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The Middle Darriwilian (Middle Ordovician) δ^{13}C isotopic event (MDICE) recognized in the Argentine Precordillera

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The middle Dariwilian isotope carbon excursion (MDICE) has been documented in Baltoscandic, Chinese, and North American successions suggesting that it has a global distribution. In an attempt to discover it also in South America, we examined the carbon isotope chemostratigraphy of the MDICE interval at two localities in the central San Juan Province in the Precordillera of Argentina, namely the Las Chacritas River and Las Aguaditas sections. Both successions consist of dominating limestones which rest on the San Juan Limestone and represent distal ramp or platform margin deposits. More than 60 samples provided a detailed conodont biostratigraphy similar to that in Baltoscandia. At the former locality, 56 isotope samples were collected through the approximately 54 m thick Las Chacritas Formation. Samples from the lower 35 m of this unit yielded δ^{13}C values $\sim$-1‰ which are considered baseline values. In the overlying, 19 m thick, part of the formation, an interval representing the *Eoplacognathus pseudoplanus* and lowermost *E. suecicus* conodont zones, there is a modest but recognizable isotope excursion with δ^{13}C values $\sim$-0.5‰Ḃecause its biostratigraphic position and magnitude are very similar to those of the MDICE in Baltoscandia and China, it is identified as the MDICE. This first confirmed record of MDICE in South America provides a high-resolution tool for middle Darriwilian intercontinental correlations. In the Las Aguaditas section, we collected more than 150 isotope samples through the lower 170 m of the Las Aguaditas Formation, an interval corresponding to the *Yangtzeplacognathus crassus, Dzikodus tablepointensis, E. suecicus, Pygodus serra*, and *P. anserinus* conodont zones. The resulting δ^{13}C curve may be subdivided into two parts. The lower part, representing the basal 50 m of the formation, has δ^{13}C values of $\sim$-1‰ and there is no clear evidence of the presence of the MDICE within the biostratigraphic interval where it occurs elsewhere in the world. The upper part of the Las Aguaditas δ^{13}C curve shows uniform δ^{13}C values of $\sim$+1‰ and is closely similar to upper Darriwilian and lowermost Sandbian δ^{13}C curves from other continents. The reason for the apparent absence of the MDICE in this biostratigraphically well-controlled and closely sampled succession, in which there is no published evidence of a stratigraphic gap, is currently not obvious and requires further study.