

**Supplementary Table S1.** PHB1 homologous proteins genebank accession numbers

Species	Order/Phylum	Accession numbers	Protein identity
<i>Homo sapiens</i>	Mammalia/Vertebrata	AAB21614.1	73.3%
<i>Bos taurus</i>	Mammalia/Vertebrata	NP_001029744.1	73.3%
<i>Mus musculus</i>	Mammalia/Vertebrata	NP_032857.1	73.6%
<i>Gallus gallus</i>	Aves/Vertebrata	NP_001171206.1	74%
<i>Anas platyrhynchos</i>	Aves/Vertebrata	XP_005026195.1	73.6%
<i>Manacus vitellinus</i>	Aves/Vertebrata	XP_017943376.1	74%
<i>Pseudonaja textilis</i>	Reptile/Vertebrata	XP_026566590.1	73.6%
<i>Python bivittatus</i>	Reptile/Vertebrata	XP_007428971.1	74%
<i>Cynops orientalis</i>	Amphibia/Vertebrata	AJF36071.1	74.7%
<i>Xenopus tropicalis</i>	Amphibia/Vertebrata	NP_001079486.1	72.9%
<i>Danio rerio</i>	Pisces/Vertebrata	NP_958454.1	74.0%
<i>Salmo salar</i>	Pisces/Vertebrata	NP_001133602.1	73.6%
<i>Larimichthys crocea</i>	Pisces/Vertebrata	MG712297	74.4%
<i>Procambarus clarkii</i>	Malacostraca/Arthropoda	AGU02225.1	66.3%
<i>Eriocheir sinensis</i>	Crustacea/Arthropoda	ADM64319.1	66.3%
<i>Octopus tankahkei</i>	Cephalopoda /Mollusca	AEI91930.1	-
<i>Octopus bimaculoides</i>	Cephalopoda /Mollusca	KOF98822.1	95.2%
<i>Phascolosoma esculenta</i>	Phascolosomatidea/Sipuncula	KY807538	73.6%
<i>Helobdella robusta</i>	<u>Clitellata</u> /Annelida	ESO02205.1	70.7%
<i>Caenorhabditis elegans</i>	Secernentea/Nematoda	NP_490929.1	69.6%
<i>Clonorchis sinensis</i>	Trematoda/Platyhelminthes	AAY32923.1	67.9%
<i>Schistosoma bovis</i>	Trematoda/Platyhelminthes	RTG85735.1	70.1%

**Supplementary Table S2.** PHB2 homologous proteins genebank accession numbers

Species	Order/Phylum	Accession numbers	Protein identity
<i>Homo sapiens</i>	Mammalia/Vertebrata	AAI10323.1	71.3%
<i>Bos taurus</i>	Mammalia/Vertebrata	NP_001039663.1	71.3%
<i>Mus musculus</i>	Mammalia/Vertebrata	NM_007531.2	71.3%
<i>Gallus gallus</i>	Aves/Vertebrata	NP_001074354.1	69.5%
<i>Trichinella nativa</i>	Enoplea/Nematoda	KRZ54536.1	69.1%
<i>Trichinella papuae</i>	Enoplea/Nematoda	KRZ69524.1	68.8%
<i>Pseudonaja textilis</i>	Reptile/Vertebrata	XP_026569140.1	69.2%
<i>Python bivittatus</i>	Reptile/Vertebrata	XP_007420472.1	68.9%
<i>Sepiella japonica</i>	Cephalopoda/Mollusca	APX42718.1	85.2%
<i>Xenopus tropicalis</i>	Amphibia/Vertebrata	AAI57772.1	70.2%
<i>Danio rerio</i>	Pisces/Vertebrata	AAH59510.1	65.8%
<i>Salmo salar</i>	Pisces/Vertebrata	ACI69259.1	65.5%
<i>Cryptotermes secundus</i>	Hexapoda/Arthropoda	PNF39567.1	76.8%
<i>Trichogramma pretiosum</i>	Hexapoda/Arthropoda	XP_014230069.1	75.3%
<i>Octopus bimaculoides</i>	Cephalopoda /Mollusca	XP_014771498.1	97%
<i>Parus major</i>	Euteleostomi/Vertebrata	XP_015492179.1	70.3%
<i>Drosophila melanogaster</i>	Hexapoda/Arthropoda	AAF57632.3	71.6%
<i>Pseudopodoces humilis</i>	Euteleostomi/Vertebrata	XP_005523876.1	70.3%
<i>Thamnophis sirtalis</i>	Euteleostomi/Vertebrata	XP_013927073.1	69.7%
<i>Nanorana parkeri</i>	Amphibia/Vertebrata	XP_018408683.1	63.9%
<i>Copidosoma floridanum</i>	Insecta/Arthropoda	XP_014218664.1	75.2%