potassium ion transport cellular potassium ion transport potassium ion transmembrane transport regulation of synaptic transmission, glutamatergic synaptic transmission, glutamatergic regulation of cell morphogenesis	ontology t	: BP	
regulation of cell morphogenesis synapse organization modulation of chemical synaptic transmission regulation of trans—synaptic signaling actomyosin structure organization dendrite morphogenesis positive regulation of synapse assembly regulation of membrane potential regulation of circadian rhythm regulation of transmembrane transport regulation of dendrite morphogenesis			
regulation of synapse assembly kidney development kidney development renal system development cardiac septum morphogenesis cardiac chamber morphogenesis urogenital system development nephron development kidney epithelium development cardiac septum development	t -		
cardiac septum development cardiac chamber development regulation of hormone levels axonogenesis inner ear development multicellular organismal response to stress neuron projection guidance glomerulus development nephron epithelium development ear development axon development	t -		
stem cell division ventricular septum morphogenesis developmental growth involved in morphogenesis axon guidance cardiac ventricle morphogenesis regulation of signaling receptor activity somatic stem cell division response to pain regulation of kidney development			
regulation of system process nephron tubule development kidney morphogenesis morphogenesis of a branching structure morphogenesis of a branching epithelium renal tubule development heart morphogenesis positive regulation of cell development cardiac ventricle development outflow tract morphogenesis	6 -		
muscle system process ureteric bud development mesonephric tubule development cell differentiation involved in kidney development epithelial cell differentiation involved in kidney development positive regulation of neurogenesis mesonephros development developmental cell growth ventricular cardiac muscle tissue morphogenesis	t - • • • • • • • • • • • • • • • • • •		
hormone metabólic process epithelial cell proliferation appendage morphogenesis limb morphogenesis muscle tissue morphogenesis sensory organ development inner ear receptor cell differentiation hindbrain development gastrulation cell growth	1		
appendage development limb development positive regulation of nervous system development hormone transport chondroitin sulfate proteoglycan biosynthetic process mechanoreceptor differentiation lipid modification muscle organ morphogenesis epithelial cell fate commitment axon extension involved in axon guidance neuron projection extension involved in neuron projection guidance ventricular cardiac muscle tissue development	t - • • • • • • • • • • • • • • • • • •		
positive regulation of epithelial cell proliferation regulation of actomyosin structure organization digestive tract development renal system process regulation of organ morphogenesis neuron projection extension metanephros development regulation of epithelial cell proliferation epithelial cell proliferation epithelial cell differentiation	1		
nerve development blood circulation regulation of heart contraction branching morphogenesis of an epithelial tube negative chemotaxis ventricular septum development circulatory system process nephron morphogenesis digestive system development extracellular structure organization epidermis development			
action potential regulation of heart morphogenesis hormone secretion endocardium development potassium ion export proteoglycan biosynthetic process positive regulation of kidney development formation of primary germ layer chemotaxis			
embryonic morphogenesis taxis neuroepithelial cell differentiation embryonic limb morphogenesis embryonic appendage morphogenesis mesenchymal cell development cardiac muscle tissue morphogenesis forebrain development regulation of blood circulation columnar/cuboidal epithelial cell differentiation	1		
memory behavior endocardial cushion formation cell differentiation involved in metanephros development serotonin receptor signaling pathway sympathetic nervous system development G-protein coupled serotonin receptor signaling pathway calcium ion homeostasis skin development metal ion homeostasis negative regulation of striated muscle cell differentiation	r		
