

SEDIMENTARY BASIN ANALYSIS OF THE CRETACEOUS KONGJU BASIN IN MID KOREA

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The Cretaceous Kongju basin in mid Korea consists of alluvial deposits of conglomerates, sandstones, mudstones, and is one of several small continental basins which are presumed to have been formed along a big northeast-southwest (NE-SW) trending cross-peninsular strike-slip fault zone. The sedimentary sequence is maximum 3,000m thick and is exposed in a 45° to 25° area. The basin was initiated by pull-apart strike-slip faulting originated from ridge subduction, and was under a transtensional and shearing setting in the early stage of basin formation and later was transformed to a compressive setting by inversion tectonics. The deposits in the basin can be classified into ten sedimentary facies as follows; crudely stratified clast-supported conglomerate facies (Gsc), matrix-supported conglomerate facies (Gm), massive conglomerate facies (Gma), graded-bedded conglomerate facies (Ggr), massive sandstone facies (Sma), massive pebbly sandstone facies (gSma), graded-bedded sandstone facies (Sgr), massive mudstone facies (Mma), well stratified mudstone facies (MI), fissile mudstone facies (MI). The sedimentary environments of the Cretaceous Kongju Basin are interpreted to be upper, mid, and lower parts of alluvial fan, alluvial plain and adjacent lake settings. The overall trend of the sedimentary sequence is fining-upwards, suggesting that the depositional settings evolved from alluvial fan through alluvial plain to lacustrine environment in ascending order.