

## Geochemical Assessment of the Cabó Formation Section North of Organyà, Catalunya, Spain

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The road cut of Catalunya Route C-14 along the west side of the Segre River canyon just north of the town of Organyà shows a thick and continuous sedimentary succession of light to dark gray and black limestones of the Organyà Basin deposits (CAUS, E. et al., 1990; BERNAUS et al., 2003). The succession exposes the northern flank of the large Santa Fé syncline of the Boixols thrust sheet (CAUS et al., 1990; GARCÍA-SENZ, 2002). This study focuses on 35.6 m of limestones just south of the tunnel that delineates the Cabó Formation in order to assess the organic geochemical characteristics with respect to Barremian–Aptian environmental changes in the Organyà Basin (SANCHEZ-HERNANDEZ & MAURRASSE, 2014). Microfacies show scarce benthic foraminifera, rare fragments of gastropods, echinoderms (roveacrinids, holothurian ossicles), bivalves, spumellarid and nassellarid radiolarians (from above level 0.68 m), and *G. blowi* planktonic foraminifera, in concurrence with previous biostratigraphic studies (*Ref. op. cit.*). The organic carbon isotope values ( $\delta^{13}\text{C}_{\text{org}}$ ) fluctuate from a low of -24.41‰ at a distance of 5.96 m from the tunnel wall (bottom of the studied section) to a positive shift of -22.15 ‰ at 0.43 m, followed by an abrupt negative inflection of -23.86‰ at 1.93 m. The succeeding values increase to -22.63 ‰ at 4.38 m then drop to around -23.2 ‰ up to the level of 27.4 m. These C-isotope values are consistent with the results obtained at the El Pui section, suggesting that the Barremian–Aptian boundary may be correlated with the negative excursion at 1.93 m (about 7.89 m from the tunnel wall). Biomarker analyses at 0 m, 0.43 m, 3.93 m, 10.75 m, 14.85 m, and 29.95 m, respectively, show *n*-alkanes with chain lengths that vary between C10 to a highest of C34, with predominance below C21. The highest chain length of C34 is recorded at 0 m, indicative of terrestrial input at that level. The preserved *n*-alkanes most likely characterize the original composition of the OM because Pristane/Phytane (Pr/Ph) ratios vary between 0.57 and 1.54 less than 2.5 indicative of overmature organic matter. Spumellarid and nassellarid radiolarians concur with normal open marine environments characteristic of the basin flooding succeeding Jurassic–Barremian shallow-water conditions.

BERNAUS, J.M. et al., 2003. *Sedimentary Geology*, **159**/3–4, 177–201.

CAUS, E. et al., 1990. *Cret. Research*, **11**, 313–320.

GARCÍA-SENZ, J., 2002. PhD Thesis, University Barcelona, 310 pp.

SANCHEZ-HERNANDEZ, Y. & MAURRASSE, F.J.-M.R., 2014. *Chem. Geology*, **372**, 12–31.