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## Assessment of the Moroccan Mediterranean Coasts Contamination by Hydrocarbons (Non Aromatic Hydrocarbons, Aromatic Hydrocarbons and Linear Alkylbenzenes)

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### ABSTRACT

In order to evaluate the contamination of the Moroccan Mediterranean coasts by persistent organic pollutants we studied hydrocarbons and linear alkylbenzenes in bivalve tissues (cockles) collected seasonally from several points along the western Moroccan coasts in the Mediterranean Sea. Two fractions corresponding to non aromatic and aromatic hydrocarbons were analyzed by GC/FID and GC/MS. Non aromatic hydrocarbon concentrations vary in the range of 24.1 - 2731 µg/g dry weight (dw) while total n-alkanes vary from 2.2 to 68.2 µg/g. Few exceptions were noted with values up to 243 µg/g (dw), which is high compared to other Mediterranean sites. The presence of an important unresolved complex mixture (UCM) indicated a significant petroleum contamination, confirmed by the identification of 17α(H), 21β(H) hopanes. Biogenic contributions were also detected within the n-alkane distribution (n-C<sub>17</sub>, n-C<sub>18</sub>, n-C<sub>27</sub>, n-C<sub>29</sub>, n-C<sub>17</sub>, /Pr, n-C<sub>18</sub>, /Ph) and by the presence of alkenes. C<sub>13</sub>, and C<sub>14</sub>, linear alkylbenzenes were found at concentrations of 478 - 1954 ng/g. and point to pollutant inputs from wastewaters. Polycyclic aromatic hydrocarbons were present in low concentrations below the GC detection limit. The observed seasonal and spatial variations were linked to the magnitude of inputs from marine and land-based pollutant discharges.

### KEYWORDS

Western Moroccan Mediterranean Coast, Bivalves Contamination, Gas Chromatography, Hydrocarbons, Biogeochemical Markers, Petrogenic and Biogenic Origins

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