

GO Annotations

Locus	Gene Model(s)	GO term (links to Tair Keyword Browser) (GO ID)	cat	code	GO Slim	Reference	Made by: date last modified
AT4G28420	AT4G28420	tyrosine catabolic process (GO:0006572)	proc	IBA	other metabolic processes other cellular processes catabolic process	Communication:501741973	NA 06/07/2023 00:00:00
	AT4G28420	L-tyrosine:2-oxoglutarate aminotransferase activity (GO:0004838)	func	IBA	transferase activity	Communication:501741973	NA 06/07/2023 00:00:00
	AT4G28420	pyridoxal phosphate binding (GO:0030170)	func	IEA	other binding	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT4G28420	amino acid metabolic process (GO:0006520)	proc	IEA	other metabolic processes other cellular processes	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT4G28420.2	cytoplasm (GO:0005737)	comp	ISM	cytoplasm	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT4G28420	biosynthetic process (GO:0009058)	proc	IEA	biosynthetic process	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT4G28420.1	cytoplasm (GO:0005737)	comp	ISM	cytoplasm	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT4G28420	cytosol (GO:0005829)	comp	IBA	cytosol	Communication:501741973	NA 04/20/2022 00:00:00
AT3G16240	AT3G16240	membrane (GO:0016020)	comp	IBA	other membranes	Communication:501741973	NA 06/07/2023 00:00:00
	AT3G16240	water channel activity (GO:0015250)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00
	AT3G16240.1	plant-type vacuole (GO:0000325)	comp	HDA	vacuole	Publication:501714874 PMID:15539469	NA 05/12/2021 00:00:00
	AT3G16240	water channel activity (GO:0015250)	func	ISS	transporter activity	Communication:1674994	TAIR 03/29/2003 00:00:00
	AT3G16240	identical protein binding (GO:0042802)	func	IPI	protein binding	Publication:501768821 PMID:27028365	NA 09/23/2023 00:00:00
	AT3G16240.1	plasma membrane (GO:0005886)	comp	HDA	plasma membrane	Publication:501712339 PMID:15060130	NA 05/10/2021 00:00:00
	AT3G16240	urea transmembrane transporter activity (GO:0015204)	func	IGI	transporter activity	Publication:501707688 PMID:12860388	TAIR 03/23/2010 00:00:00
	AT3G16240	central vacuole (GO:0042807)	comp	IDA	vacuole	Publication:501723051 PMID:17905861	TAIR 03/23/2010 00:00:00
	AT3G16240	ammonium transmembrane transporter activity (GO:0008519)	func	IGI	transporter activity	Publication:501714533 PMID:15665250	TAIR 07/18/2014 00:00:00

	AT3G16240	water transport (GO:0006833)	proc	IBA	transport	Communication:501741973	NA 06/07/2023 00:00:00
	AT3G16240.1	plasmodesma (GO:0009506)	comp	HDA	other cellular components	Publication:501742898 PMID:21533090	NA 04/07/2021 00:00:00
	AT3G16240.1	plant-type cell wall (GO:0009505)	comp	HDA	cell wall	Publication:501718077 PMID:16287169	NA 05/12/2021 00:00:00
	AT3G16240.1	plant-type vacuole (GO:0000325)	comp	HDA	vacuole	Publication:501720626 PMID:17151019	NA 05/12/2021 00:00:00
	AT3G16240	methylammonium transmembrane transporter activity (GO:0015200)	func	IDA	transporter activity	Publication:501714533 PMID:15665250	TAIR 04/05/2005 00:00:00
	AT3G16240.1	chloroplast envelope (GO:0009941)	comp	HDA	plastid chloroplast other intracellular components	Publication:501707066 PMID:12766230	NA 04/12/2021 00:00:00
	AT3G16240	water transport (GO:0006833)	proc	IDA	transport	Publication:3962 PMID:8624437	NA 04/01/2021 00:00:00
	AT3G16240	water channel activity (GO:0015250)	func	IDA	transporter activity	Publication:3962 PMID:8624437	TAIR 03/29/2003 00:00:00
	AT3G16240	urea transport (GO:0015840)	proc	IGI	transport	Publication:501707688 PMID:12860388	TAIR 03/23/2010 00:00:00
	AT3G16240	protein storage vacuole (GO:0000326)	comp	IDA	vacuole	Publication:501723051 PMID:17905861	TAIR 03/23/2010 00:00:00
	AT3G16240	water transport (GO:0006833)	proc	IDA	transport	Publication:3962 PMID:8624437	TAIR 03/23/2010 00:00:00
	AT3G16240	transmembrane transport (GO:0055085)	proc	IDA	transport other cellular processes	Publication:3962 PMID:8624437	NA 04/01/2021 00:00:00
	AT3G16240	plant-type cell wall (GO:0009505)	comp	HDA	cell wall	Publication:501718077 PMID:16287169	TAIR 05/12/2021 00:00:00
	AT3G16240.1	plasma membrane (GO:0005886)	comp	HDA	plasma membrane	Publication:501722708 PMID:17644812	NA 04/07/2021 00:00:00
	AT3G16240.1	Golgi apparatus (GO:0005794)	comp	HDA	Golgi apparatus	Publication:501747810 PMID:22430844	NA 05/12/2021 00:00:00
	AT3G16240	plant-type vacuole membrane (GO:0009705)	comp	IDA	other membranes vacuole	Publication:3962 PMID:8624437	TAIR 08/05/2002 00:00:00
AT3G45680	AT3G45680	nitrate transmembrane transport (GO:0015706)	proc	IMP	transport	Publication:501764600 PMID:26058834	NA 07/08/2015 00:00:00
	AT3G45680	plasma membrane (GO:0005886)	comp	IBA	plasma membrane	Communication:501741973	NA 06/07/2023 00:00:00
	AT3G45680	transmembrane transporter activity (GO:0022857)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00

	AT3G45680	oligopeptide transport (GO:0006857)	proc	IEA	transport	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT3G45680	cellular response to salt stress (GO:0071472)	proc	IMP	response to abiotic stimulus response to stress response to chemical other cellular processes	Publication:501764600 PMID:26058834	NA 07/08/2015 00:00:00
	AT3G45680	transmembrane transport (GO:0055085)	proc	IBA	other cellular processes transport	Communication:501741973	NA 06/07/2023 00:00:00
	AT3G45680	nitrate transmembrane transporter activity (GO:0015112)	func	IDA	transporter activity	Publication:501764600 PMID:26058834	NA 07/08/2015 00:00:00
	AT3G45680	plasma membrane (GO:0005886)	comp	IDA	plasma membrane	Publication:501764600 PMID:26058834	NA 07/08/2015 00:00:00
	AT3G45680	response to nematode (GO:0009624)	proc	HEP	response to external stimulus response to biotic stimulus	Publication:501718529 PMID:16478044	TAIR 12/03/2019 00:00:00
AT1G59740	AT1G59740	oligopeptide transport (GO:0006857)	proc	IEA	transport	AnalysisReference:501756966	NA 09/23/2023 00:00:00
AT1G59740	AT1G59740	membrane (GO:0016020)	comp	IBA	other membranes	Communication:501741973	NA 06/07/2023 00:00:00
AT1G59740	AT1G59740	transmembrane transport (GO:0055085)	proc	IEA	transport other cellular processes	AnalysisReference:501756966	NA 09/23/2023 00:00:00
AT1G59740	AT1G59740	response to nematode (GO:0009624)	proc	HEP	response to biotic stimulus response to external stimulus	Publication:501718529 PMID:16478044	TAIR 12/03/2019 00:00:00
AT1G59740	AT1G59740	transmembrane transporter activity (GO:0022857)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00
AT1G59740	AT1G59740	transmembrane transport (GO:0055085)	proc	IBA	other cellular processes transport	Communication:501741973	NA 06/07/2023 00:00:00
AT1G59740	AT1G59740	transmembrane transporter activity (GO:0022857)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00
AT5G23020	AT5G23020	chloroplast (GO:0009507)	comp	IDA	chloroplast	Publication:501721246 PMID:17369439	TAIR 05/04/2007 00:00:00
AT5G23020	AT5G23020	chloroplast (GO:0009507)	comp	IBA	chloroplast	Communication:501741973	NA 09/10/2021 00:00:00
AT5G23020	AT5G23020	glucosinolate biosynthetic process (GO:0019761)	proc	IDA	secondary metabolic process biosynthetic process other	Publication:501721246 PMID:17369439	TAIR 05/04/2007 00:00:00

