

The diagram illustrates the relationship between Gene Expression and various biological processes. The root node is **GENE\_EXPRESSION, GOBP\_VIRAL\_GENE\_EXPRESSION**, which branches into several main categories. These categories are further subdivided into more specific processes, many of which are color-coded (red, yellow, green) to indicate different levels or types of processes. The diagram is set against a black background with a grid of small white dots.

**GENE\_EXPRESSION, GOBP\_VIRAL\_GENE\_EXPRESSION**

- GOBP\_NUCLEAR\_TRANSCRIPTION, GOBP\_NUCLEAR\_TRANSCRIPTION
- GOBP\_TRANSLATIONAL\_INITIATION, GOBP\_TRANSLATIONAL\_INITIATION
- GOBP\_ESTABLISHMENT\_OF\_PROTEIN\_LOCALIZATION\_TO\_ENDOPLASMIC\_RETICULUM, GOBP\_ESTABLISHMENT\_OF\_PROTEIN\_LOCALIZATION\_TO\_ENDOPLASMIC\_RETICULUM
- GOBP\_COTRANSLATIONAL\_PROTEIN\_TARGETING\_TO\_MEMBRANE, GOBP\_COTRANSLATIONAL\_PROTEIN\_TARGETING\_TO\_MEMBRANE
- GOBP\_PROTEIN\_LOCALIZATION\_TO\_ENDOPLASMIC\_RETICULUM, GOBP\_PROTEIN\_LOCALIZATION\_TO\_ENDOPLASMIC\_RETICULUM
- GOBP\_NUCLEAR\_EXPORT, GOBP\_NUCLEAR\_EXPORT
- GOBP\_ESTABLISHMENT\_OF\_RNA\_LOCALIZATION, GOBP\_ESTABLISHMENT\_OF\_RNA\_LOCALIZATION
- GOBP\_RIBOSOMAL\_LARGE\_SUBUNIT\_BIOGENESIS, GOBP\_RIBOSOMAL\_LARGE\_SUBUNIT\_BIOGENESIS
- GOBP\_RNA\_EXPORT\_FROM\_NUCLEUS, GOBP\_RNA\_EXPORT\_FROM\_NUCLEUS
- GOBP\_RIBOSOMAL\_SMALL\_SUBUNIT\_BIOGENESIS, GOBP\_RIBOSOMAL\_SMALL\_SUBUNIT\_BIOGENESIS
- GOBP\_CYTOPLASMIC\_TRANSLATION, GOBP\_CYTOPLASMIC\_TRANSLATION
- GOBP\_MRNA\_TRANSPORT, GOBP\_MRNA\_TRANSPORT
- GOBP\_MRNA\_EXPORT\_FROM\_NUCLEUS, GOBP\_MRNA\_EXPORT\_FROM\_NUCLEUS
- GOBP\_NUCLEOTIDE\_EXCISION\_REPAIR, GOBP\_NUCLEOTIDE\_EXCISION\_REPAIR
- GOBP\_TRANSCRIPTION\_COUPLED\_NUCLEOTIDE\_EXCISION\_REPAIR, GOBP\_TRANSCRIPTION\_COUPLED\_NUCLEOTIDE\_EXCISION\_REPAIR
- GOBP\_REGULATION\_OF\_MRNA\_PROCESSING, GOBP\_REGULATION\_OF\_MRNA\_PROCESSING
- GOBP\_DNA\_TEMPLATED\_TRANSCRIPTION\_ELONGATION, GOBP\_DNA\_TEMPLATED\_TRANSCRIPTION\_ELONGATION
- GOBP\_RIBOSOME\_ASSEMBLY, GOBP\_RIBOSOME\_ASSEMBLY
- GOBP\_PROTEIN\_IMPORT, GOBP\_PROTEIN\_IMPORT
