

## **Geochemical characteristics of biomarkers extracted from coal measures rocks during the Early Cretaceous in Jixi basin, China**

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By the Gas chromatography and the Gas chromatography-mass spectrogram analyse, the biomarkers in the early Cretaceous mud rocks and coals of coal measures from Jixi basin are explored. The results indicate that n-alkanes in mud rocks appears as front single-peak type, with the main peak carbons to be  $C_{16}$  or  $C_{18}$ . The ratio of Pr/Ph between 2.86~11.22,  $Pr/nC_{17} > 1$ . The n-alkanes in coals appears as rear single - peak type, with the main peak carbons to be  $C_{22}$  or  $C_{23}$ . The ratio of Pr/Ph and  $Pr/nC_{17}$  respectively between 2.86~11.22 and 2.1~3.33. The value of the OEP and CPI in both mud rocks and coals focus 1.0. The thermal evolution has reached maturation stage. The biomarkers in mud rocks show that the ratio of tricyclic terpane + tetracyclic terpane /  $C_{30}$ -H between 2.37~3.62, and  $C_{31}-22S/22(S+R)$ , Ts/Tm and  $G/C_{30}-H$  respectively between 0.57~0.61, 0.47~0.81 and 0.11~0.34. The  $\alpha\alpha$ -20R homosteranes in mud rocks appears to be in asymmetrical "V" distribution. The analytic result of the biomarker shows the mud rocks come mainly from aquatic organisms, and deposited in reducing environment with more saline water, which is better for retention and invert of organic. The coals biomarker shows that tricyclic terpane + tetracyclic terpane/ $C_{30}$ -H is lower than that of mud rocks. The ratio of  $C_{31}-22S/22(S+R)$  are about 0.6, and Ts/Tm and  $G/C_{30}-H$  is very low. The  $\alpha\alpha$ -20R homosteranes of coals appear to be in inverted "L" distribution. The coals are mainly from aquatic organisms and deposited in more oxidizing environment.