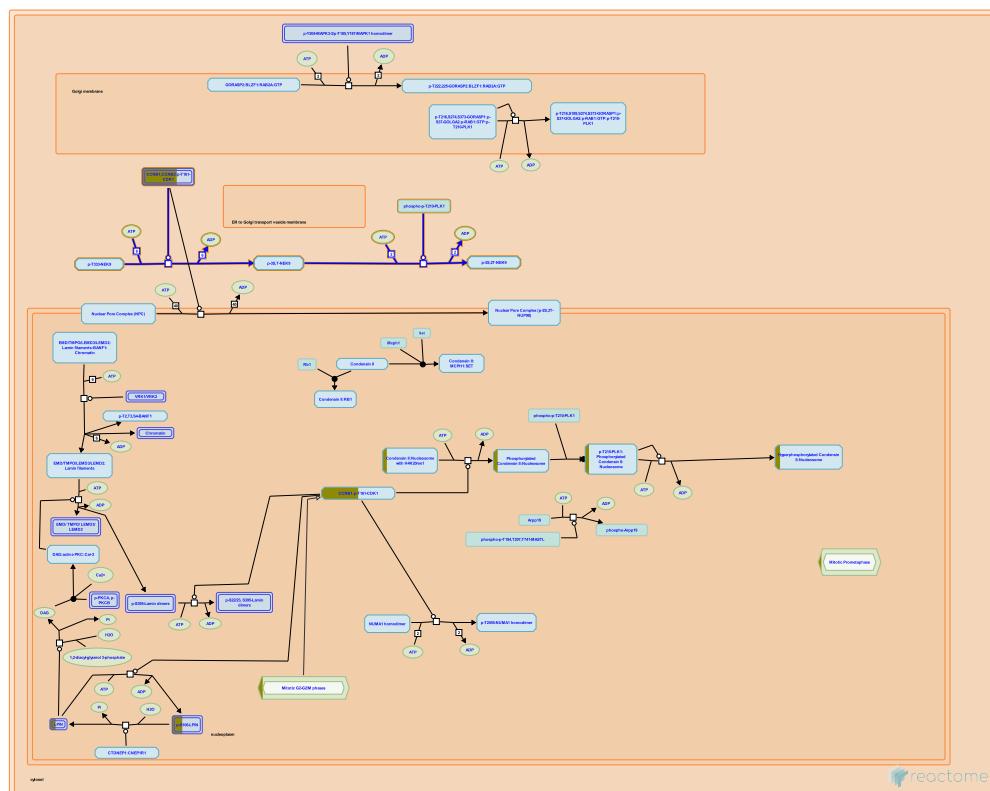
Edit history

Date	Action	Author
2022-08-25	Created	Wright A
2022-09-05	Modified	Wright A

2 submitted entities found in this pathway, mapping to 2 Reactome entities

Input	UniProt Id	Input	UniProt Id
Ccna2	P51943	Cdk2	P97377

45. Activation of NIMA Kinases NEK9, NEK6, NEK7 ([R-MMU-2980767](#))



Inferred from: Activation of NIMA Kinases NEK9, NEK6, NEK7.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

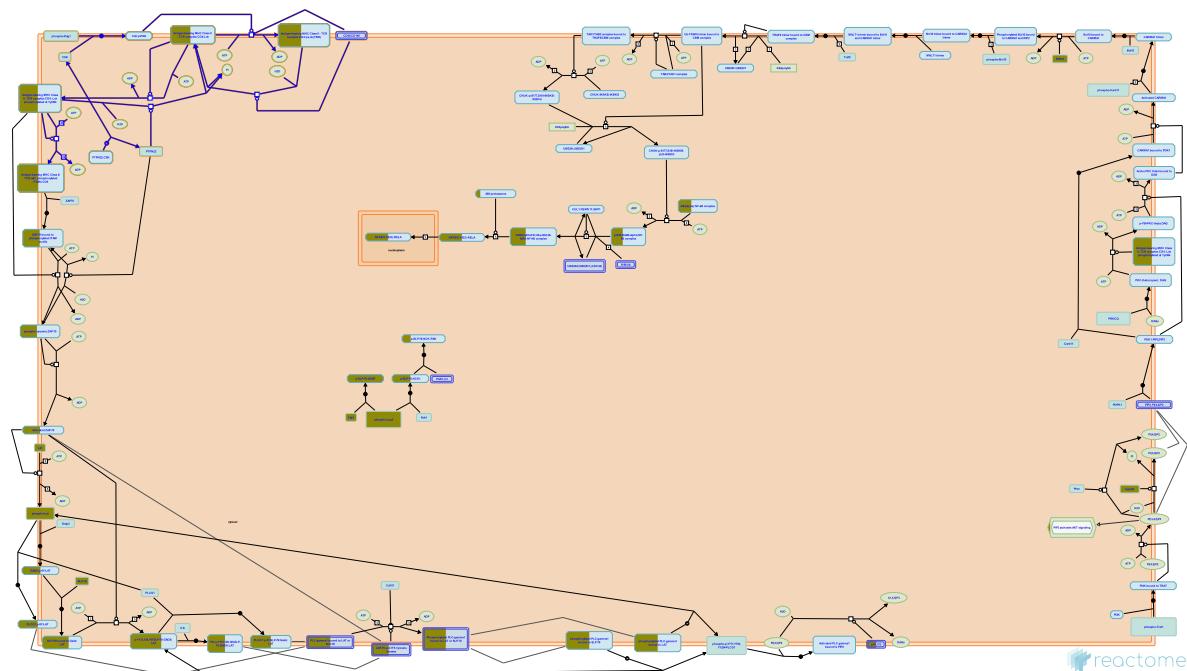
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

2 submitted entities found in this pathway, mapping to 2 Reactome entities

Input	UniProt Id	Input	UniProt Id
Ccnb2	P30276	Cdk1	P11440

46. Phosphorylation of CD3 and TCR zeta chains (R-MMU-202427)



Cellular compartments: plasma membrane.

