Lower Jurassic calcareous nannofossils from the Neuquén Basin, Argentina: New insights on the opening of the Hispanic Corridor

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The existence of a marine connection between the Tethys and Panthalassa Oceans has been a topic of debate for a long time. Ziegler (1971) first proposed the existence of a seaway (the Hispanic Corridor) in the Early Jurassic, but the precise timing of its opening is still undefined. Consensus set the Early Pliensbachian as the age of this event, but most studies were conducted on macrofossils or nectonic organisms, without using any microfossil data (Bown, 1992; Boomer & Ballent, 1996; Arias, 2007; Angelozzi & Pérez Panera, 2016; Martínez & Olivera, 2016) or isotopes (van de Schootbrugge et al., 2005; Dera et al., 2014). With regard to nannofossils, the western Tethys (Europe and North Africa) is the classic region that has been studied in detail to interpret palaeogeographic changes in the Lower Jurassic. A sporadic coccolith record has been documented from the Southern Hemisphere (Pacific Realm), and we present a detailed report on calcareous nannofossils from this area. The Matuasto I section (Los Molles Formation, Neuquén Basin), which can be dated as Early Pliensbachian (~190 Ma), between the base of *Similiscutum* and the base of *Biscutum grande*, yielded an assemblage with abundant typically-Tethyan taxa, such as *Mitrolithus lenticularis* and *Schizosphaerella punctulata*. The occurrence of these species was sporadic in the northern Tethys, but they were common in its southern part (Bown, 1987) and in the proto-Atlantic region (Portugal and Morocco). There may have been a connection between the Tethys and Panthalassa Oceans at that time because nannoplankton need a well-established active current system to migrate. Thus, calcareous nannofossils can be a powerful tool for improving previous reconstructions of the connection between the Tethys and Panthalassa Oceans during the Jurassic.

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