Fig. S1. Multiple sequence alignment of Lck-SH2. (A) Partial amino acid sequences of Lck-SH2 orthologs containing the lipid binding basic residues. All orthologs from KEGG Orthology database are shown. Lipid binding residues are highlighted by green boxes. Multiple sequence alignment was preformed by CLUSTAL 2.0.10. (B) The species lists for Lck-SH2. The most ancient species is *Callorhinchus milii* (Australian ghostshark). Since the sequence identity of SH2 domains is very high and SH2 domains are quite short, the phylogenetic tree based on the alignment is not meaningful and thus not performed. All known orthologs have basic residues at 182 and 184 for Lck-SH2.

**Fig S1A. LCK SH2 domain partial sequences**

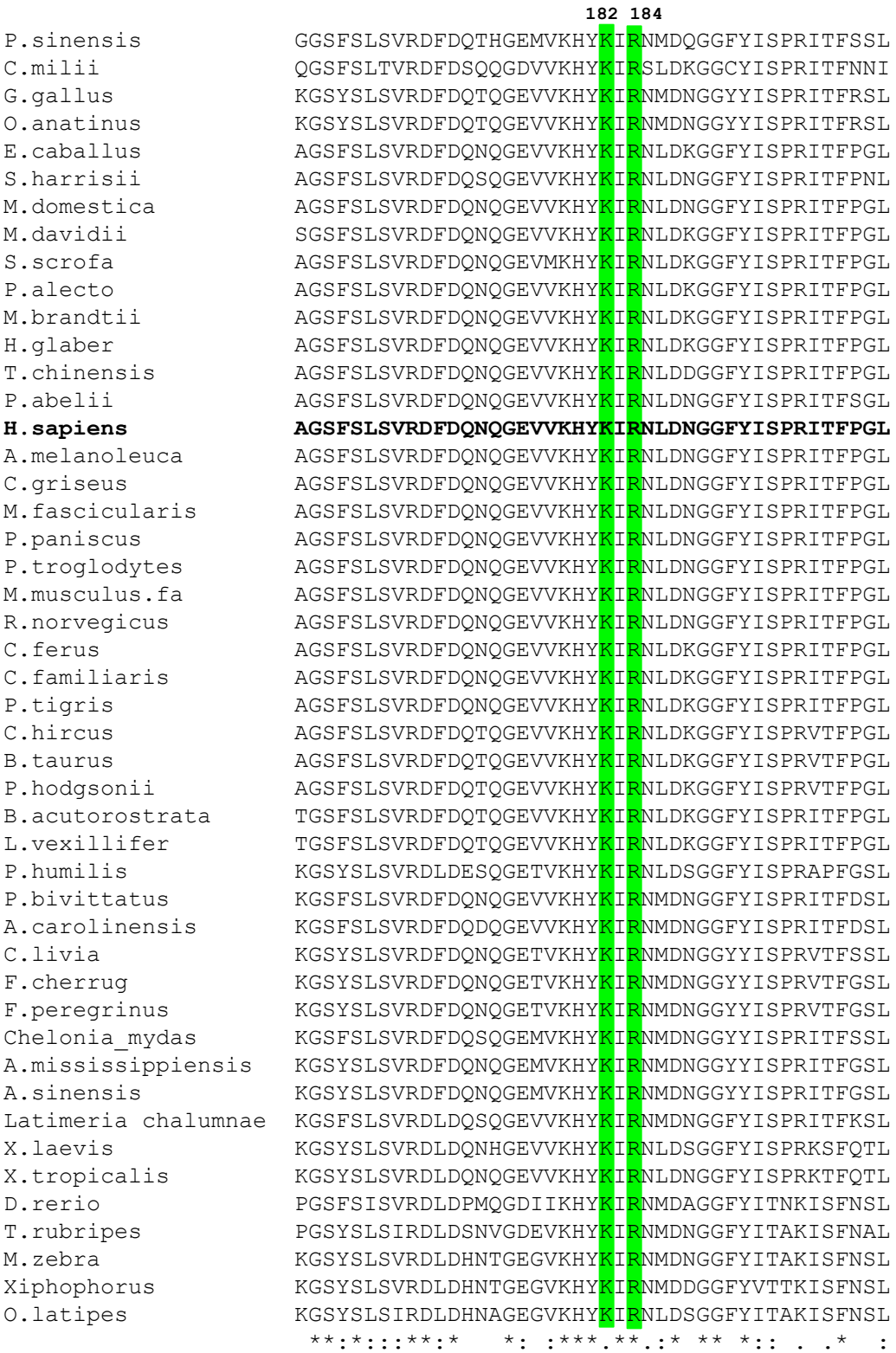

**Fig S1B. LCK Species List:**

| | |
|---|---|
| Ailuropoda melanoleuca | (panda) |
| Alligator mississippiensis | |
| Alligator sinensis | |
| Anolis carolinensis | Carolina anole (lizard) |
| Balaenoptera acutorostrata | Minke whale |
| Bos taurus | |
| Callorhinchus milii | (Australian ghostshark) |
| Camelus ferus | |
| Canis familiaris | |
| Capra hircus | |
| Chelonia mydas | (Green sea turtle) |
| Columba livia | |
| Cricetulus griseus | (Chinese hamster) |
| Danio rerio | (fish) |
| Equus caballus | |
| Falco cherrug | |
| Falco peregrinus | |
| Gallus gallus | |
| Heterocephalus glaber | (Naked mole rat) |
| Homo sapiens | |
| Latimeria chalumnae | (African coelacanth, related to lungfish) |
| Lipotes vexillifer | Chinese river dolphin |
| Macaca fascicularis | |
| Maylandia zebra | |
| Monodelphis domestica | (Opossum) |
| Mus musculus | |
| Myotis brandtii | (Bat) |
| Myotis davidii | (Bat) |
| Ornithorhynchus anatinus | (platypus) |
| Oryzias latipes | (Japanese ricefish) |
| Pahtholops hodgsonii | (Tibetan antelope) |
| Pan paniscus | |
| Panthera tigris | |
| Pan troglodytes | |
| Pelodiscus sinensis | (Chinese softshell turtle) |
| Pongo abelii | |
| Pseudopodoces humilis | |
| Pteropus alecto | (Black flying fox) |
| Python bivittatus | |
| Rattus norvegicus | |
| Sarcophilus harrisii | (Tasmanian devil) |
| Sus scrofa | (pig) |
| Takifugu rubripes | (Pufferfish) |
| Tupaia chinensis | (treeshrew) |
| Xenopus laevis | |
| Xenopus tropicalis | |
| Xiphophorus maculatus | (Southern platyfish) |