Inferred from: Phosphorylation of CD3 and TCR zeta chains.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

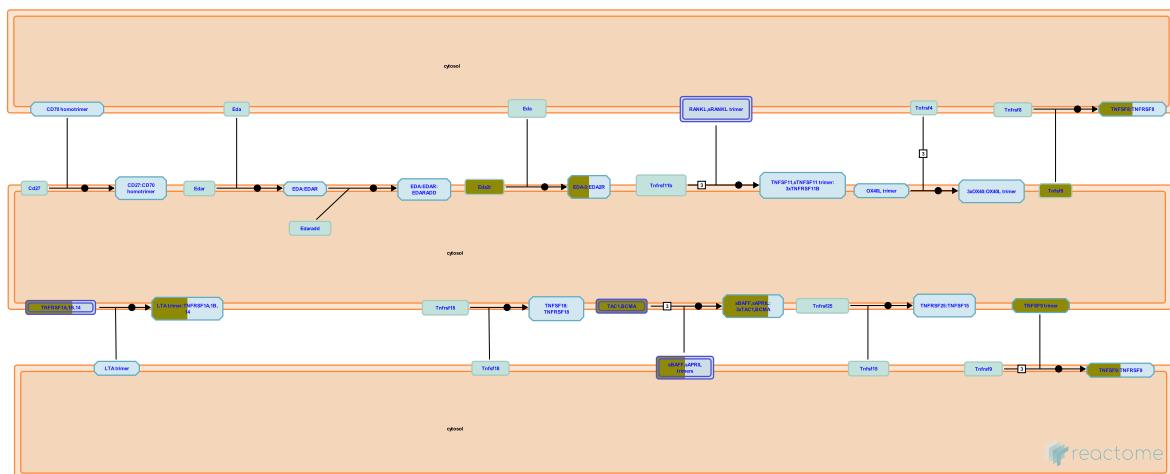
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

8 submitted entities found in this pathway, mapping to 8 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Cd247	P24161	Cd3d	P04235	Cd3g	P11942
H2-Aa	P01910	H2-Ab1	P01921	H2-Eb1	P04230
Lck	P06240	Trbc1	A0A075B5J3		

47. TNFs bind their physiological receptors ([R-MMU-5669034](#))



Cellular compartments: plasma membrane.

Inferred from: TNFs bind their physiological receptors.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

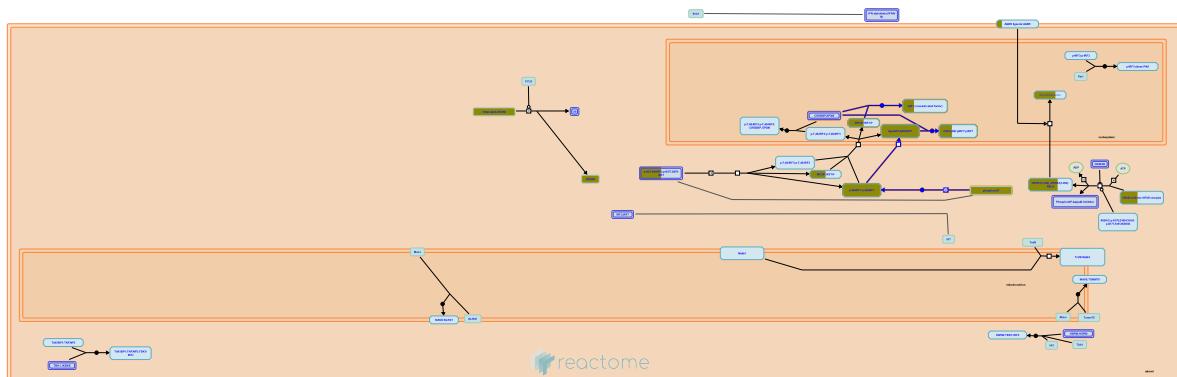
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

8 submitted entities found in this pathway, mapping to 8 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Eda2r	Q8BX35	Tnfrsf13b	Q9ET35	Tnfrsf14	Q80WM9
Tnfrsf17	O88472	Tnfrsf1b	P25119	Tnfsf13b	Q9WU72
Tnfsf8	P32972	Tnfsf9	P41274		

48. TRAF6 mediated IRF7 activation (R-MMU-933541)



Cellular compartments: mitochondrial outer membrane.

Inferred from: TRAF6 mediated IRF7 activation.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

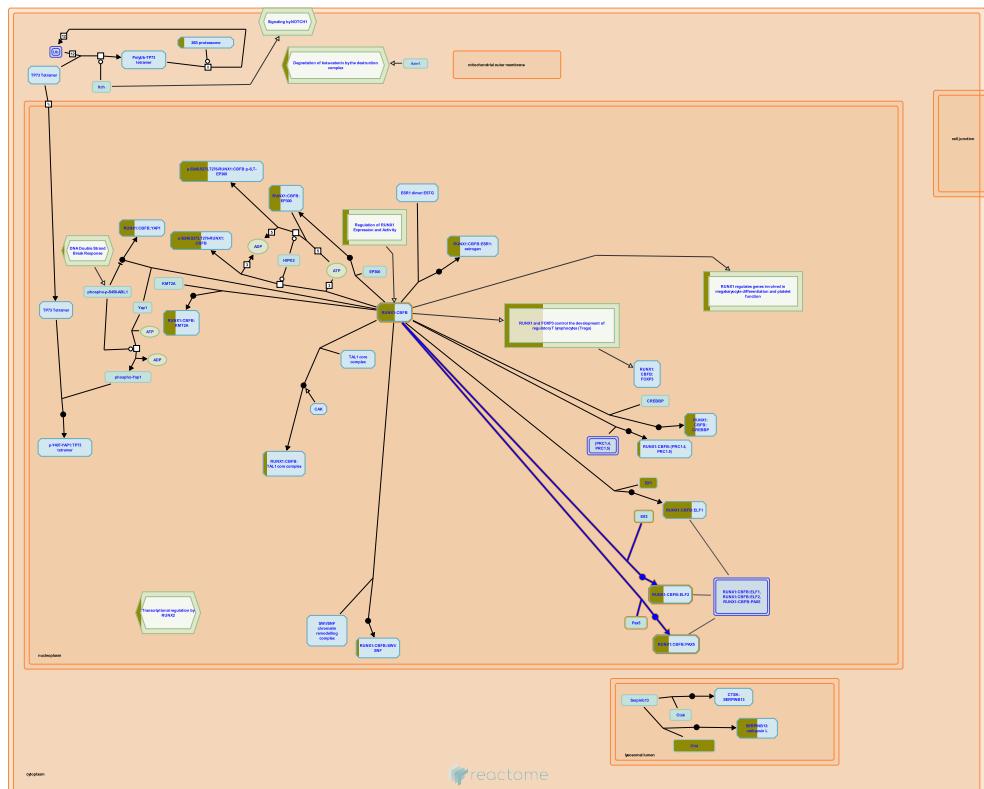
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Irf7	P70434