- GOBP\_MATURATION\_OF\_SSU\_RRNA, GOBP\_MATURATION\_OF\_SSU\_RRNA
- GOBP\_DNA\_TEMPLATED\_TRANSCRIPTION\_TERMINATION, GOBP\_DNA\_TEMPLATED\_TRANSCRIPTION\_TERMINATION
- GOBP\_REGULATION\_OF\_GENE\_SILENCING, GOBP\_REGULATION\_OF\_GENE\_SILENCING
- GOBP\_NCRNA\_TRANSCRIPTION, GOBP\_NCRNA\_TRANSCRIPTION
- GOBP\_IMPORT\_INTO\_NUCLEUS, GOBP\_IMPORT\_INTO\_NUCLEUS
- GOBP\_REGULATION\_OF\_RNA\_SPLICING, GOBP\_REGULATION\_OF\_RNA\_SPLICING
- GOBP\_REGULATION\_OF\_GENE\_SILENCING\_BY\_RNA, GOBP\_REGULATION\_OF\_GENE\_SILENCING\_BY\_RNA
- GOBP\_MATURATION\_OF\_LSU\_RRNA, GOBP\_MATURATION\_OF\_LSU\_RRNA
- GOBP\_TRANSCRIPTION\_ELONGATION\_FROM\_RNA\_POLYMERASE\_II\_PROMOTER, GOBP\_TRANSCRIPTION\_ELONGATION\_FROM\_RNA\_POLYMERASE\_II\_PROMOTER
- GOBP\_NUCLEUS\_ORGANIZATION, GOBP\_NUCLEUS\_ORGANIZATION
- GOBP\_REGULATION\_OF\_CELLULAR\_RESPONSE\_TO\_HEAT, GOBP\_REGULATION\_OF\_CELLULAR\_RESPONSE\_TO\_HEAT
- GOBP\_TRANSCRIPTION\_BY\_RNA\_POLYMERASE\_I, GOBP\_TRANSCRIPTION\_BY\_RNA\_POLYMERASE\_I
- GOBP\_REGULATION\_OF\_TRANSLATIONAL\_INITIATION, GOBP\_REGULATION\_OF\_TRANSLATIONAL\_INITIATION
- GOBP\_REGULATION\_OF\_DNA\_TEMPLATED\_TRANSCRIPTION\_ELONGATION, GOBP\_REGULATION\_OF\_DNA\_TEMPLATED\_TRANSCRIPTION\_ELONGATION
- GOBP\_MATURATION\_OF\_SSU\_RRNA\_FROM\_TRICISTRONIC\_RRNA\_TRANSCRIPT\_SSU\_RRNA\_5\_8S\_RRNA\_LSU\_RRNA, GOBP\_MATURATION\_OF\_SSU\_RRNA\_FROM\_TRICISTRONIC\_RRNA\_TRANSCRIPT\_SSU\_RRNA\_5\_8S\_RRNA\_LSU\_RRNA
- GOBP\_POSITIVE\_REGULATION\_OF\_VIRAL\_PROCESS, GOBP\_POSITIVE\_REGULATION\_OF\_VIRAL\_PROCESS
- GOBP\_SNRNA\_TRANSCRIPTION, GOBP\_SNRNA\_TRANSCRIPTION
- GOBP\_REGULATION\_OF\_NUCLEOCYTOPLASMIC\_TRANSPORT, GOBP\_REGULATION\_OF\_NUCLEOCYTOPLASMIC\_TRANSPORT
- GOBP\_RIBOSOMAL\_LARGE\_SUBUNIT\_ASSEMBLY, GOBP\_RIBOSOMAL\_LARGE\_SUBUNIT\_ASSEMBLY
- GOBP\_PROTEIN\_SUMOYLATION, GOBP\_PROTEIN\_SUMOYLATION
- GOBP\_CELLULAR\_RESPONSE\_TO\_HEAT, GOBP\_CELLULAR\_RESPONSE\_TO\_HEAT
- GOBP\_POSITIVE\_REGULATION\_OF\_CELLULAR\_AMIDE\_METABOLIC\_PROCESS, GOBP\_POSITIVE\_REGULATION\_OF\_CELLULAR\_AMIDE\_METABOLIC\_PROCESS