				cellular processes other metabolic processes			
AT5G23020	2-(2'-methylthio)ethylmalate synthase activity (GO:0010177)	func	IDA	transferase activity	Publication:501721246 PMID:17369439	TAIR 05/04/2007 00:00:00	
AT5G23020	2-isopropylmalate synthase activity (GO:0003852)	func	NAS	transferase activity	Publication:501682507 PMID:12432038	TAIR 03/03/2006 00:00:00	
AT5G23020	glucosinolate biosynthetic process (GO:0019761)	proc	IGI	other cellular processes secondary metabolic process other metabolic processes biosynthetic process	Publication:501712434 PMID:15155874	NA 03/07/2006 00:00:00	
AT5G23020	leucine biosynthetic process (GO:0009098)	proc	TAS	other cellular processes other metabolic processes biosynthetic process	Publication:501682507 PMID:12432038	TAIR 02/26/2003 00:00:00	
AT5G23020.1	chloroplast (GO:0009507)	comp	ISM	chloroplast	AnalysisReference:501780126	NA 08/31/2018 00:00:00	
AT5G23020	glucosinolate biosynthetic process (GO:0019761)	proc	IMP	other cellular processes secondary metabolic process other metabolic processes biosynthetic process	Publication:501712434 PMID:15155874	NA 03/07/2006 00:00:00	
AT4G35630	AT4G35630	O-phospho-L-serine:2-oxoglutarate aminotransferase activity (GO:0004648)	func	IGI	transferase activity	Publication:1867 PMID:9881164	TAIR 01/06/2006 00:00:00
	AT4G35630	protein homodimerization activity (GO:0042803)	func	IDA	protein binding	Publication:501780719 PMID:30034403	NA 04/01/2021 00:00:00
	AT4G35630.1	chloroplast stroma (GO:0009570)	comp	HDA	chloroplast plastid	Publication:501727324 PMID:18633119	NA 04/07/2021 00:00:00
	AT4G35630	pyridoxal phosphate binding (GO:0030170)	func	IDA	other binding	Publication:501780719 PMID:30034403	NA 04/01/2021 00:00:00
	AT4G35630	plastid (GO:0009536)	comp	HDA	plastid	Publication:501750648 PMID:22923678	NA 04/07/2021 00:00:00
	AT4G35630	O-phospho-L-serine:2-oxoglutarate aminotransferase activity (GO:0004648)	func	IBA	transferase activity	Communication:501741973	NA 01/14/2023 00:00:00
AT4G35630.1	chloroplast (GO:0009507)	comp	ISM	chloroplast	AnalysisReference:501780126	NA 08/31/2018 00:00:00	

	AT4G35630	L-serine biosynthetic process (GO:0006564)	proc	TAS	biosynthetic process other metabolic processes other cellular processes	Publication:1867 PMID:9881164	TAIR 01/06/2006 00:00:00
	AT4G35630.1	chloroplast (GO:0009507)	comp	HDA	chloroplast	Publication:501724486 PMID:18431481	NA 04/07/2021 00:00:00
	AT4G35630.1	chloroplast stroma (GO:0009570)	comp	HDA	plastid chloroplast	Publication:501735990 PMID:20061580	NA 04/07/2021 00:00:00
	AT4G35630	O-phospho-L-serine:2-oxoglutarate aminotransferase activity (GO:0004648)	func	IDA	transferase activity	Publication:1867 PMID:9881164	TAIR 01/06/2006 00:00:00
	AT4G35630	chloroplast (GO:0009507)	comp	IDA	chloroplast	Publication:1867 PMID:9881164	TAIR 01/06/2006 00:00:00
	AT4G35630	pyridoxal phosphate binding (GO:0030170)	func	IBA	other binding	Communication:501741973	NA 06/07/2023 00:00:00
	AT4G35630	cytoplasm (GO:0005737)	comp	IBA	cytoplasm	Communication:501741973	NA 06/07/2023 00:00:00
	AT4G35630	L-serine biosynthetic process (GO:0006564)	proc	IBA	other metabolic processes biosynthetic process other cellular processes	Communication:501741973	NA 06/07/2023 00:00:00
	AT4G35630	chloroplast (GO:0009507)	comp	HDA	chloroplast	Publication:501761766 PMID:25293756	NA 04/04/2019 00:00:00
AT5G57685	AT5G57685	protein binding (GO:0005515)	func	IPI	protein binding	Publication:501790246 PMID:32612234	NA 09/23/2023 00:00:00
AT5G57685	AT5G57685	secretion by cell (GO:0032940)	proc	ISS	transport other cellular processes	Publication:501712614 PMID:15208395	TAIR 04/01/2008 00:00:00
AT5G57685	AT5G57685	regulation of amino acid export (GO:0080143)	proc	IMP	other cellular processes transport	Publication:501735673 PMID:20018597	NA 01/25/2010 00:00:00
AT5G57685	AT5G57685	modulation by host of viral process (GO:0044788)	proc	IMP	other biological processes	Publication:501736061 PMID:20042021	NA 12/14/2022 00:00:00
AT5G57685	AT5G57685	response to virus (GO:0009615)	proc	IMP	response to external stimulus response to biotic stimulus	Publication:501736061 PMID:20042021	NA 06/14/2010 00:00:00
AT5G57685.1	AT5G57685.1	nucleus (GO:0005634)	comp	ISM	nucleus	AnalysisReference:501780126	NA 08/31/2018 00:00:00
AT1G09930	AT1G09930	membrane (GO:0016020)	comp	ISS	other membranes	Publication:1546132 PMID:11788749	TAIR 08/27/2002 00:00:00
AT1G09930	AT1G09930	oligopeptide transmembrane transporter activity (GO:0035673)	func	ISS	transporter activity	Communication:1674994	TAIR 12/18/2020 00:00:00