49. RUNX1 regulates transcription of genes involved in BCR signaling (R-MMU-8939245)



Inferred from: RUNX1 regulates transcription of genes involved in BCR signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

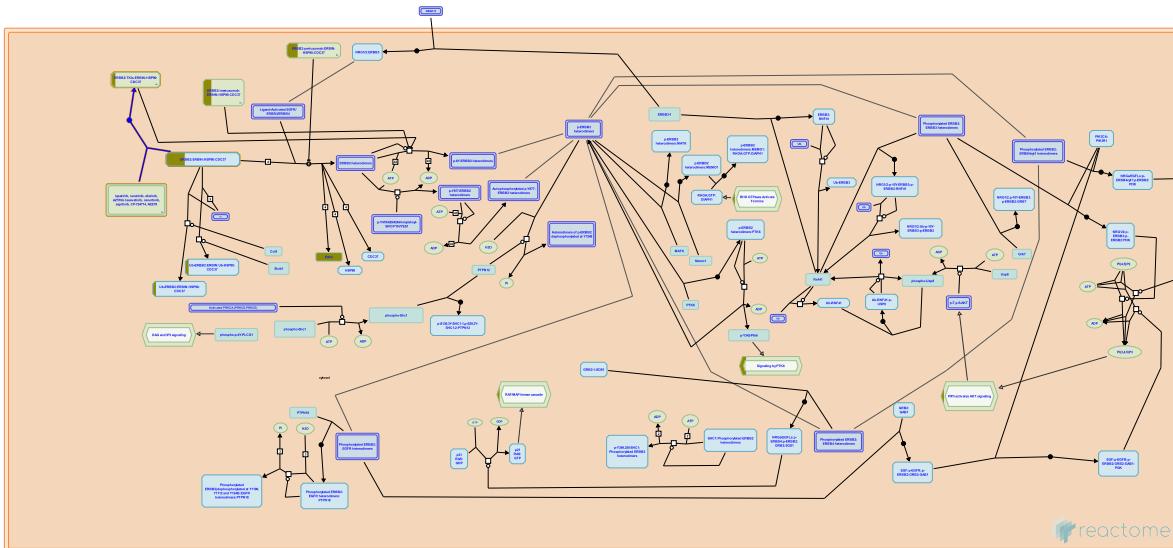
Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Runx1	Q03347

50. Drug-mediated inhibition of ERBB2 signaling (R-MMU-9652282)



Inferred from: Drug-mediated inhibition of ERBB2 signaling.

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

References

Edit history

Date	Action	Author
2022-08-25	Created	Wright A

1 submitted entities found in this pathway, mapping to 1 Reactome entities

Input	UniProt Id
Erbin	Q80TH2

6. Identifiers found

Below is a list of the input identifiers that have been found or mapped to an equivalent element in Reactome, classified by resource.

783 of the submitted entities were found, mapping to 3713 Reactome entities

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
A2m	P01023	Abca9	Q8IUA7	Abcc3	O15438
Acads	P16219	Acat2	O75908	Acer3	Q9NUN7
Ada	P00813	Adamtsl3	P82987	Adamtsl4	Q6UY14
Adcy7	P51828	Adgre1	Q61549	Adgrg5	F1P3R6
Adora3	P0DMS8	Adrb2	P07550	Adssl1	Q8N142
Afp	P02771	Aga	P20933	Ager	Q15109
Agtrap	Q6RW13	Aim2	O14862	Akr1b10	O60218
Aldh1l2	Q3SY69	Aldh3b1	P43353	Alox5	P09917
Alox5ap	Q148F2	Ang	P03950	Angpt1	Q15389
Antxr2	P58335-1, P58335-4	Anxa2	P07355	Anxa5	P08758
Apbb1ip	Q7Z5R6	Apobec1	F1SLW4	Apobr	Q0VD83
Apoc2	P02655	Apoc4	P55056	Apoe	P02649
Aqp4	P55088	Arhgap18	Q8N392	Arhgap30	Q7Z6I6
Arhgap4	P98171	Arhgap45	Q92619	Arhgap9	Q9BRR9
Arhgdib	P52566	Arhgef16	Q5VV41	Arpc1b	O15143
Arsk	Q6UWY0	As3mt	Q9HBK9	Asah1	Q13510
Asb10	Q91ZT7	Aspg	Q86U10	Atf3	P18847
Atp1b3	P54709	Atp6v0d2	Q8N8Y2	Atp6v0e	O15342
Axl	P30530	B2m	P61769	B3gnt7	Q8NFL0
B3gnt8	Q67FW5, Q7Z7M8	B4galt1	P15291	Baiap2l2	Q6UXY1
Batf	Q16520	Bco2	A0A6I8SMW5	Bin2	Q9UBW5
Birc3	Q13489	Blnk	Q8WV28	Bmf	Q96LC9
Bst2	Q10589	Btk	Q06187	Btla	Q7Z6A9
C1qa	Q5E9E3	C1qb	Q2KIV9	C1qc	A0A3B0IZF8
C1ra	Q8CG16	C3	P01026	C3ar1	Q16581
C4b	Q6MG90	C5ar1	Q673L2	C5ar2	Q08DZ7
Cacnals	Q13698	Capg	Q9BPX3	Card9	Q9H257
Casp1	P29466	Casp4	P49662	Casp7	P55210
Casp8	Q14790	Casq1	P31415	Castor1	Q8WTX7
Cav2	P51636	Ccl12	Q62401	Ccl2	P13500
Ccl3	P10147	Ccl4	P13236	Ccl6	Q68FP3
Ccl7	P80098	Ccl9	Q5FVN3	Ccna2	P20248
Ccnb2	O95067	Ccr5	P51681	Ccrl2	O00421
Cd14	P08571	Cd151	P48509	Cd180	Q99467
Cd2	Q148M9	Cd200r1	A0A5G2R3T1	Cd22	A0A3Q1NI55
Cd226	A0A287AFE6	Cd247	P20963-1	Cd274	Q9NZQ7
Cd300a	Q9UGN4	Cd300c2	Q7TSN2	Cd300lb	A8K4G0
Cd300lf	A0A287AYU8	Cd33	P20138	Cd3d	P04235
Cd3g	P11942	Cd48	Q2KHZ6	Cd52	P31358
Cd53	P19397	Cd63	P08962	Cd68	P34810
Cd72	P21854	Cd74	P04233	Cd79b	F1MMQ7

