

Supplementary File 2. Biological processes and cellular pathways associated with genes differentially expressed in cortical tissues of MDD and suicide victims (category-wise analysis)

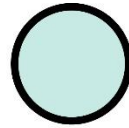
Description

The following images represent the enrichment of gene ontology/GO terms associated with the genes differentially expressed in MDD and suicide. The analysis was performed using two computational tools, FunSet (<http://funset.uno/>) and g:GOST (<https://biit.cs.ut.ee/gprofiler/gost>). The following pages provide the results of these analyses. Where available, the results from both the tools are given.

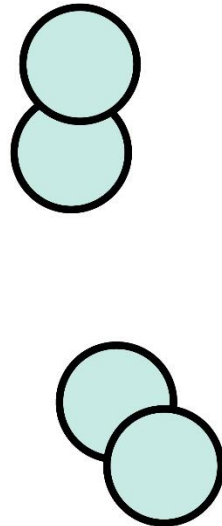
FunSet performs a hypergeometric test to identify statistically enriched terms, and clusters semantically similar GO terms. The enriched terms are displayed as coloured circles with the size proportional to the enrichment factor (ratio between the observed and the expected number of genes annotated with the given term).

g:GOST performs statistical enrichment analysis to find over-representation of GO terms using Fisher's one-tailed test, and represents the overrepresentation results as a Manhattan-like-plot. The circles representing similar GO terms are placed closer to each other.

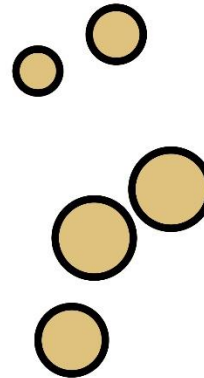
Downregulated in suicide and MDD



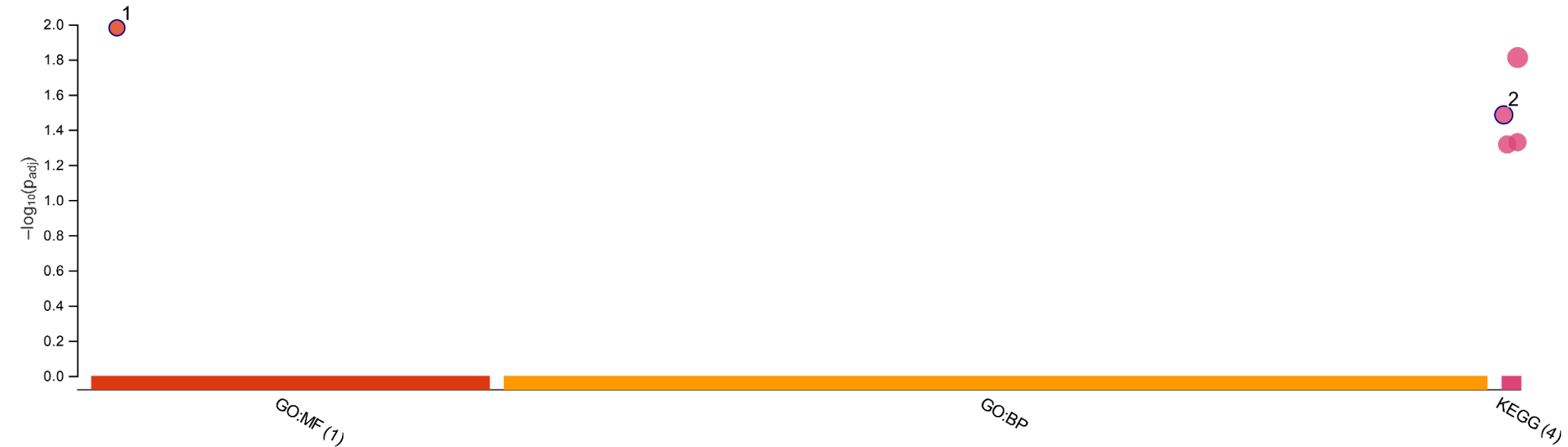
#1 - GO:1902366 (regulation of Notch signaling pathway...)



#0 - GO:1901687 (glutathione derivative biosynthetic...)

