

Advance in chromosomal evolution in sea cradles

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This is a live image of the studied sea cradle. Credit: Gaetano Odierna

A chromosomal study performed in a common Mediterranean chiton

(sea cradle) provides information, relevant to systematic relationships of the species; furthermore the comparison of its karyotype with ones in literature allows the authors to put forward a hypothesis on chromosome evolution of this group of mollusks. The study was published in the open access journal *Comparative Cytogenetics*.

The study of chromosome changes arisen during [species evolution](#) is a current and intriguing topic that [evolutionary biology](#) proposes. However, in several groups (for example, molluscs), and [chitons](#) in particular, chromosome studies are scarce, with a few species investigated and analyses performed mostly with simple methods.

Only 2,5% of about 900 living species of chitons have been so far karyologically investigated, all of them in the same order (Chitonida). The authors note that the species of suborder Chitonina all have a [karyotype](#) of $2n=24$ [chromosomes, all biarmed, that is metacentric or submetacentric](#). The species studied by the authors, formerly included in Chitonida, also possesses $2n=24$ elements, but many are unarmed and, therefore, resembling to the chromosome complement of species of the suborder Acanthochitonina. This provides support to recent attribution of the studied sea cradle to the latter suborder.

Furthermore, the comparison among the karyotypes of the suborder Acanthochitonina allows the authors to propose that in this group of chromosome changes mainly occurred by fusion among [unarmed elements](#). This kind of change is that mainly involved in [chromosome animal evolution](#). The study was published in the open access journal *Comparative Cytogenetics*.

More information: Petraccioli A, Maio N, Odierna G (2012) Chromosomes of *Lepidochitona caprearum* (Scacchi, 1836) (Polyplacophora, Acanthochitonina, Tonicellidae) provide insights into Acanthochitonina karyological evolution. *Comparative Cytogenetics* 6(4):

397. [doi: 10.3897/CompCytogen.v6i4.3722](https://doi.org/10.3897/CompCytogen.v6i4.3722)

Odierma G, Aprea G, Barucca M, Biscotti M, Canapa A, Capriglione T, Olmo E (2008) Karyology of the Antarctic chiton *Nuttallochiton mirandus* (Thiele, 1906) (Mollusca: Polyplacophora) with some considerations on chromosome evolution in chitons. *Chromosome Research* 16: 899. [doi: 10.1007/s10577-008-1247-1](https://doi.org/10.1007/s10577-008-1247-1)

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