- GOBP\_MULTI\_ORGANISM\_LOCALIZATION, GOBP\_MULTI\_ORGANISM\_LOCALIZATION
- GOBP\_NEGATIVE\_REGULATION\_OF\_CELLULAR\_PROTEIN\_CATABOLIC\_PROCESS, GOBP\_NEGATIVE\_REGULATION\_OF\_CELLULAR\_PROTEIN\_CATABOLIC\_PROCESS
- GOBP\_TRNA\_TRANSPORT, GOBP\_TRNA\_TRANSPORT
- GOBP\_VIRAL\_GENOME\_REPLICATION, GOBP\_VIRAL\_GENOME\_REPLICATION
- GOBP\_REGULATION\_OF\_PROTEIN\_LOCALIZATION\_TO\_NUCLEUS, GOBP\_REGULATION\_OF\_PROTEIN\_LOCALIZATION\_TO\_NUCLEUS
- GOBP\_NEGATIVE\_REGULATION\_OF\_UBIQUITIN\_DEPENDENT\_PROTEIN\_CATABOLIC\_PROCESS, GOBP\_NEGATIVE\_REGULATION\_OF\_UBIQUITIN\_DEPENDENT\_PROTEIN\_CATABOLIC\_PROCESS
- GOBP\_ENTRY\_INTO\_HOST, GOBP\_ENTRY\_INTO\_HOST
- GOBP\_POSITIVE\_REGULATION\_OF\_TRANSLATION, GOBP\_POSITIVE\_REGULATION\_OF\_TRANSLATION
- GOBP\_TRANSCRIPTION\_INITIATION\_FROM\_RNA\_POLYMERASE\_I\_PROMOTER, GOBP\_TRANSCRIPTION\_INITIATION\_FROM\_RNA\_POLYMERASE\_I\_PROMOTER
- GOBP\_NCRNA\_EXPORT\_FROM\_NUCLEUS, GOBP\_NCRNA\_EXPORT\_FROM\_NUCLEUS
- GOBP\_CARBOHYDRATE\_CATABOLIC\_PROCESS, GOBP\_CARBOHYDRATE\_CATABOLIC\_PROCESS
- GOBP\_POSITIVE\_REGULATION\_OF\_GENE\_EXPRESSION\_EPIGENETIC, GOBP\_POSITIVE\_REGULATION\_OF\_GENE\_EXPRESSION\_EPIGENETIC
- GOBP\_MOVEMENT\_IN\_HOST\_ENVIRONMENT, GOBP\_MOVEMENT\_IN\_HOST\_ENVIRONMENT
- GOBP\_REGULATION\_OF\_GENERATION\_OF\_PRECURSOR\_METABOLITES\_AND\_ENERGY, GOBP\_REGULATION\_OF\_GENERATION\_OF\_PRECURSOR\_METABOLITES\_AND\_ENERGY
- GOBP\_CYTOPLASMIC\_TRANSLATIONAL\_INITIATION, GOBP\_CYTOPLASMIC\_TRANSLATIONAL\_INITIATION
- GOBP\_REGULATION\_OF\_UBIQUITIN\_PROTEIN\_TRANSFERASE\_ACTIVITY, GOBP\_REGULATION\_OF\_UBIQUITIN\_PROTEIN\_TRANSFERASE\_ACTIVITY
- GOBP\_POSITIVE\_REGULATION\_OF\_AUTOPHAGY, GOBP\_POSITIVE\_REGULATION\_OF\_AUTOPHAGY
- GOBP\_RNA\_CAPPING, GOBP\_RNA\_CAPPING
- GOBP\_NEGATIVE\_REGULATION\_OF\_MRNA\_METABOLIC\_PROCESS, GOBP\_NEGATIVE\_REGULATION\_OF\_MRNA\_METABOLIC\_PROCESS
- GOBP\_ERYTHROCYTE\_HOMEOSTASIS, GOBP\_ERYTHROCYTE\_HOMEOSTASIS
- GOBP\_RESPONSE\_TO\_HEAT, GOBP\_RESPONSE\_TO\_HEAT
- GOBP\_POSITIVE\_REGULATION\_OF\_VIRAL\_TRANSCRIPTION, GOBP\_POSITIVE\_REGULATION\_OF\_VIRAL\_TRANSCRIPTION