negative regulation of striated muscle cell differentiation chondroitin sulfate metabolic process positive regulation of neuron differentiation signal release regulation of hormone secretion respiratory tube development axon extension innervation innervation membrane repolarization during cardiac muscle cell action potential neural crest cell differentiation vascular process in circulatory system			
response to fúngus inner ear auditory receptor cell differentiation nephron tubule morphogenesis regulation of small GTPase mediated signal transduction determination of bilateral symmetry branching involved in ureteric bud morphogenesis chondroitin sulfate proteoglycan metabolic process cellular calcium ion homeostasis negative regulation of muscle cell apoptotic process morphogenesis of an epithelium endothelial cell chemotaxis			
specification of symmetry embryonic digit morphogenesis nephron epithelium morphogenesis positive regulation of supramolecular fiber organization cardiac muscle cell membrane repolarization negative regulation of myotube differentiation negative regulation of myotube differentiation high-density lipoprotein particle remodeling regulation of exocytosis hormone biosynthetic process			
cardiac atrium morphogenesis regulation of striated muscle cell differentiation positive regulation of stress fiber assembly pattern specification process regulation of neuron projection development positive regulation of synaptic transmission regulation of synapse organization regulation of synapse structure or activity synaptic vesicle cycle positive regulation of neuron projection development positive regulation of cell projection organization regulation of calcium ion—dependent exocytosis	1		
monovalent inorganic cation transport neurotransmitter transport synaptic vesicle exocytosis regulation of GTPase activity calcium ion-regulated exocytosis of neurotransmitter regulation of cell morphogenesis involved in differentiation positive regulation of GTPase activity dendrite development regulation of regulated secretory pathway	t- t- /- /- r- /- /-		
calcium ion regulated exocytosis presynaptic process involved in chemical synaptic transmission vesicle—mediated transport in synapse regulation of synaptic plasticity multicellular organismal signaling regulation of cation transmembrane transport neuromuscular junction development locomotory behavior neurotransmitter secretion signal release from synapse	5 -		
regulation of dendritic spine development regulation of cation channel activity dendritic spine development regulation of ion transmembrane transporter activity synaptic vesicle localization synaptic vesicle transport establishment of synaptic vesicle localization learning regulation of synaptic vesicle exocytosis regulation of metal ion transport	t- /-  -  -  -  -		
synapse assembly neuron recognition regulation of dendrite extension acid secretion positive regulation of synaptic transmission, glutamatergic regulation of postsynaptic membrane potential positive regulation of dendritic spine development regulation of synaptic vesicle transport adherens junction organization positive regulation of dendrite morphogenesis	/- 1- 1- 1- 1- 1- t- t-		
regulation of potassium ion transport positive regulation of dendritic spine morphogenesis regulation of transporter activity protein localization to cell periphery transmission of nerve impulse response to ammonium ion regulation of synaptic vesicle cycle cellular response to organonitrogen compound modulation of excitatory postsynaptic potential cellular component assembly involved in morphogenesis	t -		
cellular component assembly involved in morphogenesis actin filament bundle assembly regulation of relaxation of muscle Rho protein signal transduction temperature homeostasis postsynapse organization acidic amino acid transport regulation of peptide hormone secretion cell junction assembly positive regulation of glucose import in response to insulin stimulus regulation of neurotransmitter secretion	7- 1- 1- 1- 1- 1- 1-		
positive regulation of cell morphogenesis involved in differentiation positive regulation of dendrite development chemical synaptic transmission, postsynaptic peptide hormone secretion regulation of neurotransmitter transport actin filament bundle organization sodium ion transmembrane transport regulation of potassium ion transmembrane transport cell junction organization neuron migration cellular response to ammonium ion	1 -		GeneRatio
cellular response to ammonium ion protein localization to plasma membrane glucose import establishment of vesicle localization cerebellar cortex morphogenesis forelimb morphogenesis insulin secretion regulation of potassium ion transmembrane transporter activity heart process glutamate secretion vesicle localization	t- 1- 3- 3- 1- 7-		0.05 - 0.04 - 0.03 - 0.02 - 0.01