	AT1G09930	oligopeptide transmembrane transporter activity (GO:0035673)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT1G09930	cellular developmental process (GO:0048869)	proc	IEA	other cellular processes	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT1G09930	oligopeptide transmembrane transporter activity (GO:0035673)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00
	AT1G09930.1	cytoplasm (GO:0005737)	comp	ISM	cytoplasm	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT1G09930	oligopeptide transmembrane transporter activity (GO:0035673)	func	ISS	transporter activity	Publication:1546132 PMID:11788749	TAIR 12/18/2020 00:00:00
AT2G36590	AT2G36590	L-proline transmembrane transporter activity (GO:0015193)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00
	AT2G36590	proline transport (GO:0015824)	proc	IGI	transport	Publication:501714407 PMID:15618414	TAIR 09/26/2011 00:00:00
	AT2G36590.2	cytoplasm (GO:0005737)	comp	ISM	cytoplasm	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT2G36590	L-proline transmembrane transporter activity (GO:0015193)	func	IGI	transporter activity	Publication:501714407 PMID:15618414	TAIR 09/26/2011 00:00:00
	AT2G36590	amino acid transmembrane transport (GO:0003333)	proc	IBA	other cellular processes transport	Communication:501741973	NA 06/07/2023 00:00:00
	AT2G36590	plasma membrane (GO:0005886)	comp	IBA	plasma membrane	Communication:501741973	NA 06/07/2023 00:00:00
	AT2G36590	amino acid transmembrane transporter activity (GO:0015171)	func	ISS	transporter activity	Communication:1674994	TAIR 07/04/2007 00:00:00
	AT2G36590	proline transport (GO:0015824)	proc	IBA	transport	Communication:501741973	NA 06/07/2023 00:00:00
	AT2G36590	plasma membrane (GO:0005886)	comp	IDA	plasma membrane	Publication:501714407 PMID:15618414	TAIR 03/28/2005 00:00:00
AT5G14940	AT5G14940	transmembrane transport (GO:0055085)	proc	IBA	transport other cellular processes	Communication:501741973	NA 06/07/2023 00:00:00
	AT5G14940	membrane (GO:0016020)	comp	IBA	other membranes	Communication:501741973	NA 06/07/2023 00:00:00
	AT5G14940	dipeptide transmembrane transporter activity (GO:0071916)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT5G14940	amino acid transmembrane transporter activity (GO:0015171)	func	ISS	transporter activity	Communication:1674994	TAIR 07/04/2007 00:00:00
	AT5G14940	response to nematode (GO:0009624)	proc	HEP	response to biotic stimulus response to external stimulus	Publication:501718529 PMID:16478044	TAIR 12/03/2019 00:00:00

	AT5G14940	tripeptide transmembrane transporter activity (GO:0042937)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT5G14940	transmembrane transporter activity (GO:0022857)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00
AT3G51895	AT3G51895.2	chloroplast (GO:0009507)	comp	ISM	chloroplast	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT3G51895	secondary active sulfate transmembrane transporter activity (GO:0008271)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT3G51895	sulfate transmembrane transporter activity (GO:0015116)	func	IMP	transporter activity	Publication:501751381 PMID:23095126	TAIR 12/13/2012 00:00:00
	AT3G51895	chloroplast (GO:0009507)	comp	IDA	chloroplast chloroplast	Publication:501751381 PMID:23095126	TAIR 12/13/2012 00:00:00
	AT3G51895.1	cytoplasm (GO:0005737)	comp	ISM	cytoplasm	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT3G51895	sulfate transport (GO:0008272)	proc	IMP	transport	Publication:501751381 PMID:23095126	TAIR 12/13/2012 00:00:00
AT1G11860	AT1G11860.1	mitochondrion (GO:0005739)	comp	HDA	mitochondrion	Publication:501724621 PMID:18385124	NA 04/07/2021 00:00:00
	AT1G11860.2	apoplast (GO:0048046)	comp	HDA	extracellular region	Publication:501725189 PMID:18538804	NA 05/10/2021 00:00:00
	AT1G11860.1	chloroplast thylakoid (GO:0009534)	comp	HDA	thylakoid chloroplast other intracellular components plastid	Publication:501735990 PMID:20061580	NA 04/07/2021 00:00:00
	AT1G11860.2	chloroplast envelope (GO:0009941)	comp	HDA	plastid chloroplast other intracellular components	Publication:501710686 PMID:12938931	NA 04/07/2021 00:00:00
	AT1G11860	macromolecule biosynthetic process (GO:0009059)	proc	IEA	other metabolic processes biosynthetic process	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT1G11860.2	mitochondrion (GO:0005739)	comp	ISM	mitochondrion	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT1G11860.1	apoplast (GO:0048046)	comp	HDA	extracellular region	Publication:501725189 PMID:18538804	NA 05/10/2021 00:00:00
	AT1G11860.1	cytosolic ribosome (GO:0022626)	comp	HDA	cytosol ribosome	Publication:501714975 PMID:15821981	NA 04/15/2021 00:00:00
	AT1G11860.2	mitochondrion (GO:0005739)	comp	HDA	mitochondrion	Publication:501724621 PMID:18385124	NA 04/07/2021 00:00:00
	AT1G11860	organic acid biosynthetic process	proc	IEA	other cellular processes	Publication:501796011 PMID:34562334	NA 11/14/2022

	(GO:0016053)			biosynthetic process other metabolic processes		00:00:00
AT1G11860	cellular nitrogen compound biosynthetic process (GO:0044271)	proc	IEA	other metabolic processes biosynthetic process other cellular processes	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
AT1G11860.1	chloroplast envelope (GO:0009941)	comp	HDA	plastid chloroplast other intracellular components	Publication:501710686 PMID:12938931	NA 04/07/2021 00:00:00
AT1G11860	extracellular region (GO:0005576)	comp	HDA	extracellular region	Publication:501776792 PMID:28887381	NA 04/04/2019 00:00:00
AT1G11860.3	mitochondrion (GO:0005739)	comp	ISM	mitochondrion	AnalysisReference:501780126	NA 08/31/2018 00:00:00
AT1G11860	glycine catabolic process (GO:0006546)	proc	IEA	catabolic process other cellular processes other metabolic processes	AnalysisReference:501756966	NA 09/23/2023 00:00:00
AT1G11860.1	chloroplast stroma (GO:0009570)	comp	HDA	chloroplast plastid	Publication:501735990 PMID:20061580	NA 04/07/2021 00:00:00
AT1G11860.2	cytosolic ribosome (GO:0022626)	comp	HDA	cytosol ribosome	Publication:501714975 PMID:15821981	NA 04/15/2021 00:00:00
AT1G11860	mitochondrion (GO:0005739)	comp	IBA	mitochondrion	Communication:501741973	NA 06/07/2023 00:00:00
AT1G11860.1	mitochondrion (GO:0005739)	comp	ISM	mitochondrion	AnalysisReference:501780126	NA 08/31/2018 00:00:00
AT1G11860.1	chloroplast (GO:0009507)	comp	HDA	chloroplast	Publication:501724486 PMID:18431481	NA 04/07/2021 00:00:00
AT1G11860	mRNA binding (GO:0003729)	func	IDA	RNA binding	Publication:501789490 PMID:32344669	NA 05/16/2020 00:00:00
AT1G11860.2	chloroplast (GO:0009507)	comp	HDA	chloroplast	Publication:501724486 PMID:18431481	NA 04/07/2021 00:00:00
AT1G11860	mitochondrion (GO:0005739)	comp	IDA	mitochondrion	Publication:501776854 PMID:28866761	TAIR 06/09/2021 00:00:00
AT1G11860	aminomethyltransferase activity (GO:0004047)	func	IEA	transferase activity	AnalysisReference:501756967	NA 09/23/2023 00:00:00
AT1G11860	mitochondrion (GO:0005739)	comp	HDA	mitochondrion	Publication:501761766 PMID:25293756	NA 04/04/2019 00:00:00
AT1G11860	response to light stimulus (GO:0009416)	proc	IEA	response to light stimulus	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00