- GOBP\_POSITIVE\_REGULATION\_OF\_MRNA\_METABOLIC\_PROCESS, GOBP\_POSITIVE\_REGULATION\_OF\_MRNA\_METABOLIC\_PROCESS
- GOBP\_REGULATION\_OF\_VIRAL\_TRANSCRIPTION, GOBP\_REGULATION\_OF\_VIRAL\_TRANSCRIPTION
- GOBP\_NEGATIVE\_REGULATION\_OF\_MRNA\_PROCESSING, GOBP\_NEGATIVE\_REGULATION\_OF\_MRNA\_PROCESSING
- GOBP\_POSITIVE\_REGULATION\_OF\_DNA\_TEMPLATED\_TRANSCRIPTION\_ELONGATION, GOBP\_POSITIVE\_REGULATION\_OF\_DNA\_TEMPLATED\_TRANSCRIPTION\_ELONGATION
- GOBP\_MAINTENANCE\_OF\_CELL\_NUMBER, GOBP\_MAINTENANCE\_OF\_CELL\_NUMBER
- GOBP\_TYPE\_I\_INTERFERON\_PRODUCTION, GOBP\_TYPE\_I\_INTERFERON\_PRODUCTION
- GOBP\_POSITIVE\_REGULATION\_OF\_I\_KAPPAB\_KINASE\_NF\_KAPPAB\_SIGNALING, GOBP\_POSITIVE\_REGULATION\_OF\_I\_KAPPAB\_KINASE\_NF\_KAPPAB\_SIGNALING
- GOBP\_POSITIVE\_REGULATION\_OF\_NF\_KAPPAB\_TRANSCRIPTION\_FACTOR\_ACTIVITY, GOBP\_POSITIVE\_REGULATION\_OF\_NF\_KAPPAB\_TRANSCRIPTION\_FACTOR\_ACTIVITY
- GOBP\_POSITIVE\_REGULATION\_OF\_CHROMATIN\_ORGANIZATION, GOBP\_POSITIVE\_REGULATION\_OF\_CHROMATIN\_ORGANIZATION
- GOBP\_TRANSCRIPTION\_ELONGATION\_FROM\_RNA\_POLYMERASE\_I\_PROMOTER, GOBP\_TRANSCRIPTION\_ELONGATION\_FROM\_RNA\_POLYMERASE\_I\_PROMOTER
- GOBP\_RESPONSE\_TO\_INTERFERON\_GAMMA, GOBP\_RESPONSE\_TO\_INTERFERON\_GAMMA
- GOBP\_NUCLEOSIDE\_DIPHOSPHATE\_METABOLIC\_PROCESS, GOBP\_NUCLEOSIDE\_DIPHOSPHATE\_METABOLIC\_PROCESS
- GOBP\_NEGATIVE\_REGULATION\_OF\_RNA\_SPLICING, GOBP\_NEGATIVE\_REGULATION\_OF\_RNA\_SPLICING
- GOBP\_TERMINATION\_OF\_RNA\_POLYMERASE\_I\_TRANSCRIPTION, GOBP\_TERMINATION\_OF\_RNA\_POLYMERASE\_I\_TRANSCRIPTION
- GOBP\_REGULATION\_OF\_BIOLOGICAL\_PROCESS\_INVOLVED\_IN\_SYMBIOTIC\_INTERACTION, GOBP\_REGULATION\_OF\_BIOLOGICAL\_PROCESS\_INVOLVED\_IN\_SYMBIOTIC\_INTERACTION
- GOBP\_REGULATION\_OF\_VIRAL\_GENOME\_REPLICATION, GOBP\_REGULATION\_OF\_VIRAL\_GENOME\_REPLICATION
- GOBP\_MATURATION\_OF\_LSU\_RRNA\_FROM\_TRICISTRONIC\_RRNA\_TRANSCRIPT\_SSU\_RRNA\_5\_8S\_RRNA\_LSU\_RRNA, GOBP\_MATURATION\_OF\_LSU\_RRNA\_FROM\_TRICISTRONIC\_RRNA\_TRANSCRIPT\_SSU\_RRNA\_5\_8S\_RRNA\_LSU\_RRNA