cardiac conduction cell–cell junction organization cilium movement axoneme assembly microtubule bundle formation ameboidal–type cell migration ameboidal–type cell migration second–messenger–mediated signaling epithelial cell migration epithelium migration axonemal dynein complex assembly	1 -		
embryonic organ development tissue migration regulation of supramolecular fiber organization endothelial cell migration microtubule-based movement wound healing extracellular matrix organization regulation of epithelial cell migration cGMP-mediated signaling determination of left/right symmetry regulation of Ras protein signal transduction	1 - 1 - 1 - t -		
muscle cell differentiation regulation of endothelial cell migration cyclic-nucleotide-mediated signaling regulation of actin filament-based process embryonic organ morphogenesis positive regulation of MAPK cascade positive regulation of endothelial cell migration epidermal cell differentiation	1 -		
prostate gland epithelium morphogenesis positive regulation of ossification embryo implantation cell-matrix adhesion Ras protein signal transduction glutamate receptor signaling pathway gland morphogenesis prostate gland morphogenesis morphogenesis of an epithelial sheet hair cell differentiation outer dynein arm assembly	1 -		
outer dynein arm assembly stem cell development positive regulation of reproductive process respiratory system development actin filament organization regulation of axonogenesis cell-substrate adhesion Wnt signaling pathway regulation of actin filament organization regulation of actin cytoskeleton organization regulation of Rho protein signal transduction	6- 1- 6- 1- 1- 1-		
cell-cell signaling by who positive regulation of epithelial cell migration positive regulation of epithelial cell migration positive regulation of cellular component biogenesis telencephalon development neural crest cell development positive regulation of cytoskeleton organization regulation of fibroblast growth factor receptor signaling pathway positive regulation of morphogenesis of an epithelium flagellated sperm motility regulation of What signaling pathway response to fibroblast growth factor	t- 1- 5- t- t- 1- /-		
response to fibroblast growth factor negative regulation of axonogenesis regulation of morphogenesis of an epithelium cilium assembly cilium organization positive regulation of axonogenesis positive regulation of osteoblast differentiation multicellular organismal homeostasis muscle contraction digestive system process	3- 1- 1- 3- 1- 3-		
regulation of reproductive process sperm motility glycogen catabolic process fibroblast growth factor receptor signaling pathway response to nutrient mesenchymal cell differentiation negative regulation of cellular component movement filopodium assembly epithelial cell development	6- /- /- /- t- t- /-		
negative regulation of neuron differentiation regulation of anatomical structure size regulation of cellular response to growth factor stimulus regulation of digestive system process cilium-dependent cell motility positive regulation of steroid metabolic process glucan catabolic process neural tube development renal tubule morphogenesis peptidyl-threonine modification contractile actin filament bundle assembly	8 t-		
stress fiber assembly regulation of body fluid levels vascular endothelial growth factor receptor signaling pathway positive regulation of actin filament bundle assembly cilium or flagellum–dependent cell motility mesenchyme development regulation of neuronal synaptic plasticity cellular polysaccharide catabolic process embryonic placenta morphogenesis	/- /- /- /- /- t- /-		
cell surface receptor signaling pathway involved in heart development Fc receptor mediated stimulatory signaling pathway cellular divalent inorganic cation homeostasis non-canonical Wnt signaling pathway calcium ion transport syncytium formation by plasma membrane fusion neural crest cell migration hippo signaling regulation of MAP kinase activity regulation of cholesterol storage negative regulation of fibroblast growth factor receptor signaling pathway positive regulation of branching involved in ureteric bud morphogenesis regulation of cell-substrate adhesion negative regulation of cell morphogenesis involved in differentiation	3- /- t- 1-		