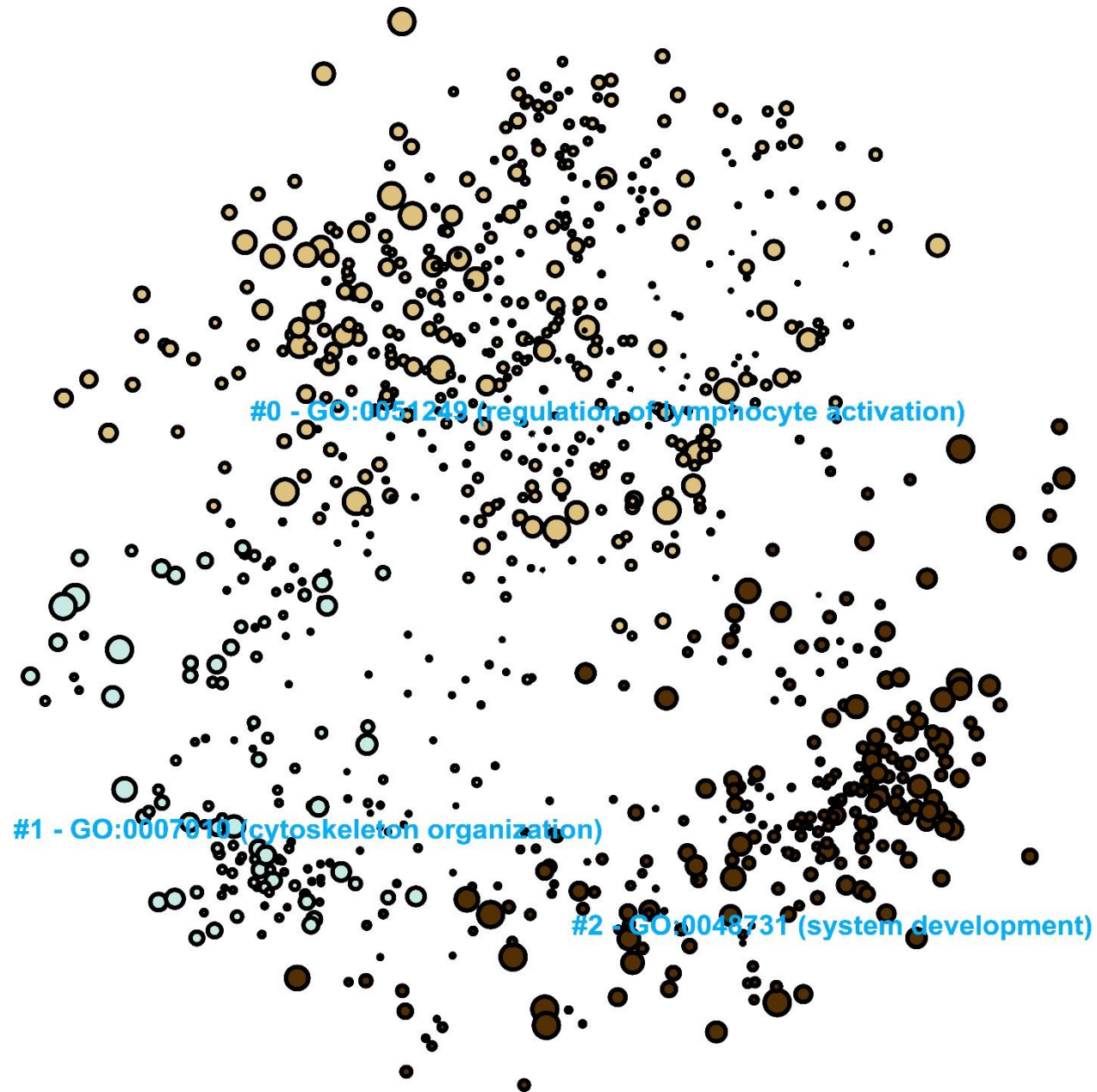


Downregulated in suicide and MDD

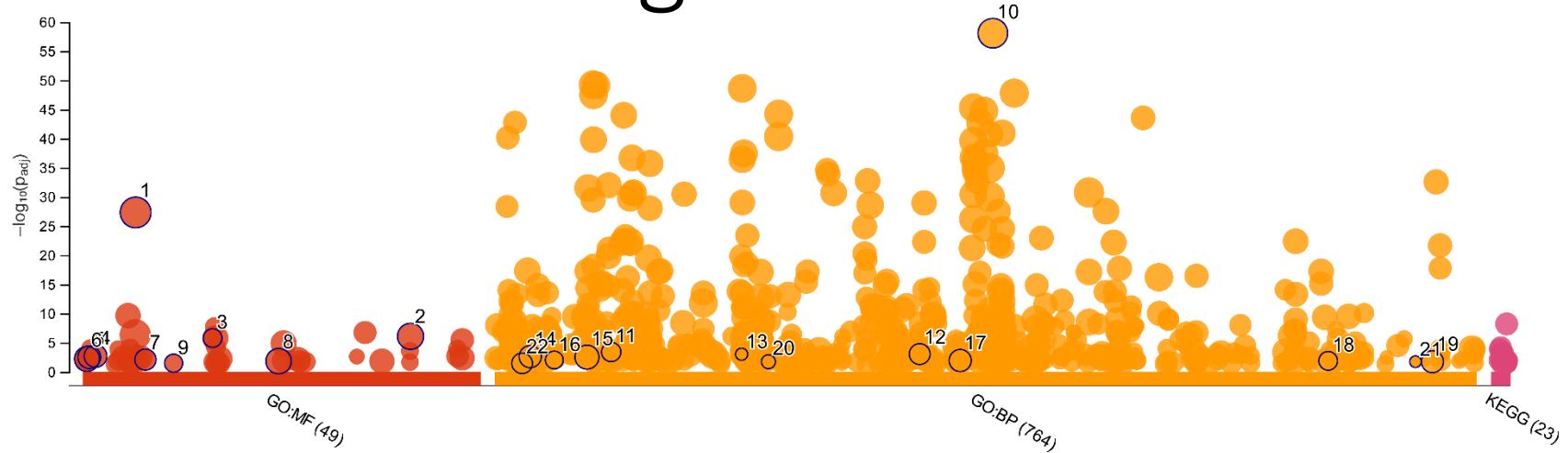


ID	Source	Term ID	Term Name	p_{adj} (query_1)
1	GO:MF	GO:0004364	glutathione transferase activity	1.048×10^{-2}
2	KEGG	KEGG:00480	Glutathione metabolism	3.277×10^{-2}

Downregulated in suicide



Downregulated in suicide



ID	Source	Term ID	Term Name	p_{adj} (query_1)
1	GO:MF	GO:0005515	protein binding	4.698×10^{-28}
2	GO:MF	GO:0098772	molecular function regulator activity	7.998×10^{-7}
3	GO:MF	GO:0019199	transmembrane receptor protein kinase activity	1.662×10^{-6}
4	GO:MF	GO:0003779	actin binding	1.974×10^{-3}
5	GO:MF	GO:0001228	DNA-binding transcription activator activity, RNA polymerase II-specific	3.101×10^{-3}
6	GO:MF	GO:0000987	cis-regulatory region sequence-specific DNA binding	6.266×10^{-3}
7	GO:MF	GO:0008514	organic anion transmembrane transporter activity	8.061×10^{-3}
8	GO:MF	GO:0038023	signaling receptor activity	1.504×10^{-2}
9	GO:MF	GO:0015453	oxidoreduction-driven active transmembrane transporter activity	3.338×10^{-2}