- GOBP\_TRANSCRIPTION\_INITIATION\_FROM\_RNA\_POLYMERASE\_II\_PROMOTER, GOBP\_TRANSCRIPTION\_INITIATION\_FROM\_RNA\_POLYMERASE\_II\_PROMOTER
- GOBP\_REGULATION\_OF\_TRANSCRIPTION\_ELONGATION\_FROM\_RNA\_POLYMERASE\_II\_PROMOTER, GOBP\_REGULATION\_OF\_TRANSCRIPTION\_ELONGATION\_FROM\_RNA\_POLYMERASE\_II\_PROMOTER
- GOBP\_NUCLEOTIDE\_PHOSPHORYLATION, GOBP\_NUCLEOTIDE\_PHOSPHORYLATION
- GOBP\_FORMATION\_OF\_CYTOPLASMIC\_TRANSLATION\_INITIATION\_COMPLEX, GOBP\_FORMATION\_OF\_CYTOPLASMIC\_TRANSLATION\_INITIATION\_COMPLEX
- GOBP\_RIBOSOMAL\_SMALL\_SUBUNIT\_ASSEMBLY, GOBP\_RIBOSOMAL\_SMALL\_SUBUNIT\_ASSEMBLY
- GOBP\_POSITIVE\_REGULATION\_OF\_TORC1\_SIGNALING, GOBP\_POSITIVE\_REGULATION\_OF\_TORC1\_SIGNALING
- GOBP\_PROTEIN\_DNA\_COMPLEX\_DISASSEMBLY, GOBP\_PROTEIN\_DNA\_COMPLEX\_DISASSEMBLY
- GOBP\_NEGATIVE\_REGULATION\_OF\_UBIQUITIN\_PROTEIN\_TRANSFERASE\_ACTIVITY, GOBP\_NEGATIVE\_REGULATION\_OF\_UBIQUITIN\_PROTEIN\_TRANSFERASE\_ACTIVITY
- GOBP\_RRNA\_CONTAINING\_RIBONUCLEOPROTEIN\_COMPLEX\_EXPORT\_FROM\_NUCLEUS, GOBP\_RRNA\_CONTAINING\_RIBONUCLEOPROTEIN\_COMPLEX\_EXPORT\_FROM\_NUCLEUS
- GOBP\_CELLULAR\_PROTEIN\_CONTAINING\_COMPLEX\_LOCALIZATION, GOBP\_CELLULAR\_PROTEIN\_CONTAINING\_COMPLEX\_LOCALIZATION
- GOBP\_REGULATION\_OF\_TRANSCRIPTION\_BY\_RNA\_POLYMERASE\_I, GOBP\_REGULATION\_OF\_TRANSCRIPTION\_BY\_RNA\_POLYMERASE\_I
- GOBP\_NUCLEAR\_PORE\_ORGANIZATION, GOBP\_NUCLEAR\_PORE\_ORGANIZATION
- GOBP\_PYRUVATE\_METABOLIC\_PROCESS, GOBP\_PYRUVATE\_METABOLIC\_PROCESS
- GOBP\_POSITIVE\_REGULATION\_OF\_TYPE\_I\_INTERFERON\_PRODUCTION, GOBP\_POSITIVE\_REGULATION\_OF\_TYPE\_I\_INTERFERON\_PRODUCTION
- GOBP\_REGULATION\_OF\_CARBOHYDRATE\_CATABOLIC\_PROCESS, GOBP\_REGULATION\_OF\_CARBOHYDRATE\_CATABOLIC\_PROCESS
- GOBP\_ANDROGEN\_RECEPTOR\_SIGNALING\_PATHWAY, GOBP\_ANDROGEN\_RECEPTOR\_SIGNALING\_PATHWAY
- GOBP\_POSITIVE\_REGULATION\_OF\_BINDING, GOBP\_POSITIVE\_REGULATION\_OF\_BINDING
- GOBP\_REGULATION\_OF\_NUCLEAR\_TRANSCRIBED\_MRNA\_POLY\_A\_TAIL\_SHORTENING, GOBP\_REGULATION\_OF\_NUCLEAR\_TRANSCRIBED\_MRNA\_POLY\_A\_TAIL\_SHORTENING
- GOBP\_REGULATION\_OF\_SPINDLE\_ORGANIZATION, GOBP\_REGULATION\_OF\_SPINDLE\_ORGANIZATION