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Cd84	F1N7U9	Cd86	P42081	Cd8a	A0A287A9Y5
Cd9	P21926	Cdk1	P06493	Cdk2	P24941
Cdk6	Q00534	Cfh	A0A3Q1MP45	Cgas	Q8N884
Ch25h	O95992	Chst14	Q8NCH0	Cklf	Q13887
Cks1b	P61024	Clcf1	Q9UBD9	Cldn11	O75508
Cldn14	O95500	Cldn19	Q8N6F1	Clec1b	Q9P126
Clec5a	Q9NY25	Clec7a	Q9BXN2	Cln3	P13365
Clu	P10909	Cmtm6	Q9NX76	Cmtm7	A0A803JCR4
Cnr2	P34972	Cntf	P26441	Col13a1	Q5TAT6
Col16a1	Q07092	Colec12	Q5KU26	Cr1l	Q63135
Creg1	O75629	Crispld2	Q9H0B8	Crlf2	Q9HC73
Cryba4	A0A7D9NJS9	Csf1	P09603	Csf1r	P07333
Csf2rb	P32927	Csf3r	Q99062	Cst3	P01034
Ctsa	P10619	Ctsb	P07858	Ctsc	F1NWG2
Ctsd	Q05744	Ctse	A0A1L1RYV3	Ctsh	A0A1D5PG47
Ctsl	P07711	Ctso	P43235	Ctss	P25774
Ctsw	P56202	Ctsz	Q9UBR2	Cx3cr1	P49238
Cxcl10	P02778	Cxcl16	Q9H2A7	Cxcl5	P42830
Cxcl9	Q07325	Cxcr3	P49682	Cxcr6	O00574
Cyba	P13498	Cybb	P04839	Cybrd1	Q53TN4
Cysltr1	F1P4F9	Cyth4	Q9UIA0	Dap	Q7JNL9
Dapp1	Q08DV4	Dbf4	Q9UBU7	Dbi	P07108
Dcstamp	Q9H295	Dcxr	Q7Z4W1	Ddah2	O95865
Ddx58	O95786	Decr1	A0A5G2R5W7	Def6	Q01524
Dennd1c	A0A803JXY2	Dera	Q9Y315	Dhx58	Q96C10
Diaph3	Q9NSV4	Dkk2	Q9UBU2	Dna2	P51530
Dnase1l1	P49184	Dnase2a	O00115	Dock2	Q92608
Dock8	Q8NF50	Dok1	Q99704	Dpp7	Q9UHL4
Dtx3l	Q3UIR3	Ebi3	Q14213	Echdc3	A0A6I8RGG7
Eda2r	Q9HAV5	Edem2	Q9BV94	Eef1d	P57776
Eef2kmt	Q96G04	Efemp1	Q12805	Eif2ak2	P19525
Eif4ebp1	E1C115	Elf1	Q60775	Elov15	Q9NYP7
Entpd1	P49961	Ephx1	P07099	Epsti1	Q96J88
Erap1	F1MU34	Erbin	Q96RT1	Espl1	Q14674
Eya4	O95677	F11r	Q9Y624	F3	P13726
Fabp5	Q01469	Fadd	Q13158	Fas	P25445
Fblim1	E1C4X1	Fbln5	Q9UBX5	Fbxw4	P57775
Fcer1g	P30273	Fcgr1	P12314	Fcgr2b	F1MHH9
Fcgr3	O75015	Fcgr4	A0A0B4J1G0	Fdft1	P37268
Fdps	P14324	Fermt3	Q86UX7	Fes	P07332
Fgd2	Q7Z6J4	Fgf2	P09038	Fgfrl1	Q8N441
Fgl2	Q14314	Fgr	P09769	Fli1	Q01543
Fmnl3	Q8IVF7	Folr2	P14207	Fth1	P02794
Fxyd1	O00168	Fyb	O15117	Gabarap	O95166
Gadl1	Q6ZQY3	Galnt6	Q8NCL4	Gbp2	P32456
Gbp3	Q9H0R5	Gbp4	Q96PP9	Gbp5	Q96PP8
Gbp6	Q6ZN66	Gbp7	Q8N8V2	Gdpd3	Q7L5L3
Gfap	P14136	Ggh	Q92820	Gjc2	Q5T442
Glipr1	P48060	Gltp	Q9NZD2	Glycam1	Q8IVK1