regulation of cell—substrate adhesion regulation of cell—substrate adhesion negative regulation of cell morphogenesis involved in differentiation polysaccharide catabolic process divalent inorganic cation homeostasis cellular response to fibroblast growth factor stimulus labyrinthine layer morphogenesis syncytium formation gland development negative regulation of nervous system development digestion	5- 5- 1- t-		
ureteric bud morphogenesis immune response–regulating cell surface receptor signaling pathway involved in phagocytosis Fc–gamma receptor signaling pathway involved in phagocytosis cellular hormone metabolic process negative regulation of neurogenesis regulation of ossification ionotropic glutamate receptor signaling pathway cellular carbohydrate catabolic process regulation of actin filament bundle assembly positive regulation of oxidoreductase activity	3- 3- 3- 3- 1- 7-		
striated muscle tissue development negative regulation of cell development cellular metal ion homeostasis positive regulation of mesonephros development regulation of branching involved in ureteric bud morphogenesis neuron projection organization retina homeostasis mesonephric tubule morphogenesis regulation of neurotransmitter levels establishment of organelle localization	t -		
excitatory postsynaptic potential regulation of intracellular transport localization within membrane learning or memory adult behavior adult behavior regulation of cellular protein localization regulation of vesicle—mediated transport histone monoubiquitination amino acid transport amine transport cognition	1- t- /- r- t- t- t-		
dicarboxylic acid transport mechanosensory behavior ephrin receptor signaling pathway receptor localization to synapse catecholamine secretion regulation of protein localization to cell periphery cerebellar granular layer development dendritic spine organization dendritic spine morphogenesis	t- r- /- /- )- 1- /- t-		
neuron projection fasciculation neuron projection fasciculation positive regulation of cation channel activity histone ubiquitination neuron maturation regulation of dendritic spine morphogenesis synaptic vesicle priming regulation of phosphatase activity regulation of catecholamine secretion	1 -		
regulation of neuron projection development regulation of cytoskeleton organization sensory perception of sound negative regulation of cell projection organization nitric oxide mediated signal transduction regulation of extracellular matrix organization regulation of cell—matrix adhesion regulation of cell—matrix adhesion regulation of cell growth positive regulation of extracellular matrix organization sensory perception of mechanical stimulus	/- t- - - - - - - - - - - - - - - - - -		
positive regulation of bone mineralization positive regulation of bone mineralization positive regulation of bone mineralization regulation of bone mineralization long-term memory regulation of muscle system process integrin-mediated signaling pathway positive regulation of actin filament polymerization regulation of biomineral tissue development extracellular matrix disassembly Fc receptor signaling pathway ERK1 and ERK2 cascade	t- 1- /- 3- /- 1- t-		
ARF protein signal transduction regulation of ARF protein signal transduction muscle adaptation sensory perception sensory perception response to xenobiotic stimulus cellular response to transforming growth factor beta stimulus regulation of cellular component size positive regulation of protein polymerization positive regulation of cell-substrate adhesion	1 -		
camera–type eye development actin nucleation regulation of ERK1 and ERK2 cascade glomerular epithelial cell differentiation response to transforming growth factor beta myeloid leukocyte cytokine production positive regulation of endocytosis actin cytoskeleton reorganization positive regulation of cell migration	t -		
regulation of muscle hypertrophy myotube differentiation positive regulation of cell adhesion lung cell differentiation pallium development negative regulation of cell growth glomerular epithelial cell development glomerular component movement positive regulation of cellular component movement limbic system development phospholipid catabolic process	/-  -  -  -  -  -  -  -  -  -  -		
positive regulation of cell motility regulation of muscle adaptation negative regulation of cell motility regulation of cell adhesion negative regulation of cell adhesion negative regulation of cell adhesion peptidyl—threonine phosphorylation retina development in camera—type eye Arp2/3 complex—mediated actin nucleation muscle hypertrophy regulation of plasma lipoprotein particle levels collateral sprouting regulation of endocytosis	/-  -  -		