- GOBP\_REGULATION\_OF\_DEFENSE\_RESPONSE\_TO\_VIRUS, GOBP\_REGULATION\_OF\_DEFENSE\_RESPONSE\_TO\_VIRUS
- GOBP\_RESPONSE\_TO\_INTERLEUKIN\_4, GOBP\_RESPONSE\_TO\_INTERLEUKIN\_4
- GOBP\_INTRINSIC\_APOPTOTIC\_SIGNALING\_PATHWAY\_BY\_P53\_CLASS\_MEDIATOR, GOBP\_INTRINSIC\_APOPTOTIC\_SIGNALING\_PATHWAY\_BY\_P53\_CLASS\_MEDIATOR
- GOBP\_REGULATION\_OF\_ATP\_METABOLIC\_PROCESS, GOBP\_REGULATION\_OF\_ATP\_METABOLIC\_PROCESS
- GOBP\_REGULATION\_OF\_RNA\_EXPORT\_FROM\_NUCLEUS, GOBP\_REGULATION\_OF\_RNA\_EXPORT\_FROM\_NUCLEUS
- GOBP\_PROTEIN\_NEDDYLATION, GOBP\_PROTEIN\_NEDDYLATION
- GOBP\_RNA\_INTERFERENCE, GOBP\_RNA\_INTERFERENCE
- GOBP\_REGULATION\_OF\_MRNA\_3\_END\_PROCESSING, GOBP\_REGULATION\_OF\_MRNA\_3\_END\_PROCESSING
- GOBP\_CHROMATIN\_DISASSEMBLY, GOBP\_CHROMATIN\_DISASSEMBLY
- GOBP\_HISTONE\_H4\_DEACETYLATION, GOBP\_HISTONE\_H4\_DEACETYLATION
- GOBP\_REGULATION\_OF\_DNA\_BINDING, GOBP\_REGULATION\_OF\_DNA\_BINDING
- GOBP\_REGULATION\_OF\_UBIQUITIN\_PROTEIN\_LIGASE\_ACTIVITY, GOBP\_REGULATION\_OF\_UBIQUITIN\_PROTEIN\_LIGASE\_ACTIVITY
- GOBP\_POSITIVE\_REGULATION\_BY\_HOST\_OF\_VIRAL\_TRANSCRIPTION, GOBP\_POSITIVE\_REGULATION\_BY\_HOST\_OF\_VIRAL\_TRANSCRIPTION
- GOBP\_NEGATIVE\_REGULATION\_OF\_VIRAL\_GENOME\_REPLICATION, GOBP\_NEGATIVE\_REGULATION\_OF\_VIRAL\_GENOME\_REPLICATION
- GOBP\_REGULATION\_OF\_REACTIVE\_OXYGEN\_SPECIES\_METABOLIC\_PROCESS, GOBP\_REGULATION\_OF\_REACTIVE\_OXYGEN\_SPECIES\_METABOLIC\_PROCESS
- GOBP\_POSITIVE\_REGULATION\_OF\_HISTONE\_H3\_K4\_METHYLATION, GOBP\_POSITIVE\_REGULATION\_OF\_HISTONE\_H3\_K4\_METHYLATION
- GOBP\_STRESS\_GRANULE\_ASSEMBLY, GOBP\_STRESS\_GRANULE\_ASSEMBLY
- GOBP\_NEGATIVE\_REGULATION\_OF\_PROTEIN\_MODIFICATION\_BY\_SMALL\_PROTEIN\_CONJUGATION\_OR\_REMOVAL, GOBP\_NEGATIVE\_REGULATION\_OF\_PROTEIN\_MODIFICATION\_BY\_SMALL\_PROTEIN\_CONJUGATION\_OR\_REMOVAL
- GOBP\_3\_UTR\_MEDIATED\_MRNA\_DESTABILIZATION, GOBP\_3\_UTR\_MEDIATED\_MRNA\_DESTABILIZATION
- GOBP\_POLY\_A\_PLUS\_MRNA\_EXPORT\_FROM\_NUCLEUS, GOBP\_POLY\_A\_PLUS\_MRNA\_EXPORT\_FROM\_NUCLEUS
- GOBP\_MACROPHAGE\_CHEMOTAXIS, GOBP\_MACROPHAGE