Input	UniProt Id	Input	UniProt Id	Input	UniProt Id
Gm2a	P17900	Gmfg	O60234	Gmip	Q9P107
Gna12	Q03113	Gna15	P30679	Gng12	Q9UBI6
Gng5	P63218	Gngt2	O14610	Gns	P15586
Gpam	Q9HCL2	Gpnmb	Q14956	Gpr183	P32249
Gpr35	Q9HC97	Gpr65	Q8IYL9	Gpr84	Q9NQS5
Gpsm3	Q9Y4H4	Grb14	Q14449	Grn	P28799
Gsdmd	P57764	Gsn	P06396	Gsto2	Q9H4Y5
Gstt3	E1JJS1	Gucala	F7C745	Gusb	P08236
Gzmk	A0A2R8PYA2	H1f2	P16403	H2-Aa	P01910
H2-Ab1	P01921	H2-D1	P14427	H2-DMa	P28078
H2-DMb1	P35737	H2-Eb1	P04230	H2-K1	P01901
H2-M3	Q31093	H2-Oa	Q9QWV1	H2-Ob	A0A494BB12
H2-Q4	Q8HWB2	H2-Q6	P79568	H2-Q7	P14429
H2-T10	F6T1I5	H2-T22	Q31615	H2-T23	P06339
H2ac18	Q6FI13	H2ac19	Q6FI13	H2ac6	Q93077
H2bc4	P62807	H2bc8	P62807	H4c11	P62805
H4c3	P62805	H4c8	P62805	H4c9	P62805
Haa0	P46952	Hacd2	Q6Y1H2	Hacd4	Q5VWC8
Havcr2	Q8TDQ0	Hcar2	Q8TDS4	Hck	P08631
Hcst	Q9GJR5	Hexa	P06865	Hexb	P07686
Hfe	Q30201	Hif1a	Q16665	Hk2	Q8AYP7
Hk3	P52790	Hmox1	P09601	Hoga1	Q86XE5
Hpgd	P15428	Hpgds	O60760	Hpn	P05981
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Hvcn1	F1NMC8	Icam1	P05362	Id3	Q02535
Ifi204	P0DOV2	Ifi27	P40305	Ifi30	P13284
Ifi35	P80217	Ifih1	Q9BYX4	Ifit1	P09914
Ifit2	P09913	Ifit3	O14879	Ifitm2	Q01629
Ifitm3	Q01628	Ifitm6	A0A1B0GS75	Ifitm7	G3X9Z2
Ifnar2	P48551-2	Ifngr1	P15260	Igf1	P05017
Ighd	P01880	Ikbke	Q14164	Ikzf1	Q13422-1
Il10ra	Q13651	Il10rb	Q08334	Il13ral	O09030
Il15	P40933	Il18bp	O95998	Il1a	P01583
Il1b	P01584	Il1rl2	Q9HB29	Il1rn	P18510
Il21r	Q9HBE5	Il2rg	P31785	Il33	O95760
Il3ra	P26951	Il4i1	Q96RQ9	Il4ra	P24394
Inpp5d	Q92835	Ip6k3	Q96PC2	Iqgap3	Q86VI3
Irag2	Q12912	Irak3	Q9Y616	Irak4	Q9NWZ3
Irf1	P10914	Irf5	Q13568	Irf7	Q92985
Irf8	Q02556	Irf9	Q00978	Isg15	P05161
Isg20	Q96AZ6	Itga6	A0A3Q1M8K4	Itgal	P20701
Itgam	P11215	Itgax	P20702	Itgb2	P05107
Itgb3	P05106	Itgb5	P18084	Itgb7	P26010
Itih3	Q06033	Jak3	P52333	Jam3	Q9BX67
Kcnj2	P63252	Kcnk7	F1NP03	Kcnn4	Q8WMG4
Kif18a	Q8NI77	Klc3	Q6P597	Klrc1	Q9Z202
Klrd1	Q13241	Klrk1	P26718	Lag3	P18627
Lair1	Q6GTX8	Lamp2	P13473	Lap3	Q01532
Lat	O43561	Lat2	Q9UHI5	Lck	P06239

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Lcn2	P80188	Lcp1	P13796	Lcp2	Q13094
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Lgals3bp	Q08380	Lgals9	O00182	Lgi4	F6U6G9
Lgmn	Q99538	Lilrb4a	Q64281	Lilrb4b	Q61450
Lipa	P38571	Liph	Q8WWY8	Lox	P28300
Lpar5	F7AE20	Lpcat2	Q7L5N7	Lpin3	Q9BQK8
Lpl	P06858	Lrig1	Q96JA1	Lst1	Q9Y6L6
Ltb	Q06643	Ltbr	P36941	Ly6e	A0A1D5P7D9
Ly6g6d	Q5SQ64	Ly86	O95711	Ly96	Q9Y6Y9
Lyl1	P12980	Lyn	P07948	Lyz2	P08905
Mafb	Q9Y5Q3	Maff	Q9ULX9	Man2b1	O00754
Man2b2	Q9Y2E5	Map3k8	K7GKL4	Mapkapk3	Q16644
Mboat1	Q6ZNC8	Mcm3	P25205	Mcoln3	Q8TDD5
Mdk	P21741	Mfng	O00587	Mgmt	P16455
Mgst1	P10620	Micu2	Q8IYU8	Mlxipl	Q8VIP2
Mmp12	P39900	Mmp19	Q99542	Mob1a	Q9H8S9
Mobp	Q13875	Mocos	Q96EN8	Mrc2	A1A5G9
Msmo1	Q15800	Msn	P26038	Msr1	P21757
Mt1	P02802	Mt2	P02798	Mthfd2	P13995
Mthfs	P49914	Muc1	P15941	Mvd	P53602
Mvk	Q03426	Mvp	Q14764	Mx1	P20591
Mx2	P20592	Myc	P01106	Myd88	Q99836
Myl12a	P19105	Naalad2	Q9Y3Q0	Naglu	P54802
Naprt	Q6XQN6	Nat2	Q9H2H9	Ncf1	P14598
Ncf2	P19878	Ncf4	Q15080	Nckap11	P55160
Necap2	Q9NVZ3	Neurl3	A8MQ27	Nfam1	Q8NET5
Nfatc1	O95644	Nfe2l2	Q16236	Nfkbp1	P19838
Nfkbp2	Q00653	Nfkbie	A0A803JZI4	Nlrc5	Q86WI3
Nmi	Q13287	Nmu	P48645	Npc2	P61916
Npl	Q9BXD5	Nr1h3	Q13133	Nsdhl	Q15738
Oas2	P29728	Oas3	Q9Y6K5	Oasl1	Q8VI94
Ormdl2	Q53FV1	Osm	P13725	Osmr	Q99650
Ostf1	Q92882	P2rx4	Q99571	P2rx7	Q99572
P2ry12	Q9H244	P2ry13	Q9BPV8	P2ry2	P41231
P2ry6	Q15077	P4ha3	Q7Z4N8	Padi2	Q9Y2J8
Paox	Q6QHF9	Parp10	Q53GL7	Parp14	Q460N5
Parp9	Q8IXQ6	Pctp	Q9UKL6	Pdcld1	Q02242
Pdppn	Q86YL7	Pecr	Q9BY49	Pfkfb3	A7UAK5
Pik3ap1	A0A3Q1M535	Pik3cg	P48736	Pik3r5	Q8WYR1
Pilra	A0A5G2R2W0	Pla2g15	Q8NCC3	Pla2g4a	P47712
Plaat3	P53816	Plau	P00749	Plaur	Q03405
Plce1	Q9P212	Plcg2	P16885	Pld4	Q96BZ4
Plek	P08567	Plin2	Q99541	Plpp2	O43688
Pm20d1	Q6GTS8	Pmp22	Q9NR77	Pnp	P00491
Pon3	Q15166	Pou2f2	P09086	Ppfia4	F1S7U4
Ppp1r14a	Q91VC7	Prcp	P42785	Prdx6	P30041
Procr	Q9UNN8	Pros1	P07225	Psma8	Q8TAA3
Psmb8	P28062	Psmb9	P28065	Psme1	Q06323
Psme2	Q9UL46	PstPIP1	O43586	Ptafr	P25105

