### Top 10 GO Biological Process Gene Sets Ranked by Potency of Perturbation (Sorted by BMD Median)

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Category Name** | Input Genes/Platform Genes in Gene Set | % Gene Set Coverage | Active Genes | BMD1std Median of Gene Set Transcripts (mg/kg) | Median BMDL1Std-BMDU1Std (mg/kg) | Genes with Changed Direction Up | Genes with Changed Direction Down |
| **GO:0071549**cellular response to dexamethasone stimulus | 4/67 | 6% | Igfals; Errfi1; Hnrnpu; Ddit4 | 58.5 | 34.0-168.5 | 1 | 3 |
| **GO:0071385**cellular response to glucocorticoid stimulus | 6/107 | 6% | Igfals; Errfi1; Hnrnpu; Lmnb1; Orm1; Ddit4 | 58.5 | 34.0-168.5 | 3 | 3 |
| **GO:0035176**social behavior | 3/50 | 6% | Mss51; Avpr1a; Anxa7 | 63.3 | 45.9-305.5 | 1 | 2 |
| **GO:0051705**multi-organism behavior | 5/72 | 7% | Mss51; LOC100910823; App; Avpr1a; Anxa7 | 63.3 | 45.9-305.5 | 3 | 2 |
| **GO:0071548**response to dexamethasone | 5/97 | 5% | Igfals; Cldn1; Errfi1; Hnrnpu; Ddit4 | 70.6 | 50.3-185.5 | 1 | 4 |
| **GO:2000272**negative regulation of receptor activity | 3/25 | 12% | Pcsk9; Errfi1; App | 70.6 | 50.3-116.6 | 1 | 2 |
| **GO:0042058**regulation of epidermal growth factor receptor signaling pathway | 5/61 | 8% | Rhbdf2; Errfi1; App; Dab2ip; Ceacam1 | 71.6 | 51.1-116.6 | 2 | 3 |
| **GO:0032651**regulation of interleukin-1 beta production | 4/46 | 9% | Casp4; Tnfaip3; Errfi1; Orm1 | 82.2 | 57.2-145.1 | 3 | 1 |
| **GO:0042632**cholesterol homeostasis | 4/57 | 7% | Pcsk9; Abcg5; Abcg8; Cyp7a1 | 85.3 | 59.2-147.8 | 1 | 3 |
| **GO:0032375**negative regulation of cholesterol transport | 3/12 | 25% | Pcsk9; Abcg5; Abcg8 | 92.5 | 63.3-165.3 | 0 | 3 |

Official gene symbols from the Rat Genome Database are shown in the “Active Genes” column. Definitions of Gene Ontology terms were provided by the Gene Ontology Resource (http://geneontology.org/).

**GO process description version:** https://cebs.niehs.nih.gov/cebs/study/002-00600-0002-000-0 V04132020

**GO:0071549 cellular response to dexamethasone stimulus:** Any process that results in a change in state or activity of a cell (in terms of movement, secretion, enzyme production, gene expression, etc.) as a result of a dexamethasone stimulus.

**GO:0071385 cellular response to glucocorticoid stimulus:** Any process that results in a change in state or activity of a cell (in terms of movement, secretion, enzyme production, gene expression, etc.) as a result of a glucocorticoid stimulus. Glucocorticoids are hormonal C21 corticosteroids synthesized from cholesterol with the ability to bind with the cortisol receptor and trigger similar effects. Glucocorticoids act primarily on carbohydrate and protein metabolism, and have anti-inflammatory effects.

**GO:0035176 social behavior:** Behavior directed towards society, or taking place between members of the same species. Occurs predominantly, or only, in individuals that are part of a group.

**GO:0051705 multi-organism behavior:** Any process in which an organism has a behavioral effect on another organism of the same or different species.

**GO:0071548 response to dexamethasone:** Any process that results in a change in state or activity of a cell or an organism (in terms of movement, secretion, enzyme production, gene expression, etc.) as a result of a dexamethasone stimulus.

**GO:2000272 negative regulation of signaling receptor activity:** Any process that stops, prevents or reduces the frequency, rate or extent of a signaling receptor activity.

**GO:0042058 regulation of epidermal growth factor receptor signaling pathway:** Any process that modulates the frequency, rate or extent of epidermal growth factor receptor signaling pathway activity.

**GO:0032651 regulation of interleukin-1 beta production:** Any process that modulates the frequency, rate, or extent of interleukin-1 beta production.

**GO:0042632 cholesterol homeostasis:** Any process involved in the maintenance of an internal steady state of cholesterol within an organism or cell.

**GO:0032375 negative regulation of cholesterol transport:** Any process that stops, prevents, or reduces the frequency, rate or extent of the directed movement of cholesterol into, out of or within a cell, or between cells, by means of some agent such as a transporter or pore.