The triangle barnacle *Balanus trigonus* Darwin, 1854, a cosmopolitan inhabitant of tropical and warm temperate seas, is a member of robust system for the study of evolutionary processes in the intertidal zone. The first mitochondrial genome of *B. trigonus* is presented. The complete mitochondrial genome of *B. trigonus* is a circular molecule of 15,560 bp, which encodes 13 protein-coding genes (PCGs), 2 rRNA genes, and 22 tRNA genes. In comparison within Sessilia, the arrangement of the mitochondrial genome of *B. trigonus* is more similar to *Megabalanus* spp. than the congener *Balanus balanus*, which share a same inversion of a large gene block (*P*-nd4L-nd4-H-nd5-F). Phylogenetic analysis based on mitochondrial PCGs reveals that *B. trigonus* clusters with *Acasta Sulcata* (BP = 100), then grouped with *Megabalanus volcano* and *Megabalanus ajax* with high support (BP = 90). In further, more data and research are needed to reveal the phylogeny within Cirripedia.
Archaeobalanidae cluster together as previous studies revealed (Cai et al. 2018; Tian et al. 2020; Mao et al. 2020; Song et al. 2020).

In this study, we report the first mitochondrial genome of \textit{B. trigonus}, which have enriched resources of species within Cirripedia, that provides data support for the phylogeny of Cirripedia.

**Disclosure statement**

No potential conflict of interest was reported by the author(s).

**Funding**

This work was supported by the Nature Science Foundation of Jiangsu Province [No. BK20190048], the Natural Nature Science Foundation of China [NSFC No. 41876147], the Natural Science Research Program for Higher Education in Jiangsu Province [19KJB170011], and also funded by the Jiangsu Priority Academic Program Development (PAPD), Postgraduate graduate Research & Practice Innovation Programs [KYCX20_2880 & KYCX19_2291], Jiangsu Six Talent Peaks and the Lianyungang 521 Talent Projects.

**Data availability statement**

The genome sequence data that support the findings of this study are openly available in GenBank of NCBI at (https://www.ncbi.nlm.nih.gov/) under the accession no. MW646099.

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