	AT1G11860	monocarboxylic acid metabolic process (GO:0032787)	proc	IEA	other cellular processes other metabolic processes	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT1G11860	terpenoid biosynthetic process (GO:0016114)	proc	IEA	biosynthetic process lipid metabolic process other metabolic processes other cellular processes	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
AT2G35370	AT2G35370	glycine dehydrogenase (decarboxylating) activity (GO:0004375)	func	TAS	catalytic activity	Publication:501682443	TAIR 06/13/2003 00:00:00
	AT2G35370.1	nucleus (GO:0005634)	comp	HDA	nucleus	Publication:501711432 PMID:14617066	NA 04/22/2021 00:00:00
	AT2G35370	mitochondrion (GO:0005739)	comp	IBA	mitochondrion	Communication:501741973	NA 06/07/2023 00:00:00
	AT2G35370	glycine cleavage complex (GO:0005960)	comp	IEA	cytoplasm	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT2G35370	cytoplasm (GO:0005737)	comp	IBA	cytoplasm	Communication:501741973	NA 06/07/2023 00:00:00
	AT2G35370	cytosol (GO:0005829)	comp	HDA	cytosol	Publication:501761766 PMID:25293756	NA 04/04/2019 00:00:00
	AT2G35370	photorespiration (GO:0009853)	proc	TAS	other metabolic processes other cellular processes	Publication:501682443	TAIR 06/13/2003 00:00:00
	AT2G35370	protein lipoylation (GO:0009249)	proc	IBA	other metabolic processes protein metabolic process	Communication:501741973	NA 06/07/2023 00:00:00
	AT2G35370	glycine decarboxylation via glycine cleavage system (GO:0019464)	proc	IEA	other cellular processes catabolic process other metabolic processes	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT2G35370	endoplasmic reticulum (GO:0005783)	comp	HDA	endoplasmic reticulum	Publication:501776792 PMID:28887381	NA 04/04/2019 00:00:00
	AT2G35370.1	mitochondrion (GO:0005739)	comp	ISM	mitochondrion	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT2G35370	mitochondrion (GO:0005739)	comp	TAS	mitochondrion	Publication:501682443	TAIR 06/13/2003 00:00:00
	AT2G35370.1	thylakoid (GO:0009579)	comp	HDA	thylakoid	Publication:501681963 PMID:11826309	NA 05/10/2021 00:00:00
	AT2G35370	glycine decarboxylation via glycine cleavage system	proc	TAS	catabolic process other	Publication:501682443	TAIR 06/13/2003

	(GO:0019464)			cellular processes other metabolic processes		00:00:00
	AT2G35370 glycine decarboxylation via glycine cleavage system (GO:0019464)	proc	IBA	other cellular processes other metabolic processes catabolic process	Communication:501741973	NA 11/23/2022 00:00:00
AT3G28960	AT3G28960 amino acid transmembrane transport (GO:0003333)	proc	IBA	transport other cellular processes	Communication:501741973	NA 06/07/2023 00:00:00
	AT3G28960 membrane (GO:0016020)	comp	IBA	other membranes	Communication:501741973	NA 06/07/2023 00:00:00
	AT3G28960 amino acid transmembrane transporter activity (GO:0015171)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00
	AT3G28960.4 mitochondrion (GO:0005739)	comp	ISM	mitochondrion	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT3G28960.1 plant-type vacuole (GO:0000325)	comp	HDA	vacuole	Publication:501720626 PMID:17151019	NA 05/12/2021 00:00:00
	AT3G28960 amino acid transmembrane transporter activity (GO:0015171)	func	ISS	transporter activity	Communication:1674994	TAIR 07/04/2007 00:00:00
AT4G01450	AT4G01450 transmembrane transporter activity (GO:0022857)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT4G01450 root development (GO:0048364)	proc	IEA	anatomical structure development multicellular organism development	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT4G01450 pattern specification process (GO:0007389)	proc	IEA	multicellular organism development	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT4G01450 oxoacid metabolic process (GO:0043436)	proc	IEA	other cellular processes other metabolic processes	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT4G01450 cell differentiation (GO:0030154)	proc	IEA	cell differentiation	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT4G01450 plasma membrane (GO:0005886)	comp	IBA	plasma membrane	Communication:501741973	NA 06/07/2023 00:00:00
	AT4G01450 tissue development (GO:0009888)	proc	IEA	anatomical structure development	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT4G01450 plant organ morphogenesis (GO:1905392)	proc	IEA	anatomical structure development multicellular organism development	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00

	AT4G01450	anatomical structure formation involved in morphogenesis (GO:0048646)	proc	IEA	anatomical structure development	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
AT2G37460	AT2G37460	pattern specification process (GO:0007389)	proc	IEA	multicellular organism development	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT2G37460	transmembrane transporter activity (GO:0022857)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT2G37460.1	cytoplasm (GO:0005737)	comp	ISM	cytoplasm	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT2G37460	regulation of primary metabolic process (GO:0080090)	proc	IEA	other metabolic processes	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT2G37460	plasma membrane (GO:0005886)	comp	IBA	plasma membrane	Communication:501741973	NA 06/07/2023 00:00:00
	AT2G37460	meristem maintenance (GO:0010073)	proc	IEA	anatomical structure development	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT2G37460	regulation of cellular biosynthetic process (GO:0031326)	proc	IEA	biosynthetic process other cellular processes other metabolic processes	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
AT5G64700	AT5G64700	transmembrane transporter activity (GO:0022857)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT5G64700	plasma membrane (GO:0005886)	comp	IBA	plasma membrane	Communication:501741973	NA 06/07/2023 00:00:00
	AT5G64700	DNA-templated transcription (GO:0006351)	proc	IEA	other metabolic processes biosynthetic process other cellular processes nucleobase-containing compound metabolic process	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G64700.1	extracellular region (GO:0005576)	comp	ISM	extracellular region	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT5G64700	regulation of multicellular organismal development (GO:2000026)	proc	IEA	multicellular organism development	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
AT1G77690	AT1G77690	auxin influx transmembrane transporter activity (GO:0010328)	func	IDA	transporter activity	Publication:501750478 PMID:22773749	TAIR 10/31/2012 00:00:00
	AT1G77690	response to auxin (GO:0009733)	proc	IDA	response to endogenous stimulus response to chemical	Publication:501729245 PMID:18622388	TAIR 12/11/2008 00:00:00

