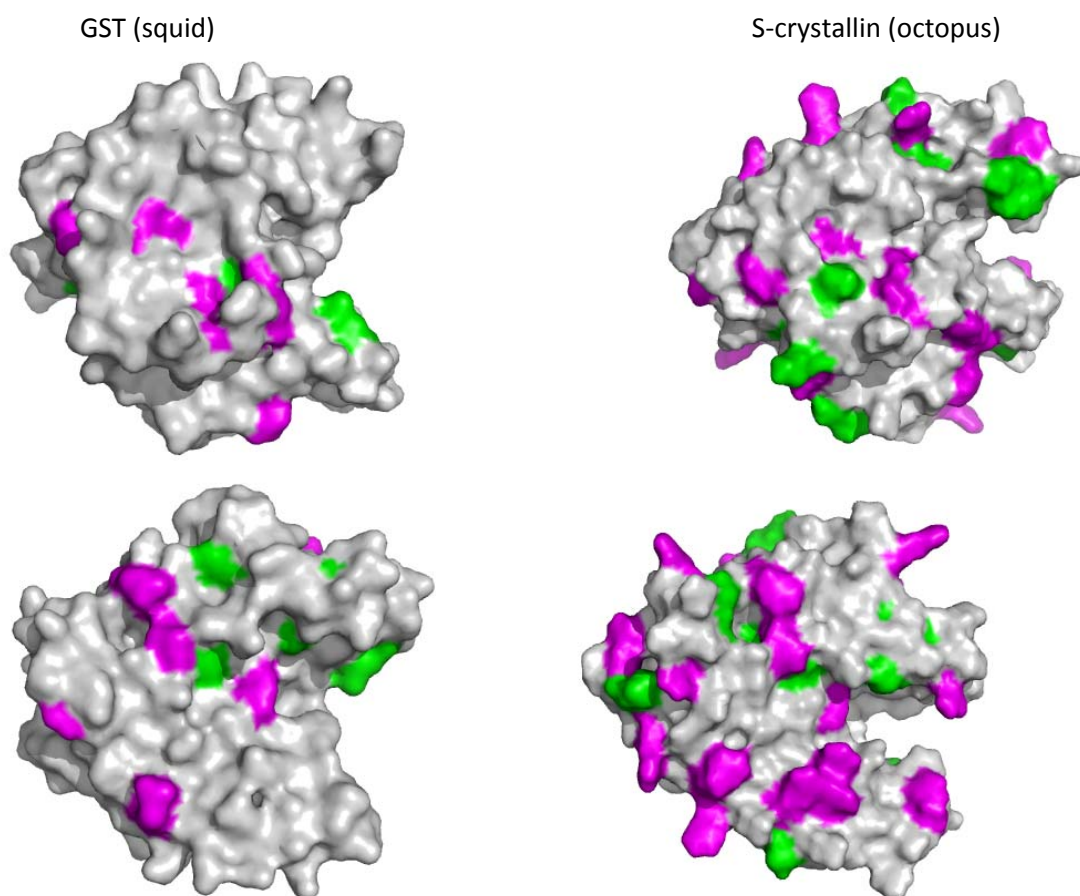


Supplementary Information

Supplementary Table 1: gamma crystallins of several fish, frog, newt, and lizard

protein	accession number	dn/dc (ml/g)
gamma-crystallin M15 (spotted green puffer fish)	CAF93847	0.2042
gamma-crystallin S1 (spotted green puffer fish)	CAG02609	0.1994
gamma-crystallin S2 (spotted green puffer fish)	CAG02610	0.2003
gamma-crystallin M3 (spotted green puffer fish)	CAG02611	0.1991
gamma-crystallin M5 (spotted green puffer fish)	CAG02612	0.1972
gamma-crystallin M11 (spotted green puffer fish)	CAG02613	0.1976
gamma-crystallin M10 (spotted green puffer fish)	CAG02614	0.1999
gamma-crystallin M12 (spotted green puffer fish)	CAG02615	0.2009
gamma-crystallin M13(spotted green puffer fish)	CAG02616	0.1996
gamma-crystallin M9 (spotted green puffer fish)	CAG02617	0.2010
gamma-crystallin M1 (spotted green puffer fish)	CAG02618	0.2016
gamma-crystallin S3 (spotted green puffer fish)	CAG02620	0.2023
gamma-crystallin M2 (spotted green puffer fish)	CAG08130	0.2001
gamma-crystallin M14 (spotted green puffer fish)	CAG06606	0.2011
gamma-crystallin N (spotted green puffer fish)	CAG05337	0.1999
gamma-crystallin M1 (carp)	CAA31387	0.2038
gamma-crystallin M2 (carp)	CAA31388	0.2062
gamma-crystallin M3 (carp)	CAA39414	0.2019
gamma-crystallin M2-1 (catfish)	CAA54810	0.2070
gamma-crystallin M2-1 (catfish)	CAA54811	0.2054
gamma-crystallin S1 (catfish)	CAA57214	0.2069
gamma-crystallin S2 (catfish)	CAA57215	0.2050
gamma-crystallin N (lizard)	AAL40970	0.2006
gamma-crystallin S (lizard)	AAV54036	0.1997
gamma-crystallin 2 (newt)	BAE47571	0.2031
gamma-crystallin 1 (newt)	BAB85813	0.2033
gamma-crystallin 3 (frog)	AAA99923	0.2050
gamma-crystallin 5 (frog)	AAH87384	0.2060
gamma-crystallin B (frog)	NP_001080636	0.2058
gamma-crystallin 2 (frog)	NP_001087368	0.2039
gamma-crystallin 1 (frog)	NP_001087309	0.2057
gamma-crystallin 4 (frog)	NP_001087344	0.2051
gamma-crystallin S1 (toothfish)	ABA61348	0.2018
gamma-crystallin S2 (toothfish)	ABA61349	0.2000
gamma-crystallin M1 (toothfish)	ABA61350	0.2005
gamma-crystallin M2b (toothfish)	ABA61351	0.2005
gamma-crystallin M2c (toothfish)	ABA61352	0.2003
gamma-crystallin M5a (toothfish)	ABA61353	0.1971

gamma-crystallin M5b (toothfish)	ABA61354	0.1988
gamma-crystallin M5c (toothfish)	ABA61355	0.1960
gamma-crystallin M7 (toothfish)	ABA61356	0.1988
gamma-crystallin M8b (toothfish)	ABA61357	0.2001
gamma-crystallin M8c (toothfish)	ABA61358	0.2001
gamma-crystallin M8d (toothfish)	ABA61359	0.1993
beta gamma-crystallin M8a (toothfish)	ABB59450	0.2001
gamma-crystallin N (toothfish)	ABV80231	0.1988

Supplemental Figure 1

Surface representation viewed from two opposite angles of squid GST (1GSQ) and a modeled structure of octopus S-crystallin OctS3 (reported in Chuang, C. C., S. H. Wu, et al. (1999). "Homology modeling of cephalopod lens S-crystallin: a natural mutant of sigma-class glutathione transferase with diminished endogenous activity." *Biophys J* **76**(2): 679-90; structure kindly provided by Dr. G. G. Chang). Highlighted residues are arginine (magenta) and methionine (green).