

**Figure S1.** List of amino acid sequences of the 3 animals (*Saccharomyces cerevisiae*, *Homo sapiens* and *Crassostrea gigas*) collected during the identification of the autophagy proteins in *C. gigas*. All sequences are in FASTA format. The specie name of the sequence is highlighted in yellow.

**Figure S2.** List of amino acid sequences of the species used to performed phylogeny analysis of ATG7, ATG9A, ATG12 and ULK2. All sequences are in FASTA format. The specie name of the sequence is highlighted in yellow.