	AT1G77690	membrane (GO:0016020)	comp	IBA	other membranes	Communication:501741973	NA 06/07/2023 00:00:00
	AT1G77690	root cap development (GO:0048829)	proc	IGI	anatomical structure development multicellular organism development	Publication:501735806 PMID:19952011	TAIR 07/30/2010 00:00:00
	AT1G77690	amino acid transmembrane transporter activity (GO:0015171)	func	ISS	transporter activity	Communication:1674994	TAIR 07/04/2007 00:00:00
	AT1G77690	auxin influx transmembrane transporter activity (GO:0010328)	func	IDA	transporter activity	Publication:501729245 PMID:18622388	TAIR 12/10/2008 00:00:00
	AT1G77690	auxin import into cell (GO:0060919)	proc	IDA	transport	Publication:501750478 PMID:22773749	NA 04/01/2021 00:00:00
	AT1G77690	auxin polar transport (GO:0009926)	proc	IDA	transport	Publication:501729245 PMID:18622388	TAIR 12/10/2008 00:00:00
	AT1G77690	lateral root formation (GO:0010311)	proc	IGI	multicellular organism development anatomical structure development post-embryonic development	Publication:501729245 PMID:18622388	TAIR 12/11/2008 00:00:00
	AT1G77690	transmembrane transport (GO:0055085)	proc	IDA	other cellular processes transport	Publication:501750478 PMID:22773749	NA 04/01/2021 00:00:00
	AT1G77690	amino acid transmembrane transport (GO:0003333)	proc	IBA	transport other cellular processes	Communication:501741973	NA 06/07/2023 00:00:00
	AT1G77690	amino acid transmembrane transporter activity (GO:0015171)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00
	AT1G77690.1	plasma membrane (GO:0005886)	comp	ISM	plasma membrane	AnalysisReference:501780126	NA 08/31/2018 00:00:00
AT1G68570	AT1G68570	intracellular vesicle (GO:0097708)	comp	IDA	other intracellular components	Publication:501769185 PMID:27139299	TAIR 05/12/2016 00:00:00
	AT1G68570	transmembrane transport (GO:0055085)	proc	IEA	transport other cellular processes	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT1G68570.1	cytoplasm (GO:0005737)	comp	ISM	cytoplasm	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT1G68570	transmembrane transporter activity (GO:0022857)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT1G68570	transmembrane transporter activity (GO:0022857)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00
	AT1G68570	plasma membrane (GO:0005886)	comp	IBA	plasma membrane	Communication:501741973	NA 06/07/2023 00:00:00

	AT1G68570	transmembrane transport (GO:0055085)	proc	IBA	other cellular processes transport	Communication:501741973	NA 06/07/2023 00:00:00
	AT1G68570	gibberellic acid homeostasis (GO:0010336)	proc	IMP	other biological processes	Publication:501769185 PMID:27139299	TAIR 05/12/2016 00:00:00
	AT1G68570	plasma membrane (GO:0005886)	comp	IDA	plasma membrane	Publication:501769185 PMID:27139299	TAIR 05/12/2016 00:00:00
AT1G27040	AT1G27040	membrane (GO:0016020)	comp	IBA	other membranes	Communication:501741973	NA 06/07/2023 00:00:00
	AT1G27040	transmembrane transporter activity (GO:0022857)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT1G27040	transmembrane transport (GO:0055085)	proc	IEA	other cellular processes transport	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT1G27040.1	mitochondrion (GO:0005739)	comp	ISM	mitochondrion	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT1G27040	transmembrane transport (GO:0055085)	proc	IBA	transport other cellular processes	Communication:501741973	NA 06/07/2023 00:00:00
	AT1G27040	transmembrane transporter activity (GO:0022857)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00
	AT1G27040.2	mitochondrion (GO:0005739)	comp	ISM	mitochondrion	AnalysisReference:501780126	NA 08/31/2018 00:00:00
AT2G34960	AT2G34960	plasma membrane (GO:0005886)	comp	IBA	plasma membrane	Communication:501741973	NA 04/13/2023 00:00:00
	AT2G34960	plasma membrane (GO:0005886)	comp	IDA	plasma membrane	Publication:501713161 PMID:15377779	TAIR 12/05/2007 00:00:00
	AT2G34960	amino acid transport (GO:0006865)	proc	IBA	transport	Communication:501741973	NA 06/07/2023 00:00:00
	AT2G34960	L-lysine transmembrane transporter activity (GO:0015189)	func	IBA	transporter activity	Communication:501741973	NA 04/13/2023 00:00:00
	AT2G34960	L-glutamate transmembrane transporter activity (GO:0005313)	func	IGI	transporter activity	Publication:501713161 PMID:15377779	TAIR 12/05/2007 00:00:00
	AT2G34960	L-lysine transmembrane transporter activity (GO:0015189)	func	IGI	transporter activity	Publication:501713161 PMID:15377779	TAIR 12/05/2007 00:00:00
	AT2G34960	L-arginine import across plasma membrane (GO:0097638)	proc	IGI	other cellular processes transport	Publication:501713161 PMID:15377779	TAIR 12/21/2020 00:00:00
	AT2G34960	basic amino acid transmembrane transporter activity (GO:0015174)	func	ISS	transporter activity	Communication:1674994	TAIR 11/13/2014 00:00:00
	AT2G34960.1	mitochondrion (GO:0005739)	comp	ISM	mitochondrion	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT2G34960	transmembrane transporter activity (GO:0022857)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00

	AT2G34960	L-glutamate transmembrane transporter activity (GO:0005313)	func	IBA	transporter activity	Communication:501741973	NA 01/14/2023 00:00:00
	AT2G34960	transmembrane transport (GO:0055085)	proc	IEA	transport l other cellular processes	AnalysisReference:501756966	NA 09/23/2023 00:00:00
AT3G45710	AT3G45710	transmembrane transporter activity (GO:0022857)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00
	AT3G45710	chloride transmembrane transporter activity (GO:0015108)	func	IDA	transporter activity	Publication:501774148 PMID:28111585	TAIR 02/06/2017 00:00:00
	AT3G45710	oligopeptide transport (GO:0006857)	proc	IEA	transport	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT3G45710	plasma membrane (GO:0005886)	comp	IBA	plasma membrane	Communication:501741973	NA 06/07/2023 00:00:00
	AT3G45710	cellular response to salt (GO:1902075)	proc	IEP	response to chemical l other cellular processes	Publication:501774148 PMID:28111585	TAIR 02/06/2017 00:00:00
	AT3G45710	chloride transport (GO:0006821)	proc	IDA	transport	Publication:501774148 PMID:28111585	TAIR 02/06/2017 00:00:00
	AT3G45710	transmembrane transport (GO:0055085)	proc	IBA	other cellular processes l transport	Communication:501741973	NA 06/07/2023 00:00:00
AT4G31730	AT4G31730	glutamine secretion (GO:0010585)	proc	IMP	other cellular processes l transport	Publication:501712614 PMID:15208395	TAIR 08/22/2008 00:00:00
	AT4G31730	regulation of amino acid export (GO:0080143)	proc	IMP	transport l other cellular processes	Publication:501712614 PMID:15208395	NA 03/31/2021 00:00:00
	AT4G31730	membrane (GO:0016020)	comp	IDA	other membranes	Publication:501712614 PMID:15208395	NA 08/01/2016 00:00:00
	AT4G31730	membrane (GO:0016020)	comp	IDA	other membranes	Publication:501747251 PMID:22291198	NA 09/19/2022 00:00:00
	AT4G31730.1	nucleus (GO:0005634)	comp	HDA	nucleus	Publication:501711432 PMID:14617066	NA 04/22/2021 00:00:00
	AT4G31730	regulation of amino acid export (GO:0080143)	proc	IMP	transport l other cellular processes	Publication:501735673 PMID:20018597	NA 01/25/2010 00:00:00
	AT4G31730	protein binding (GO:0005515)	func	IPI	protein binding	Publication:501758446 PMID:24036454	NA 09/23/2023 00:00:00
	AT4G31730	protein binding (GO:0005515)	func	IPI	protein binding	Publication:501747251 PMID:22291198	NA 09/23/2023 00:00:00
AT5G63850	AT5G63850	transmembrane transport (GO:0055085)	proc	IDA	transport l other cellular processes	Publication:4347 PMID:7608199	NA 04/01/2021 00:00:00
	AT5G63850	amino acid transmembrane transporter activity (GO:0015171)	func	ISS	transporter activity	Communication:1674994	TAIR 07/04/2007 00:00:00
	AT5G63850	neutral L-amino acid transmembrane transporter	func	IDA	transporter activity	Publication:4347 PMID:7608199	TAIR 06/12/2006 00:00:00