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Ptpn18	Q99952	Ptpn22	Q9Y2R2	Ptpn6	P29350
Ptprc	P08575	Pycard	Q9ULZ3	Pygl	P06737
Qprt	Q15274	Rab13	P51153	Rab19	A4D1S5
Rab29	O14966	Rab32	Q13637	Rab39	Q14964, Q9BZG1
Rab3il1	A0A6I8QMY7	Rab7b	Q96AH8	Rac2	P15153
Ralb	P11234	Rasa4	O43374	Rasal3	Q86YV0
Rasgrp3	Q8IV61	Rassf4	Q8WYP3	Rax	O75569
Rbl1	P28749	Renbp	P51606	Rgs1	Q09777
Rgs10	O43665	Rhoc	P08134	Rhoh	Q15669
Rhoj	Q9H4E5	Rida	P52760	Rin2	Q8WYP3
Rin3	A0A6I8QJ78	Rinl	Q6ZS11	Ripk2	O43353
Ripk3	Q9Y572	Rln1	P01347	Rnase4	A0A3Q1MIF5
Rnase6	Q93091	Rnaset2a	C0HKG5	Rnaset2b	C0HKG6
Rnf13	Q66JJ1	Rnf213	Q63HN8	Rnls	Q5VYX0
Rpl10	P27635	Rpl18a	Q02543	Rps4x	P62701
Rps6ka1	Q63531	Rrad	P55042	Rrbp1	Q9P2E9
Rsad2	Q8WXG1	Rsu1	Q15404	Runx1	Q01196
S100a1	P23297	S100b	P04271	S1pr5	B1WAQ2
Samhd1	Q9Y3Z3	Sat1	P21673	Scarb2	Q14108
Sctr	P47872	Sdc4	E1BKS1	Sdsl	Q8R238
Selp1g	F1MS77	Serp1	Q9Z1W5	Serpina3i	D3Z450
Serpind1	P05546	Serpinf2	P08697	Serping1	P05155
Sgp11	O95470	Siglech	B7ZMQ6	Sipa1	Q96FS4
Skap2	O75563	Sla	Q13239	Slamf6	F1RJY4
Slamf7	A0A5G2QPL8	Slc11a1	F1MJ63	Slc13a3	Q8WWT9
Slc14a1	Q13336	Slc15a3	Q8IY34	Slc16a3	O15427
Slc1a5	Q15758	Slc22a18	Q96BI1	Slc22a4	Q9H015
Slc2a4	P14672	Slc2a5	P22732	Slc35d2	Q76EJ3
Slc37a2	Q8TED4-2	Slc39a1	P59889	Slc44a3	Q8N4M1
Slc7a7	Q9UM01	Slco2b1	O94956-3	Snap23	O09044
Snx5	Q9Y5X3	Soat1	P35610	Socs1	O15524
Socs3	O14543	Sord	Q00796	Sox9	P48436
Sp100	P23497	Sp110	A0A803K185	Sparc	P09486
Spc25	Q15005	Spi1	P17947	Sprint1	O43278
Spp1	P10451	Spsb2	O88838	Sptlc2	O15270
Sqle	Q14534	Srebf1	P36956-3	Srgn	P10124
Ssc5d	A1L4H1	St14	Q9Y5Y6	St3gal6	Q9Y274
St6gal1	P15907	St8sia2	Q92186	St8sia6	P61647
Stard4	Q96DR4	Stard6	P59095	Stat1	P42224
Stat3	P40763	Sting1	Q86WV6	Stk10	O94804
Stom	P27105	Suclg2	Q96I99	Sumf2	Q8NBJ7
Syk	P43405	Syngr2	F7EJK9	Taf13	Q15543
Tagap	Q8N103	Tagln2	P37802	Taldo1	P37837
Tap1	P21958	Tap2	Q03519	Tapbp	Q9R233
Tax1bp3	O14907	Tbxas1	P24557	Tcirg1	Q13488
Tcn2	P20062	Tdgf1	P13385	Tec	P42680
Tep1	P60484	Tes	A1ZAT5	Tfpi	P10646
Tgfbr1	P36897	Tgfbr2	P37173	Tgif1	Q15583

