

## **Geochemical characteristics of hydrocarbon in tight sand reservoir of Altyn Tagh thrust belt, Qaidam Basin**

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Altyn Tagh thrust belt is an important exploration field of Qaidam basin. However, breakthrough had been achieved in Dongping and Niudong area where tight oil and gas was discovered until recent years. In this paper, the geochemical characteristics of hydrocarbon and oil and gas source correlation is studied using gas chromatography mass spectrography (GC-MS), C isotope, natural gas component and total scanning fluorescence (TSF) analyses on oil and gas samples from study area.

The natural gas component and C isotope data reveals that the gas of Dongping and Niudong area are both closely related to the Jurassic source rock of northern Qaidam basin, where Jurassic source rock is well developed and in high maturity. However the oil from these two areas is quite different. The geochemical characteristics of oil sample from Dongping area is in low maturity and Pr/Ph is about 1, which reflects that the source rock is from Paleogene saline lacustrine sedimentation of western Qaidam basin. But geochemical characteristics of oil sample from Niudong area is in high maturity and Pr/Ph is >3, which reflects that source rock is from Jurassic palustrine sedimentation of northern Qaidam basin. The identification of source rock in Dongping and Niudong area is of great significance to prospect the potential of hydrocarbon exploration in Altyn Tagh thrust belt.

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