	activity (GO:0015175)					
AT5G63850	amino acid transmembrane transport (GO:0003333)	proc	IBA	transport l other cellular processes	Communication:501741973	NA 06/07/2023 00:00:00
AT5G63850	primary active transmembrane transporter activity (GO:0015399)	func	IDA	transporter activity	Publication:4347 PMID:7608199	TAIR 06/12/2006 00:00:00
AT5G63850	amino acid transmembrane transporter activity (GO:0015171)	func	IBA	transporter activity	Communication:501741973	NA 06/07/2023 00:00:00
AT5G63850	amino acid transport (GO:0006865)	proc	TAS	transport	Publication:4347 PMID:7608199	TAIR 06/12/2006 00:00:00
AT5G63850.1	plasma membrane (GO:0005886)	comp	ISM	plasma membrane	AnalysisReference:501780126	NA 08/31/2018 00:00:00
AT5G63850	acidic amino acid transmembrane transporter activity (GO:0015172)	func	IDA	transporter activity	Publication:4347 PMID:7608199	TAIR 06/12/2006 00:00:00
AT5G63850	membrane (GO:0016020)	comp	IBA	other membranes	Communication:501741973	NA 06/07/2023 00:00:00
AT2G44040	AT2G44040.1	chloroplast (GO:0009507)	comp	ISM	chloroplast	AnalysisReference:501780126 NA 08/31/2018 00:00:00
	AT2G44040	lysine biosynthetic process via diaminopimelate (GO:0009089)	proc	IEA	other cellular processes l biosynthetic process l other metabolic processes	AnalysisReference:501757242 NA 09/23/2023 00:00:00
	AT2G44040	diaminopimelate biosynthetic process (GO:0019877)	proc	IBA	other cellular processes l other metabolic processes l biosynthetic process	Communication:501741973 NA 01/14/2023 00:00:00
	AT2G44040	cytosol (GO:0005829)	comp	HDA	cytosol	Publication:501761766 PMID:25293756 NA 04/04/2019 00:00:00
	AT2G44040.1	chloroplast (GO:0009507)	comp	HDA	chloroplast	Publication:501724486 PMID:18431481 NA 04/07/2021 00:00:00
	AT2G44040	4-hydroxy-tetrahydrodipicolinate reductase (GO:0008839)	func	IGI	catalytic activity	Publication:501714413 PMID:15652176 TAIR 08/18/2005 00:00:00
	AT2G44040.1	chloroplast stroma (GO:0009570)	comp	HDA	plastid l chloroplast	Publication:501735990 PMID:20061580 NA 04/07/2021 00:00:00
	AT2G44040	4-hydroxy-tetrahydrodipicolinate reductase (GO:0008839)	func	IBA	catalytic activity	Communication:501741973 NA 06/07/2023 00:00:00
	AT2G44040	chloroplast stroma (GO:0009570)	comp	IBA	plastid l chloroplast	Communication:501741973 NA 09/10/2021 00:00:00

	AT2G44040	NADPH binding (GO:0070402)	func	IEA	other binding nucleotide binding	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT2G44040	4-hydroxy-tetrahydrodipicolinate reductase (GO:0008839)	func	IDA	catalytic activity	Publication:501750431 PMID:22792278	NA 06/11/2016 00:00:00
AT4G37930	AT4G37930	glycine decarboxylation via glycine cleavage system (GO:0019464)	proc	IMP	other metabolic processes other cellular processes catabolic process	Publication:501678333	TAIR 12/09/2003 00:00:00
	AT4G37930	serine binding (GO:0070905)	func	IBA	other binding	Communication:501741973	NA 04/02/2021 00:00:00
	AT4G37930	plasma membrane (GO:0005886)	comp	HDA	plasma membrane	Publication:501776792 PMID:28887381	NA 04/04/2019 00:00:00
	AT4G37930	mitochondrion (GO:0005739)	comp	HDA	mitochondrion	Publication:501711651 PMID:14671022	NA 04/15/2021 00:00:00
	AT4G37930.1	nucleus (GO:0005634)	comp	HDA	nucleus	Publication:501711432 PMID:14617066	NA 04/22/2021 00:00:00
	AT4G37930	one-carbon metabolic process (GO:0006730)	proc	IBA	other cellular processes other metabolic processes	Communication:501741973	NA 06/07/2023 00:00:00
	AT4G37930.1	chloroplast stroma (GO:0009570)	comp	HDA	plastid chloroplast	Publication:501735990 PMID:20061580	NA 04/07/2021 00:00:00
	AT4G37930	cytoplasm (GO:0005737)	comp	IBA	cytoplasm	Communication:501741973	NA 06/07/2023 00:00:00
	AT4G37930	glycine biosynthetic process from serine (GO:0019264)	proc	IEA	biosynthetic process other metabolic processes other cellular processes	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT4G37930	circadian rhythm (GO:0007623)	proc	IEP	circadian rhythm	Publication:437 PMID:10806255	NA 03/31/2021 00:00:00
	AT4G37930.1	mitochondrion (GO:0005739)	comp	HDA	mitochondrion	Publication:501724621 PMID:18385124	NA 04/07/2021 00:00:00
	AT4G37930	glycine hydroxymethyltransferase activity (GO:0004372)	func	IDA	transferase activity	Publication:501746862 PMID:21976482	NA 04/01/2021 00:00:00
	AT4G37930	response to cold (GO:0009409)	proc	IEP	response to abiotic stimulus response to stress	Publication:501719694 PMID:16923014	TAIR 01/28/2008 00:00:00
	AT4G37930.1	apoplast (GO:0048046)	comp	HDA	extracellular region	Publication:501725189 PMID:18538804	NA 05/10/2021 00:00:00