10	GO:BP	GO:0050896	response to stimulus	8.439×10^{-59}
11	GO:BP	GO:0008630	intrinsic apoptotic signaling pathway in response to DNA damage	4.022×10^{-4}
12	GO:BP	GO:0045216	cell-cell junction organization	9.102×10^{-4}
13	GO:BP	GO:0022614	membrane to membrane docking	9.696×10^{-4}
14	GO:BP	GO:0002460	adaptive immune response based on somatic recombination of immune receptors built from immunoglobulin superfamily domains	2.524×10^{-3}
15	GO:BP	GO:0006897	endocytosis	3.043×10^{-3}
16	GO:BP	GO:0003229	ventricular cardiac muscle tissue development	9.496×10^{-3}
17	GO:BP	GO:0046942	carboxylic acid transport	1.154×10^{-2}
18	GO:BP	GO:1902807	negative regulation of cell cycle G1/S phase transition	1.324×10^{-2}
19	GO:BP	GO:1990778	protein localization to cell periphery	1.842×10^{-2}
20	GO:BP	GO:0032060	bleb assembly	1.858×10^{-2}
21	GO:BP	GO:1905686	positive regulation of plasma membrane repair	1.860×10^{-2}
22	GO:BP	GO:0002221	pattern recognition receptor signaling pathway	3.527×10^{-2}

