

# **GEOCHEMISTRY OF MESOZOIC INTRAPLATE VOLCANIC ROCKS AROUND BOHAI BAY, EASTERN CHINA: IMPLICATION FOR THE NATURE OF SUBCONTINENTAL LITHOSPHERIC MANTLE BENEATH SINO-KOREAN CRATON**

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Large-scale eruption of intraplate trachyandesites and lamprophyres occurred around Bohai Bay in eastern China during the early Cretaceous such as in Xialiaohe Basin, Huanghua Basin, Jizhong Basin, Jiyang Basin, Zouping and Mengyin Basins. With absence of typical basalts, the volcanic rocks belong to trachyandesitic series. All trachyandesites and lamprophyres display right-declined REE patterns with LREE enrichment and weakly Eu anomaly and are enriched in LILE such as Rb, Ba, K and depleted in the HFSE like Nb, Ta, Zr, Hf, Ti and P in the trace element spider diagrams. Because of higher K<sub>2</sub>O abundance, the lamprophyres are more enriched in REE and LILE abundance than trachyandesites. The Sr and Nd isotopic compositions were different between the trachyandesites and the lamprophyres, reflecting a diversity of the mantle source for partial melting. The majority of trachyandesites are plotted within the variation range of EM1 while the lamprophyres display a trend toward EM2 with the higher initial <sup>87</sup>Sr/<sup>86</sup>Sr ratios. The difference of Sr and Nd isotopic compositions is consistent with the REE and trace element geochemistry, which related to a younger metasomatism for the origin of lamprophyres. From the above-mentioned facts and the geological observation around the Bohai Bay, the nature and structure of the lithosphere were similar to those in early Paleozoic when the diamond-borne kimberlites erupted. The large-scale eruption of trachyandesites and intrusion of lamprophyres in early Cretaceous were derived from the lithospheric stretch or extension so that passive uplift of asthenosphere and partial melting of pre-existing metasomes took place.