AT4G37930	plant-type hypersensitive response (GO:0009626)	proc	TAS	response to external stimulus response to stress response to biotic stimulus cell death other cellular processes	Publication:501714626 PMID:15659103	TAIR 10/28/2005 00:00:00
AT4G37930	glycine hydroxymethyltransferase activity (GO:0004372)	func	TAS	transferase activity	Publication:3468 PMID:9232907	TAIR 02/10/2004 00:00:00
AT4G37930	glycine metabolic process (GO:0006544)	proc	IDA	other cellular processes other metabolic processes	Publication:501746862 PMID:21976482	NA 03/31/2021 00:00:00
AT4G37930	L-serine catabolic process (GO:0006565)	proc	IBA	other metabolic processes other cellular processes catabolic process	Communication:501741973	NA 06/07/2023 00:00:00
AT4G37930	folic acid metabolic process (GO:0046655)	proc	IBA	other metabolic processes other cellular processes	Communication:501741973	NA 03/31/2021 00:00:00
AT4G37930	L-serine metabolic process (GO:0006563)	proc	IDA	other metabolic processes other cellular processes	Publication:501746862 PMID:21976482	NA 03/31/2021 00:00:00
AT4G37930	poly(U) RNA binding (GO:0008266)	func	IDA	RNA binding	Publication:501721569 PMID:17511964	TAIR 01/28/2008 00:00:00
AT4G37930	mRNA binding (GO:0003729)	func	IDA	RNA binding	Publication:501789490 PMID:32344669	NA 05/16/2020 00:00:00
AT4G37930	photorespiration (GO:0009853)	proc	IMP	other metabolic processes other cellular processes	Publication:501721493 PMID:17400706	TAIR 01/28/2008 00:00:00
AT4G37930	glycine biosynthetic process from serine (GO:0019264)	proc	IBA	other metabolic processes biosynthetic process other cellular processes	Communication:501741973	NA 06/07/2023 00:00:00
AT4G37930	mitochondrion (GO:0005739)	comp	IDA	mitochondrion	Publication:501752986 PMID:23232097	NA 08/01/2016 00:00:00
AT4G37930	pyridoxal phosphate binding (GO:0030170)	func	IBA	other binding	Communication:501741973	NA 06/07/2023 00:00:00
AT4G37930	tetrahydrofolate metabolic process	proc	IBA	other cellular processes	Communication:501741973	NA 06/07/2023

	(GO:0046653)			other metabolic processes		00:00:00	
AT4G37930	cytosol (GO:0005829)	comp	HDA	cytosol	Publication:501761766 PMID:25293756	NA 04/04/2019 00:00:00	
AT4G37930	protein binding (GO:0005515)	func	IPI	protein binding	Publication:501752986 PMID:23232097	NA 09/23/2023 00:00:00	
AT4G37930	mitochondrion (GO:0005739)	comp	IDA	mitochondrion	Publication:501729835 PMID:19223513	NA 08/01/2016 00:00:00	
AT4G37930	zinc ion binding (GO:0008270)	func	IBA	other binding	Communication:501741973	NA 09/10/2021 00:00:00	
AT4G37930	mitochondrial matrix (GO:0005759)	comp	ISS	other intracellular components mitochondrion	Publication:437 PMID:10806255	TAIR 03/24/2003 00:00:00	
AT4G37930	protein binding (GO:0005515)	func	IPI	protein binding	Publication:501729835 PMID:19223513	NA 09/23/2023 00:00:00	
AT4G37930.1	chloroplast thylakoid (GO:0009534)	comp	HDA	thylakoid other intracellular components chloroplast plastid	Publication:501735990 PMID:20061580	NA 04/07/2021 00:00:00	
AT4G37930	tetrahydrofolate interconversion (GO:0035999)	proc	IEA	other metabolic processes other cellular processes	AnalysisReference:501757242	NA 09/23/2023 00:00:00	
AT4G37930	cytosol (GO:0005829)	comp	IDA	cytosol	Publication:501752986 PMID:23232097	NA 08/01/2016 00:00:00	
AT4G37930.1	cytosolic ribosome (GO:0022626)	comp	HDA	ribosome cytosol	Publication:501714975 PMID:15821981	NA 04/15/2021 00:00:00	
AT4G37930	photorespiration (GO:0009853)	proc	IMP	other metabolic processes other cellular processes	Publication:501718263 PMID:16339799	NA 03/31/2021 00:00:00	
AT4G37930	glycine hydroxymethyltransferase activity (GO:0004372)	func	IBA	transferase activity	Communication:501741973	NA 06/07/2023 00:00:00	
AT4G37930	pyridoxal phosphate binding (GO:0030170)	func	IEA	other binding	AnalysisReference:501756966	NA 09/23/2023 00:00:00	
AT4G37930	stromule (GO:0010319)	comp	IDA	other intracellular components plastid	Publication:501719694 PMID:16923014	TAIR 01/28/2008 00:00:00	
AT4G37930	response to light stimulus (GO:0009416)	proc	IEP	response to light stimulus	Publication:437 PMID:10806255	NA 03/31/2021 00:00:00	
AT5G38770	AT5G38770	cellular component unknown (GO:0005575)	comp	ND	unknown cellular components	Communication:1345790	TAIR 02/01/2022 00:00:00

	AT5G38770	regulation of amino acid export (GO:0080143)	proc	IMP	transport other cellular processes	Publication:501735673 PMID:20018597	NA 01/25/2010 00:00:00
	AT5G38770	molecular function unknown (GO:0003674)	func	ND	unknown molecular functions	Communication:1345790	TIGR 10/04/2003 00:00:00
AT5G17330	AT5G17330	cytosol (GO:0005829)	comp	IBA	cytosol	Communication:501741973	NA 04/13/2023 00:00:00
	AT5G17330	pyridoxal phosphate binding (GO:0030170)	func	IEA	other binding	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT5G17330	secondary metabolite biosynthetic process (GO:0044550)	proc	IEA	biosynthetic process secondary metabolic process	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	plant epidermis development (GO:0090558)	proc	IEA	anatomical structure development	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	glutamate metabolic process (GO:0006536)	proc	IEA	other metabolic processes other cellular processes	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT5G17330	defense response to other organism (GO:0098542)	proc	IEA	response to stress response to external stimulus response to biotic stimulus	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	aromatic compound biosynthetic process (GO:0019438)	proc	IEA	biosynthetic process other metabolic processes other cellular processes	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	glutamate decarboxylase activity (GO:0004351)	func	IBA	catalytic activity	Communication:501741973	NA 06/07/2023 00:00:00
	AT5G17330	response to inorganic substance (GO:0010035)	proc	IEA	response to chemical	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	oxoacid metabolic process (GO:0043436)	proc	IEA	other cellular processes other metabolic processes	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	calmodulin binding (GO:0005516)	func	TAS	protein binding	Publication:1546140 PMID:11782485	TIGR 04/17/2003 00:00:00
	AT5G17330	macromolecule metabolic process (GO:0043170)	proc	IEA	other metabolic processes	Publication:501796011 PMID:34562334	NA 01/08/2023 00:00:00
	AT5G17330	glutamate catabolic process (GO:0006538)	proc	IBA	other cellular processes catabolic process other metabolic processes	Communication:501741973	NA 03/31/2021 00:00:00

