

BIOMARKERS IN THE EAST SIBERIAN CRUDE OILS AS INDICATORS OF PALEOENVIRONMENTAL CONDITIONS OF SOURCE ROCK SEDIMENTATION

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Computirized gas chromatography - mass-spectrometry is used to evaluate biomarkers from the difference East Siberian crude oils. Biomarker (fingerprint) analyses of the selected oils then be used to determine organic facies variations and conditions of source rock sedimentation.

The all commercial oldest (Precambrian and Lower Paleozoic) oils showing high cocentration of 12,-13-monomethylalkanes and C₃₅-homohopanes compared to lower homologs. This family of oils is probably derived from a carbonate source rock (lack of diasteranes) in an anoxic basin as indicated by preservation of the C₃₅-homohopanes.

We have identified the rearranged hopanes - 17 α (H)-diahopane, 18 α (H)-norneohopane and high concentration diasteranes in the all Upper Permian and Mesozoic oils from Vilyi basin. The occurence of diasteranes and diahopane in the oils may be related to bacterial precursors that have been undergone oxidation and rearrangement by clay acidic catalysis. We are used diasteranes and diahopane as the markers of the terrestrially (with coals) sourced oils. This family of oils related to Permian coalbearing formation.

Large amounts of gammacerane, squalane and pregnane indicate highly hypersaline conditions during deposition of the Permian Yujno-Tygyanian oil's source rock. It is possible this oil is genetically related to Devonian saltbearing formation of the Lena-Anabar basin.