Upregulated in MDD

- #0 - GO:0050794 (regulation of cellular process)

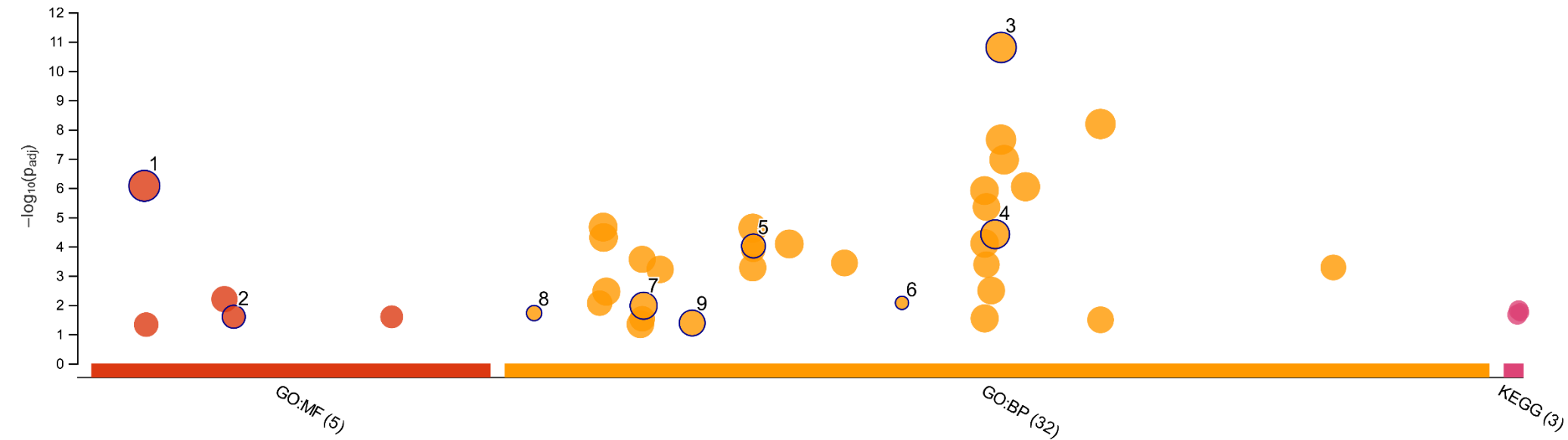
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- #2 - GO:0065007 (biological regulation)

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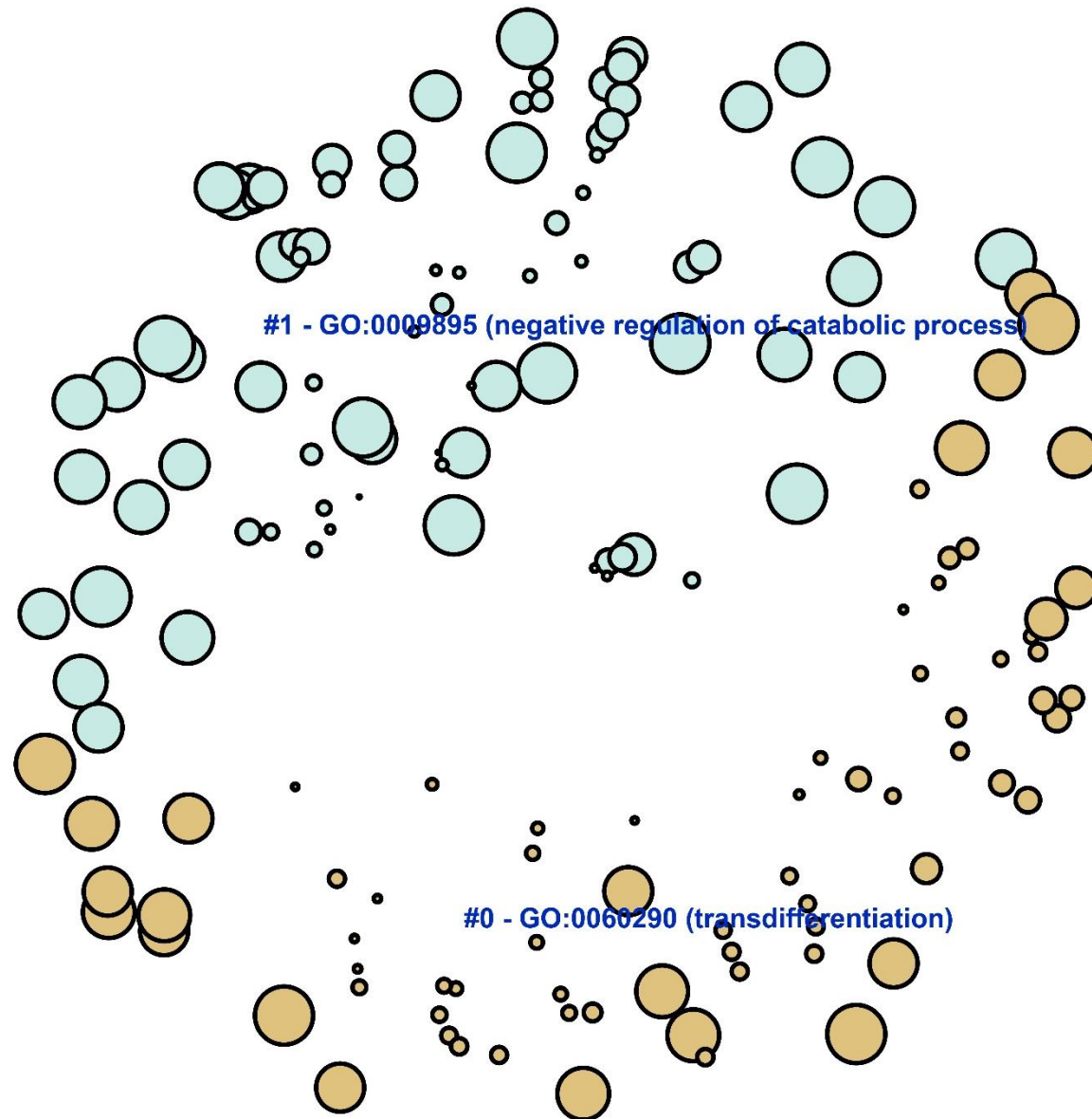
- #1 - GO:0030029 (actin filament-based process)