	AT5G17330	response to bacterium (GO:0009617)	proc	IEA	response to external stimulus response to biotic stimulus	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	root morphogenesis (GO:0010015)	proc	IEA	multicellular organism development anatomical structure development	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	cell differentiation (GO:0030154)	proc	IEA	cell differentiation	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	organic cyclic compound biosynthetic process (GO:1901362)	proc	IEA	other metabolic processes biosynthetic process	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	calmodulin binding (GO:0005516)	func	IDA	protein binding	Publication:2275 PMID:9700069	TAIR 10/04/2006 00:00:00
	AT5G17330	response to organic cyclic compound (GO:0014070)	proc	IEA	response to chemical	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	cell wall organization or biogenesis (GO:0071554)	proc	IEA	other cellular processes	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
	AT5G17330	glutamate decarboxylase activity (GO:0004351)	func	IDA	catalytic activity	Publication:2275 PMID:9700069	TAIR 04/29/2003 00:00:00
AT2G43100	AT2G43100	3-isopropylmalate dehydratase activity (GO:0003861)	func	IDA	catalytic activity	Publication:501738361 PMID:20663849	NA 04/01/2021 00:00:00
	AT2G43100	glucosinolate biosynthetic process (GO:0019761)	proc	IMP	other cellular processes secondary metabolic process other metabolic processes biosynthetic process	Publication:501738361 PMID:20663849	NA 03/31/2021 00:00:00
	AT2G43100	plastid (GO:0009536)	comp	IDA	plastid	Publication:501730495 PMID:19542295	TAIR 09/08/2009 00:00:00
	AT2G43100	leucine biosynthetic process (GO:0009098)	proc	IEA	biosynthetic process other cellular processes other metabolic processes	AnalysisReference:501757242	NA 09/23/2023 00:00:00
	AT2G43100	plastid (GO:0009536)	comp	IDA	plastid	Publication:501790244 PMID:32612621	TAIR 07/18/2020 00:00:00
	AT2G43100	chloroplast stroma (GO:0009570)	comp	IDA	chloroplast plastid	Publication:501738361 PMID:20663849	NA 08/01/2016 00:00:00
	AT2G43100.1	chloroplast (GO:0009507)	comp	ISM	chloroplast	AnalysisReference:501780126	NA 08/31/2018

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AT1G77990	AT1G77990	secondary active sulfate transmembrane transporter activity (GO:0008271)	func	IEA	transporter activity	AnalysisReference:501756966	NA 09/23/2023 00:00:00
	AT1G77990	sulfate transmembrane transport (GO:1902358)	proc	IGI	other cellular processes / transport	Publication:176 PMID:10929111	TAIR 10/21/2016 00:00:00
	AT1G77990	sulfate transmembrane transporter activity (GO:0015116)	func	IGI	transporter activity	Publication:176 PMID:10929111	TAIR 10/21/2016 00:00:00
	AT1G77990	sulfate transmembrane transporter activity (GO:0015116)	func	ISS	transporter activity	Communication:1674994	TAIR 03/29/2003 00:00:00
	AT1G77990.1	chloroplast (GO:0009507)	comp	ISM	chloroplast	AnalysisReference:501780126	NA 08/31/2018 00:00:00
AT1G69870	AT1G69870	plasma membrane (GO:0005886)	comp	IDA	plasma membrane	Publication:501734869 PMID:19734434	TAIR 10/14/2009 00:00:00
	AT1G69870	nitrate transmembrane transport (GO:0015706)	proc	IDA	transport	Publication:501734869 PMID:19734434	TAIR 10/17/2017 00:00:00
	AT1G69870	low-affinity nitrate transmembrane transporter activity (GO:0080054)	func	IDA	transporter activity	Publication:501734869 PMID:19734434	TAIR 10/14/2009 00:00:00
	AT1G69870	plasma membrane (GO:0005886)	comp	IBA	plasma membrane	Communication:501741973	NA 06/07/2023 00:00:00
	AT1G69870.1	plasma membrane (GO:0005886)	comp	HDA	plasma membrane	Publication:501710480 PMID:14506206	NA 04/12/2021 00:00:00
	AT1G69870	transmembrane transport (GO:0055085)	proc	IBA	transport / other cellular processes	Communication:501741973	NA 06/07/2023 00:00:00
	AT1G69870	nitrate transmembrane transport (GO:0015706)	proc	IMP	transport	Publication:501734869 PMID:19734434	TAIR 10/14/2009 00:00:00
	AT1G69870.1	chloroplast (GO:0009507)	comp	ISM	chloroplast	AnalysisReference:501780126	NA 08/31/2018 00:00:00
AT5G24920	AT5G24920	molecular function unknown (GO:0003674)	func	ND	unknown molecular functions	Communication:1345790	TIGR 10/04/2003 00:00:00
	AT5G24920	regulation of amino acid export (GO:0080143)	proc	IMP	other cellular processes / transport	Publication:501735673 PMID:20018597	NA 01/25/2010 00:00:00
	AT5G24920	cellular component unknown (GO:0005575)	comp	ND	unknown cellular components	Communication:1345790	TAIR 08/08/2023 00:00:00
AT1G09812	AT1G09812.1	nucleus (GO:0005634)	comp	ISM	nucleus	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT1G09812	molecular function unknown (GO:0003674)	func	ND	unknown molecular functions	Communication:1345790	TIGR 10/04/2003 00:00:00

	AT1G09812	regionalization (GO:0003002)	proc	IEA	multicellular organism development	Publication:501796011 PMID:34562334	NA 11/14/2022 00:00:00
AT5G54810	AT5G54810	tryptophan biosynthetic process (GO:0000162)	proc	IBA	other cellular processes biosynthetic process other metabolic processes	Communication:501741973	NA 06/07/2023 00:00:00
	AT5G54810	plasma membrane (GO:0005886)	comp	HDA	plasma membrane	Publication:501750648 PMID:22923678	NA 04/07/2021 00:00:00
	AT5G54810	tryptophan synthase activity (GO:0004834)	func	IMP	catalytic activity catalytic activity	Publication:5545 PMID:1840915	TAIR 02/10/2004 00:00:00
	AT5G54810.1	chloroplast stroma (GO:0009570)	comp	HDA	plastid chloroplast	Publication:501735990 PMID:20061580	NA 04/07/2021 00:00:00
	AT5G54810	tryptophan synthase activity (GO:0004834)	func	IDA	catalytic activity	Publication:5545 PMID:1840915	TAIR 10/25/2004 00:00:00
	AT5G54810	indoleacetic acid biosynthetic process (GO:0009684)	proc	TAS	other metabolic processes other cellular processes biosynthetic process	Publication:5057 PMID:8234297	TAIR 10/25/2004 00:00:00
	AT5G54810	tryptophan biosynthetic process (GO:0000162)	proc	IEA	other metabolic processes biosynthetic process other cellular processes	AnalysisReference:501757242	NA 09/23/2023 00:00:00
	AT5G54810.1	chloroplast (GO:0009507)	comp	ISM	chloroplast	AnalysisReference:501780126	NA 08/31/2018 00:00:00
	AT5G54810	cytoplasm (GO:0005737)	comp	IBA	cytoplasm	Communication:501741973	NA 06/07/2023 00:00:00
	AT5G54810.1	chloroplast (GO:0009507)	comp	HDA	chloroplast	Publication:501724486 PMID:18431481	NA 04/07/2021 00:00:00
	AT5G54810.1	chloroplast stroma (GO:0009570)	comp	HDA	chloroplast plastid	Publication:501727324 PMID:18633119	NA 04/07/2021 00:00:00
	AT5G54810	response to oxidative stress (GO:0006979)	proc	IEP	response to stress	Publication:2678 PMID:9501110	NA 06/16/2006 00:00:00
	AT5G54810	chloroplast (GO:0009507)	comp	HDA	chloroplast	Publication:501761766 PMID:25293756	NA 04/04/2019 00:00:00
	AT5G54810	tryptophan biosynthetic process (GO:0000162)	proc	TAS	biosynthetic process other metabolic processes other cellular processes	Publication:5682 PMID:2734310	TIGR 04/17/2003 00:00:00
	AT5G54810	chloroplast (GO:0009507)	comp	ISS	chloroplast	Publication:5545 PMID:1840915	TAIR 03/24/2003



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