eye development collagen–activated signaling pathway neuron cellular homeostasis	t - /-		

ontology: MF potassium channel activity voltage-gated potassium channel activity voltage-gated cation channel activity potassium ion transmembrane transporter activity voltage-gated ion channel activity voltage-gated channel activity ion gated channel activity cation channel activity gated channel activity delayed rectifier potassium channel activity G-protein coupled neurotransmitter receptor activity neurotransmitter receptor activity substrate-specific channel activity metal ion transmembrane transporter activity ion channel activity channel activity passive transmembrane transporter activity MAP kinase activity G-protein coupled amine receptor activity phosphatidylinositol binding RNA polymerase II transcription factor activity, sequence-specific transcription regulatory region DNA binding transcription factor activity, sequence-specific DNA binding transcription factor recruiting phosphatidylinositol phosphate binding kinesin binding G-protein coupled serotonin receptor activity serotonin receptor activity hormone activity receptor regulator activity sulfur compound binding receptor ligand activity growth factor bindingtransmembrane receptor protein kinase activity ion channel bindingmicrotubule binding-GTPase activator activity tubulin binding-GTPase regulator activitycalmodulin bindingnucleoside-triphosphatase regulator activitysignal transducer activity, downstream of receptor GeneRatio protein serine/threonine kinase activityp.adjust 0.04 enzyme activator activity-0.03 0.02 0.01 monovalent inorganic cation transmembrane transporter activityprotein-containing complex scaffold activity clathrin bindingstructural constituent of cytoskeletonligand-dependent nuclear receptor transcription coactivator activity actin filament binding-Ras GTPase bindingsignal transducer, downstream of receptor, with serine/threonine kinase activity phospholipid binding-Ras guanyl-nucleotide exchange factor activity Rho guanyl-nucleotide exchange factor activitysyntaxin bindingphosphoric ester hydrolase activity guanyl-nucleotide exchange factor activityphosphoric diester hydrolase activity calcium-dependent phospholipid bindingion channel regulator activity channel regulator activity-Rho GTPase bindingactin bindingcalmodulin-dependent protein kinase activitycell adhesion molecule bindingtranscription coactivator bindingdynein light chain binding-GO:0001190: transcriptional activator activityspectrin binding-SNARE binding cadherin bindingpotassium channel regulator activitysyntaxin-1 binding-1-phosphatidylinositol bindingphosphatidylserine binding-SH3 domain binding integrin bindingglycosaminoglycan bindingtransmembrane receptor protein tyrosine kinase activity extracellular ligand-gated ion channel activitycollagen bindingligand-gated ion channel activityligand-gated channel activity-

postsynapse	ontology	y: CC						
postsynaptic membrane synaptic membrane	-							
potassium channel complex cation channel complex								
voltage-gated potassium channel complex asymmetric synapse								
neuron to neuron synapse postsynaptic density								
postsynaptic specialization ion channel complex								
transmembrane transporter complex transporter complex								
cell division site distal axon	-							
axon part receptor complex								
axoneme part  presynapse  cell-cell junction	_							
main axon neuronal cell body	_							
transport vesicle membrane cell body	_							
presynaptic membrane exocytic vesicle								
growth cone synaptic vesicle								
transport vesicle site of polarized growth								
dendritic spine cell cortex								
neuron spine cell leading edge								
T-tubule cell-cell contact zone								
cytoplasmic region  A band								
axolemma intercalated disc								
synaptic vesicle membrane exocytic vesicle membrane								
axon terminus perikaryon M band								
M band sarcolemma	_							
phagophore assembly site septin cytoskeleton cell cortex region	_							
neuron projection terminus  neurotransmitter receptor complex								
cortical cytoskeleton presynaptic active zone								
catenin complex apical junction complex								
extrinsic component of membrane cell cortex part								
axoneme ciliary plasm								
plasma membrane bounded cell projection cytoplasm plasma membrane receptor complex								
extracellular matrix ionotropic glutamate receptor complex								GeneRatio