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Thbs2	P35442	Thbs3	P49746	Thy1	P04216
Ticam2	Q86XR7	Tifa	Q96CG3	Tk1	P04183
Tlr1	Q15399	Tlr2	O60603	Tlr4	O00206
Tlr6	Q9Y2C9	Tlr7	Q9NYK1	Tmc6	Q7Z403
Tmed10	P49755	Tmed3	Q9Y3Q3	Tmed5	Q9Y3A6
Tmem179b	Q7Z7N9	Tmem219	Q9D123	Tmem86a	A0A6I8RFL3
Tnfaip8l2	Q6P589	Tnfrsf11a	Q9Y6Q6	Tnfrsf13b	O14836
Tnfrsf14	Q92956	Tnfrsf17	Q02223	Tnfrsf1a	P19438
Tnfrsf1b	P20333	Tnfsf13b	Q9Y275	Tnfsf8	P32971
Tnfsf9	P41273	Tnni1	P19237	Tnni2	P48788
Tor3a	F7CWT1	Tor4a	Q9NXH8	Tpcn2	Q8NHX9
Tpk1	Q9H3S4	Tpm4	P67936	Traf1	F1NLM1
Trbc1	A0A075B5J3	Trem2	Q9NZC2	Treml2	I3LTE9
Trex1	Q9NSU2	Trf	P54274	Trib3	Q96RU7
Trim14	Q14142	Trim25	Q14258	Trim56	Q9BRZ2
Trmtl12	Q9DCG9	Trpm1	Q7Z4N2	Trpm5	Q9NZQ8
Tspo	P30536	Tubb6	Q9BUF5	Txnip	Q9H3M7
Tyrobp	O43914	Uba7	P41226	Ube2l6	O14933
Ucp2	A0A2C9F3B4, O97562	Unc13d	Q70J99	Unc93b1	Q9H1C4
Usp18	Q9UMW8	Vamp8	O70404	Vav1	P15498
Vkorc1	Q9BQB6	Was	P42768	Wwtr1	Q4V7E6
Xaf1	Q6GPH4	Xcl1	P47992	Xdh	P47989
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Input	Ensembl Id	Input	Ensembl Id	Input	Ensembl Id
Alox5	ENSG0000012779	Anxa2	ENSG0000182718	Apoc2	ENSG0000234906
Apoc4	ENSG0000267467	Apoe	ENSG0000130203	Atf3	ENSG0000162772
B2m	ENSG0000166710	Batf	ENSG0000156127	Bst2	ENSG0000130303
C1qc	ENSGALP0000007599	Casp1	ENSG0000137752	Ccl2	ENSG0000108691
Ccl3	ENSG0000277632	Ccl4	ENSG0000275302	Ccna2	ENSG0000145386
Ccnb2	ENSG0000157456	Ccr5	ENSG0000160791	Cd274	ENSG0000120217
Cd86	ENSG0000114013	Cdk1	ENSG0000170312	Cklf	ENSG0000102554
Cryba4	ENSG0000196431	Csf1	ENSG0000184371	Csf1r	ENSG0000182578
Csf3r	ENSG0000119535	Ctsd	ENSG0000117984	Cxcl10	ENSG0000169245
Ebi3	ENSG0000105246	F3	ENSG0000117525	Fadd	ENSGALP0000012326
Fas	ENSG0000169710	Fcgr1	ENSG0000150337	Fdft1	ENSG0000079459
Fdps	ENSG0000160752	Fgf2	ENSG0000138685	Fth1	ENST0000273550
Gbp2	ENSG0000162645	Gbp3	ENSG0000117226	Gbp4	ENSG0000162654
Gbp5	ENSG0000154451	Gbp6	ENSG0000183347	Gbp7	ENSG0000213512
Gfap	ENSG0000131095	Glipr1	ENSG0000139278	Gpam	ENSG0000119927
Gsdmd	ENSG0000104518	Hhex	ENSG0000152804	Hif1a	ENSG0000100644
Hmox1	ENSG0000100292	Icam1	ENSG0000090339	Id3	ENSG0000117318
Ifi27	ENSG0000165949	Ifi30	ENSG0000216490	Ifi35	ENSG0000068079
Ifit1	ENSG0000185745	Ifit2	ENSG0000119922	Ifit3	ENSG0000119917
Ifitm2	ENSG0000185201	Ifitm3	ENSG0000142089	Ikbke	ENSGALP0000021757
Il1a	ENSG0000115008	Il1b	ENSG0000125538, ENST0000263341	Il1rn	ENSG0000136689
Il2rg	ENSG0000147168	Il4ra	ENSG0000077238	Irf1	ENSG0000125347
Irf5	ENSG0000128604	Irf7	ENSG0000185507	Irf8	ENSG0000140968

Input	Ensembl Id	Input	Ensembl Id	Input	Ensembl Id
Irf9	ENSG00000213928	Isg15	ENSG00000187608	Isg20	ENSG00000172183
Itgal	ENSG0000005844	Itgam	ENSG00000169896	Itgax	ENSG00000140678
Itgb2	ENSG00000160255	Lcn2	ENSG00000148346	Lcp1	ENSG00000136167
Lgals3	ENSG00000131981	Lpl	ENSG00000175445	Mapkapk3	ENSGALP00000003578
Mobp	ENSG00000168314	Msn	ENSG00000147065	Mt2	ENSG00000125148
Muc1	ENSG00000185499	Mvd	ENSG00000167508	Mvk	ENSG00000110921
Mx1	ENSG00000157601	Mx2	ENSG00000183486	Myc	ENSG00000136997
Nfe2l2	ENSG00000116044	Nr1h3	ENSG00000025434, ENST00000441012	Oas2	ENSG00000111335
Oas3	ENSG00000111331	Osm	ENSG00000099985	Plin2	ENSG00000147872
Pmp22	ENSG00000109099	Psmb8	ENSG00000204264	Psme2	ENSG00000100911
Ptafr	ENSG00000169403	Ptpn18	ENSG00000072135	Ptpn6	ENSG00000111679
Rbl1	ENSG00000080839	Rln1	ENSG00000107018	Rrad	ENSG00000166592
Rsad2	ENSG00000134321	Runx1	ENSG00000159216, ENST00000344691	S100b	ENSG00000160307
Samhd1	ENSG00000101347	Serp1	ENSG00000120742	Slc2a4	ENSG00000181856
Socs1	ENSG00000185338	Socs3	ENSG00000184557	Sox9	ENSG00000125398
Sp100	ENSG00000067066	Sparc	ENSG00000113140	Spi1	ENSG00000066336
Spp1	ENSG00000118785	Sqle	ENSG00000104549	Srebf1	ENSG00000072310
Stat1	ENSG00000115415	Stat3	ENSG00000168610	Taldo1	ENSG00000177156
Tdgf1	ENSG00000241186	Tec	ENSG00000119508	Tep1	ENSG00000171862
Tk1	ENSG00000167900	Tnfrsf1a	ENSG00000067182	Tnfrsf1b	ENSG00000028137
Trib3	ENSG00000101255	Trim14	ENSG00000106785	Trim25	ENSG00000121060
Xaf1	ENSG00000132530				

7. Identifiers not found

These 470 identifiers were not found neither mapped to any entity in Reactome.