Upregulated in MDD

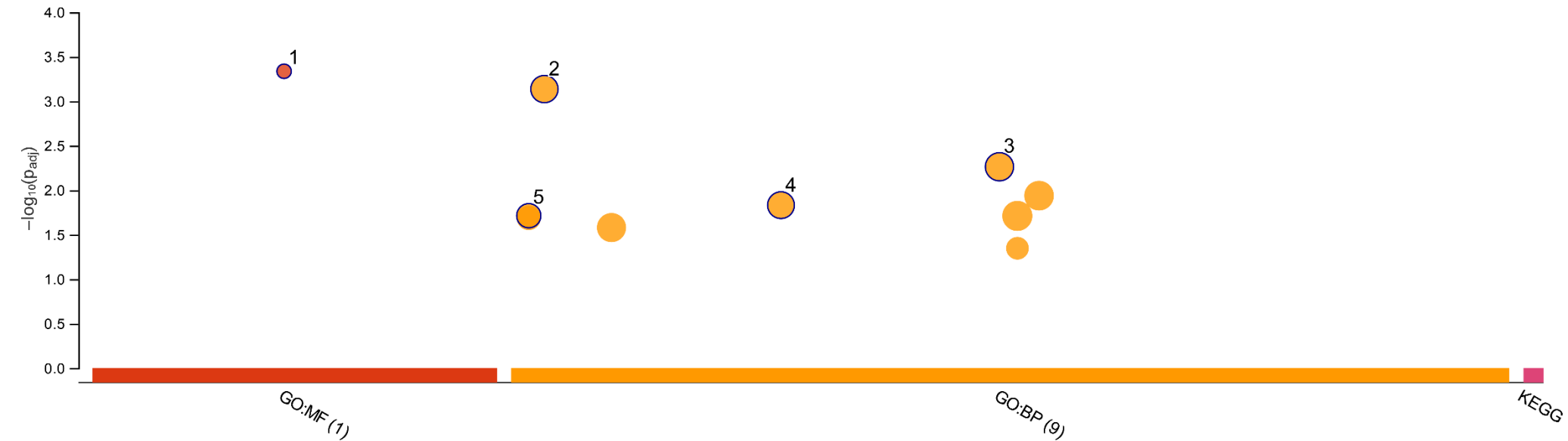


ID	Source	Term ID	Term Name	$p_{adj} (query_1)$
1	GO:MF	GO:0005515	protein binding	8.532×10^{-7}
2	GO:MF	GO:0030695	GTPase regulator activity	2.554×10^{-2}
3	GO:BP	GO:0050794	regulation of cellular process	1.588×10^{-11}
4	GO:BP	GO:0048856	anatomical structure development	3.863×10^{-5}
5	GO:BP	GO:0030036	actin cytoskeleton organization	9.723×10^{-5}
6	GO:BP	GO:0043313	regulation of neutrophil degranulation	8.563×10^{-3}
7	GO:BP	GO:0010033	response to organic substance	1.070×10^{-2}
8	GO:BP	GO:0002283	neutrophil activation involved in immune response	1.912×10^{-2}
9	GO:BP	GO:0016192	vesicle-mediated transport	4.163×10^{-2}

Upregulated in MDD and downregulated in suicide

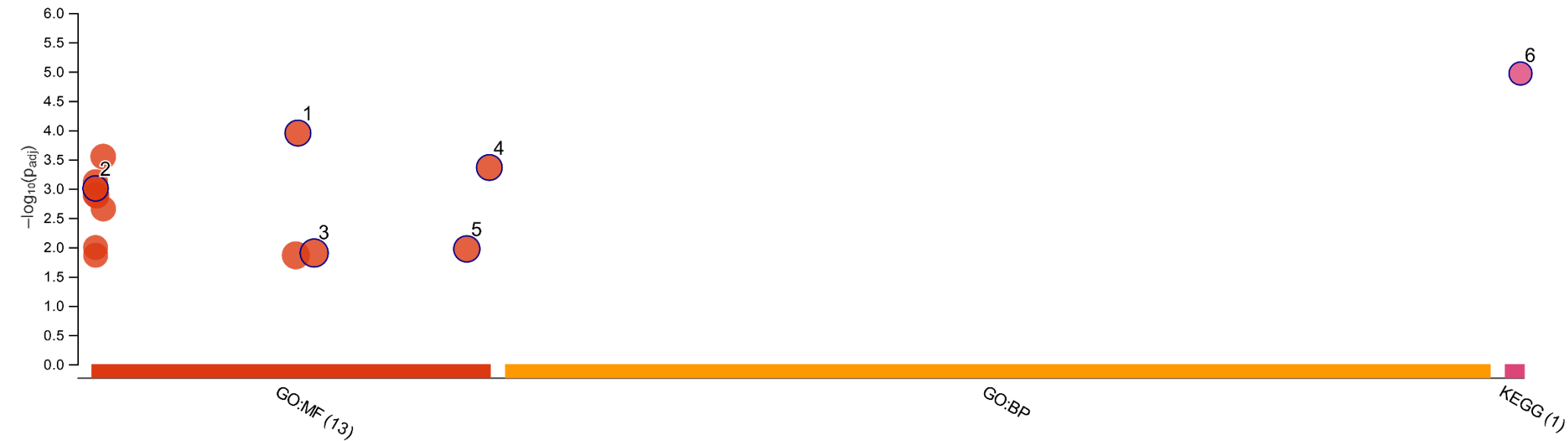


Upregulated in MDD and downregulated in suicide



ID	Source	Term ID	Term Name	$p_{adj} (query_1)$
1	GO:MF	GO:0035325	Toll-like receptor binding	4.601×10^{-4}
2	GO:BP	GO:0002376	immune system process	7.296×10^{-4}
3	GO:BP	GO:0048583	regulation of response to stimulus	5.449×10^{-3}
4	GO:BP	GO:0031324	negative regulation of cellular metabolic process	1.472×10^{-2}
5	GO:BP	GO:0001817	regulation of cytokine production	1.934×10^{-2}

Downregulated in MDD



ID	Source	Term ID	Term Name	p_{adj} (query_1)
1	GO:MF	GO:0043565	sequence-specific DNA binding	1.126×10^{-4}
2	GO:MF	GO:0000981	DNA-binding transcription factor activity, RNA pol...	9.921×10^{-4}
3	GO:MF	GO:0046872	metal ion binding	1.259×10^{-2}
4	GO:MF	GO:1990837	sequence-specific double-stranded DNA binding	4.363×10^{-4}
5	GO:MF	GO:0140110	transcription regulator activity	1.073×10^{-2}
6	KEGG	KEGG:05168	Herpes simplex virus 1 infection	1.083×10^{-5}

Upregulated in suicide

