# The Role Transformation of Soluble Organic Matter in Argillaceous Source Rocks and its Significance in Hydrocarbon Generation

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Soluble organic matter(SOM) is an important component of sedimentary organic matter and plays a significant role in hydrocarbon generation. Understanding the role transformation between product and parent material of SOM in hydrocarbon generation process, therefore, is of great importance for deeply recognizing hydrocarbon generation mechanisms and resource assessment. We analyze data of contents, group components, saturates GC/MS and various parameters ratios of chloroform bitumen "A" in Paleogene argillaceous source rocks in depth of 1000 ~ 5000m in Dongying sag. The results show that depth of 3000m would be a crucial boundary of the role transformation of SOM as large differences of the chloroform bitumen "A" contents, group components and ratios between light and heavy hydrocarbons were found below and over depth of 3000m. Further analysis found that resins, asphalts and heavy hydrocarbons are abundant below 3000m bound, while saturates and light hydrocarbons concentrated over 3000m. In addition, with burial depth the group components show an increase in saturates concomitant with a decrease in resins. Those results indicate that SOM mainly is product of hydrocarbon generation below 3000m but is parent material over 3000m. Resins make the biggest contribution for hydrocarbon generation. This boundary is consistent with previous studies where the depth of 3000m is the conversion point between open and close systems during diagenesis process of argillaceous source rocks[1,2]. This study provides more understanding of hydrocarbon generation mechanisms in different diagenesis system and hydrocarbon generation evolutions of different group components.

Keywords: soluble organic matter; hydrocarbon generation; role transformation

[1] Bjorlykke, K. (2014) Sedimentary Geology 301,1-14. [2] Hunt, J. M. (1990) AAPG Bulletin 74(1), 1-12.

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