

**Table S2. List of genes used for phylogenetic analysis of PARP1/2/3 subfamily in PARP family.**

Species name	Gene name	Protein id	Gene pacid	Database
<i>Arabidopsis thaliana</i>	PARP3	AT5G22470.1	19672134	Phytozome
<i>Capsella rubella</i>	PARP3	Carubv10002547m	20910465	Phytozome
<i>Brassica rapa</i> Fpsc	PARP3	Brara.J01467.1.p	30613201	Phytozome
<i>Carica papaya</i>	PARP3	evm.model.supercontig_32.96	16417480	Phytozome
<i>Theobroma cacao</i>	PARP3	Thecc1EG041443t1	27427780	Phytozome
<i>Glycine max</i>	PARP3	Glyma.12G088300.1.p	30548414	Phytozome
<i>Glycine max</i>	PARP3	Glyma.11G184100.1.p	30529013	Phytozome
<i>Phaseolus vulgaris</i>	PARP3	Phvu.1011G093100.1.p	37156572	Phytozome
<i>Medicago truncatula</i>	PARP3	Medtr4g053530.1	31107311	Phytozome
<i>Cucumis sativus</i>	PARP3	Cucsa.385080.1	16982517	Phytozome
<i>Vitis vinifera</i>	PARP3	GSVIVT01036149001	17841171	Phytozome
<i>Nelumbo nucifera</i>		NNU_16940-RA, 016940		<a href="http://lotus-db.wbgcas.cn">http://lotus-db.wbgcas.cn</a>
<i>Mimulus guttatus</i>	PARP3	Migut.D02355.1.p	28927533	Phytozome
<i>Solanum tuberosum</i>	PARP3	PGSC0003DMP400013102	37467110	Phytozome
<i>Populus trichocarpa</i>	PARP3	Potri.004G184100.1.p	37232163	Phytozome
<i>Oryza sativa</i>	PARP3	LOC_Os02g32860.1	33139988	Phytozome
<i>Sorghum bicolor</i>	PARP3	Sobic.004G164800.1.p	32746215	Phytozome
<i>Picea abies</i>		125674g0010		ConGenIE
<i>Ginkgo biloba</i>		02125		GigaDB
<i>Selaginella moellendorffii</i>	PARP3	73333	15406099	Phytozome
<i>Physcomitrella patens</i>	PARP3	Pp3c1_22640V3.1.p	32971758	Phytozome
<i>Homo sapiens</i>	PARP1	ENST00000366794.9		Ensembl
<i>Mus musculus</i>	PARP1	ENSMUST00000027777.11		Ensembl
<i>Drosophila melanogaster</i>	PARP	FBr0113885		Ensembl
<i>Caenorhabditis elegans</i>	PARP1	Y71F9AL.18a		Ensembl
<i>Mycena alexandri</i>	PARP	1092715		MycCosm
<i>Mycena alexandri</i>	PARP	1127241		MycCosm
<i>Sarcoscypha coccinea</i>	PARP	423918		MycCosm
<i>Sarcoscypha coccinea</i>	PARP	510097		MycCosm
<i>Homo sapiens</i>	PARP2	ENST00000250416.9		Ensembl
<i>Mus musculus</i>	PARP2	ENSMUST00000036126.5		Ensembl
<i>Homo sapiens</i>	PARP3	ENST00000398755.7		Ensembl
<i>Mus musculus</i>	PARP3	ENSMUST00000112479.8		Ensembl
<i>Caenorhabditis elegans</i>	PARP2	E02H1.4		Ensembl
<i>Caenorhabditis elegans</i>	TANK-1/PARP5	ZK1005.1a		Ensembl