**Database search strategy**

An electronic search of the PubMed database was completed with the inclusion criteria: studies that discussed the relationship between alternative splicing and autophagy and mitophagy. English language and full-text articles published from inception to July 1, 2019 were selected as reference sources in this review. Firstly, the retrieving condition was conducted as follows: SCI (MeSH Terms) AND Alternative Splicing (MeSH Terms) AND Autophagy (MeSH Terms) OR Mitophagy (MeSH Terms). The titles, keywords and abstracts were further screened to narrow the range of articles that need be read in detail. The types of diseases and animal models were not limited. Subsequent searches were completed using the following terms: ATG (autophagy-related) genes, isoforms and alternative splicing. Concurrently the associations between some specific ATG genes which were crucial and widely studied and alternative splicing were searched, e.g., BECN1 and alternative splicing. Then, Alternative Splicing (MeSH Terms) mentioned above were replaced by mRNA splicing to be retrieved again. In addition, the reference lists of included studies were also screened to find more potentially relevant research.