proteinaceous extracellular matrix cluster of actin-based cell projections								0.075  p.adjust  0.05 0.04 0.03
brush border cilium								0.02 0.01
actin-based cell projection basement membrane								
cell-substrate junction dynein complex								
focal adhesion cell projection membrane	_							
cell-substrate adherens junction lamellipodium	_							
extracellular matrix component								
AMPA glutamate receptor complex actin cytoskeleton axonemal dynein complex	_							
motile cilium filopodium	_							
apical part of cell endoplasmic reticulum lumen	_							
excitatory synapse actomyosin	_							
apical dendrite stress fiber								
contractile actin filament bundle recycling endosome membrane								
side of membrane integrin complex								
protein complex involved in cell adhesion terminal bouton								
endoplasmic reticulum tubular network sarcoplasm								
filopodium tip growth cone part								
juxtaparanode region of axon dendrite terminus	_							
nuclear membrane leading edge membrane	_							
non-motile cilium clathrin coat of trans-Golgi network vesicle								
nuclear inclusion body  axon initial segment  nuclear envelope								
nuclear envelope  mRNA cap binding complex  neuron projection cytoplasm	_							
sarcoplasmic reticulum Z disc								
trans-Golgi network transport vesicle membrane node of Ranvier	_							
RNA cap binding complex blood microparticle								
endocytic vesicle actin filament bundle								
collagen trimer photoreceptor outer segment								
ruffle basolateral plasma membrane								
DNA-directed RNA polymerase I complex cytoplasmic side of membrane								
cytoplasmic side of plasma membrane ruffle membrane								
9+0 non-motile cilium photoreceptor cell cilium stereocilium								
stereocilium		.D G 38) (6	.H E	i.D E 154) (1	E.H J 150) (8	.D J 80) (8	.H 65)	

Nourcactive ligand recentor interaction	ontology: KEGG						
Neuroactive ligand-receptor interaction  Calcium signaling pathway							
Axon guidance	, -						
Serotonergic synapse	, -						
Dopaminergic synapse							
Glutamatergic synapse							
cAMP signaling pathway  GABAergic synapse							
Cholinergic synapse	, -						
Insulin secretion							
Adrenergic signaling in cardiomyocytes							
MAPK signaling pathway	, _						
Inflammatory mediator regulation of TRP channels							
Taste transduction  Phosphatidylinositol signaling system							
Retrograde endocannabinoid signaling							
Type II diabetes mellitus							
ErbB signaling pathway	,						
Morphine addiction							
Ras signaling pathway	,						
Oxytocin signaling pathway							
Renin secretion  Circadian entrainmen							
Longevity regulating pathway							
Amphetamine addiction							
Aldosterone synthesis and secretion							
Proteoglycans in cance							
Autophagy – anima							
Long-term potentiation							
Carbohydrate digestion and absorption  Gastric acid secretion							
Cushing's syndrome							
Prolactin signaling pathway	,						
Wnt signaling pathway	,						p.adjust
Neurotrophin signaling pathway	7						- 0.06 - 0.04 - 0.02
Relaxin signaling pathway	7						<ul><li>GeneRatio</li><li>0.02</li><li>0.04</li><li>0.06</li><li>0.08</li></ul>
Salivary secretion  Platelet activation							
C-type lectin receptor signaling pathway							
Sphingolipid signaling pathway	,						
HIF-1 signaling pathway	,						
Human papillomavirus infection							
Arrhythmogenic right ventricular cardiomyopathy (ARVC)							
ECM-receptor interaction							
Regulation of actin cytoskeletor  Focal adhesior							
Vibrio cholerae infection							
Leukocyte transendothelial migration							
Hippo signaling pathway	,						
Endocrine and other factor-regulated calcium reabsorption							
Synaptic vesicle cycle	, -						
Rap1 signaling pathway  Bacterial invasion of epithelial cells							
Insulin signaling pathway							
Progesterone-mediated oocyte maturation							
Vascular smooth muscle contraction							
GnRH signaling pathway	7						
Pancreatic secretion							
Chamakina signaling nathway							
Chemokine signaling pathway Parathyroid hormone synthesis, secretion and action							
Regulation of lipolysis in adipocytes							
Chagas disease (American trypanosomiasis)	,						
Endocrine resistance	1						
Inositol phosphate metabolism							
Estrogen signaling pathway							
Hypertrophic cardiomyopathy (HCM)  Amoebiasis							
Amoebiasis  Dilated cardiomyopathy (DCM)							
Thyroid hormone signaling pathway	,						
	G.D (228) (2	G.H E 268) (4	E.D E.46) (5	E.H J 03) (3	.D J 57) (4	.H 03)	