0610040J01Rik	1010001B22Rik	1110038B12Rik	1600010M07Rik	1700003F12Rik	1810024B03Rik	1810044D09Rik	1810058I24Rik
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4930455G09Rik	4930550C14Rik	4930599N23Rik	4931406C07Rik	4933424M12Rik	7630403G23Rik	9330175E14Rik	9930111J21Rik1
9930111J21Rik2	A430018G15Rik	A430093F15Rik	A530040E14Rik	A530088E08Rik	A630001G21Rik	A930012O16Rik	AA467197
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Abhd15	Abi3	Adam3	Adap2	Adap2os	Aebp1	Aif1	Akip1
Akna	Anxa3	Anxa4	Apobec3	Arl11	Arrdc4	Asap3	Ascl2
B230311B06Rik	B430306N03Rik	BC023105	BC028528	BC035044	BC043934	BC147527	Batf2
Bcas1	Bcl2ala	Bcl2a1b	Bcl2a1d	Bcl2l12	Bcl3	Bfsp2	Bik
Bmp2k	C130026I21Rik	C130050O18Rik	C1qtnf5	C530044C16Rik	Calhm6	Car5b	Card19
Casp12	Ccdc122	Ccdc190	Cchcr1	Cd200r4	Cd244a	Cd37	Cd5
Cd63-ps	Cd69	Cd83	Cdca3	Cela1	Cep85	Chaf1b	Chil1
Cib1	Ckap2	Clec1a	Clec4a3	Clic1	Cln5	Cmtm3	Cnn3
Cpq	Cracr2b	Crip1	Crygs	Cryzl2	Csf2rb2	Cst7	Ctbs
Ctla2b	Cyp4f18	Cyp4v3	Cytip	D5Ert6d605e	D730003I15Rik	D830050J10Rik	Ddx31
Ddx60	Dynlt1f	E130114P18Rik	E230016M11Rik	E230029C05Rik	E230032D23Rik	Ehd4	Elf4
Elk3	Evalb	Evi2a	Evi2b	Exoc3l4	Fam111a	Fam167a	Fam167b
Fam189a2	Fcrl1	Fcrls	Fkbp7	Fmo5	Frmd8	Frrs1	Ftl1
Ftl1-ps1	Fxyd5	G430095P16Rik	G530011O06Rik	Gal3st4	Gbgt1	Gbp10	Gbp8
Gbp9	Ggact	Ggtal1	Gimap3	Gimap4	Gimap7	Glipr2	Glmp
Glrp1	Gm10443	Gm10790	Gm10863	Gm11274	Gm11423	Gm11545	Gm12250
Gm13166	Gm13293	Gm13391	Gm13597	Gm13822	Gm15503	Gm15537	Gm15539
Gm15753	Gm16118	Gm16174	Gm16740	Gm17147	Gm17473	Gm19680	Gm20429
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Gm26902	Gm27168	Gm28417	Gm29291	Gm29508	Gm31597	Gm32591	Gm33858
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Gm41349	Gm42693	Gm43302	Gm43351	Gm44511	Gm45418	Gm45700	Gm4739
Gm47428	Gm47754	Gm48678	Gm4876	Gm49130	Gm49339	Gm49368	Gm49391
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Gm7609	Gm7932	Gm8093	Gm9888	Gm9895	Gm9999	Gpr137b	Gpr137b-ps
Gpr160	Gpr34	Grifin	Gsap	Gsg1	Gvin-ps7	Gvin1	Gvin2
Gzma	H2-DMb2	H4c17	Haplн2	Hcls1	Hk1os	Hlx	Htra3
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Ifi47	Ifit3b	Igsf10	Igsf6	Igtp	Iigp1	Irgm1	Irgm2
Itpripl2	Jpt2	Klhl6	Klk9	Klrb1b	Knstrn	Lacc1	Lactb2
Laptm4a	Laptm5	Lbx2	Lgals2	Lgals8	Litaf	Lpxn	Lrmda
Lrrc25	Lrrk1	Lsp1	Ly9	Lyzl4	Mamdc2	Mexis	Mif4gd
Milr1	Mir142hg	Mir155hg	Mlph	Morrbid	Mpeg1	Mr1	Mroh5
Ms4a6b	Ms4a6c	Ms4a6d	Ms4a7	Mtmr11	Myole	Myolf	Myo1g
Naga	Naip2	Naip5	Neat1	Nfe2l3	Niban1	Niban2	Nkg7
Nol3	Nradd	Nrros	Nsa2	Ntpcr	Nuak2	Oas1a	Oas1b
Oas1g	Oasl2	Olfml3	Olfr110	Olfr111	Osgin1	Parp12	Parp3
Parvg	Pbk	Pbxip1	Pdlim2	Pdlim4	Phf11a	Phf11b	Phf11d
Phyhd1	Piezo2	Pimreg	Pirb	Plekhd1	Plgrkt	Plscr1	Plscr2
Plxdc2	Plxna4os1	Ppp1r18	Pqlc3	Prelid2	Prickle3	Prss50	Psd4
Psme2b	Ptprcap	Pvrig	Pyroxd2	Rapgef3os2	Rasl2-9	Rcbtb2	Rcsd1

Rom1	Ropn1l	Rtp4	Rubcnl	S100a13	S100a16	Samd9l	Samsn1
Sapcd1	Sash3	Sbno2	Scamp2	Scimp	Scpep1	Scrg1	Sdf2l1
Sfrp5	Sgce	Sh2d6	Sh3bp2	Sh3glb1	Sh3tc1	Siglec1	Slamf8
Slamf9	Slc10a3	Slc25a43	Slc25a45	Slc43a3	Slfn2	Slfn5	Slfn8
Slfn9	Smagp	Smoc1	Smpd5	Snx20	Sp140	Spacdr	Spata24
Spata3	Spns3	Sugct	Susd3	Szrd1	Tasl	Tbc1d2b	Tcim
Tent5c	Tespa1	Tex11	Tfcpl1	Tfeb	Tgtp2	Themis2	Tifab
Tigit	Tlr12	Tlr13	Tmco4	Tmem100	Tmem106a	Tmem119	Tmem123
Tmem140	Tmem154	Tmem176a	Tmem176b	Tmem198b	Tmem221	Tmem273	Tmem35b
Tmem37	Tmem88b	Tnfaip2	Tnfrsf23	Traf3ip3	Trav11d	Trgv2	Trim12a
Trim30a	Trim30d	Trim34a	Trim47	Tspan32	Tspan4	Ttc12	Ttf2
Txlnb	Uap111	Ugt1a6a	Ugt1a7c	Upk3bl	Vamp5	Vsir	Vstm4
Vwa5a	Wfdc17	Xlr	Yipf7	Zbtb42	Zmynd15		