

Silica-coated natural iron ore particles for genomic DNA separation

Sarangerel Oidovsambuu¹ , Tuul Tsagaantsooj² , Ganzorig Chimed² ,
Ochirkhuyag Bayanjargal² , Enkhsetseg Dashjav³ , Sansarmaa Sanchigdorj² ,
Odgerel Oidovsambuu²  and Ninjbadgar Tsedev⁴  

¹Institute of Chemistry and Chemical Technology, Mongolian Academy of Sciences, Ulaanbaatar 13330, Mongolia

²School of Engineering and Technology, National University of Mongolia, Ulaanbaatar 14201, Mongolia

³Jülich Research Center LLC, Institute of Climate and Energy Systems (IEK-1), Jülich 52425, Germany

⁴Institute of Food Research, Mongolian University of Science and Technology, Ulaanbaatar 14191, Mongolia

✉ Corresponding author: ninbadgar@must.edu.mn; ORCID: <https://orcid.org/0000-0002-5725-3637>

Received: 13 May 2025; revised: 12 September 2025; accepted: 31 October 2025

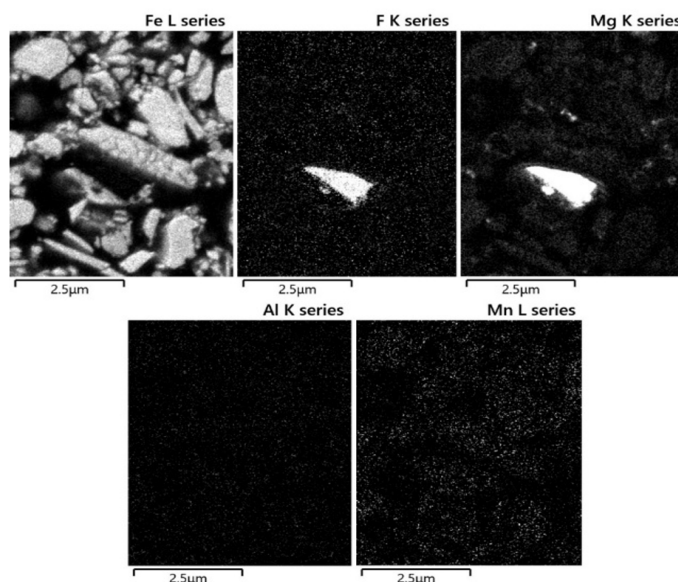


Fig. S1. EDX maps of Fe and minority elements observed in the region shown in Fig. 3 (a)

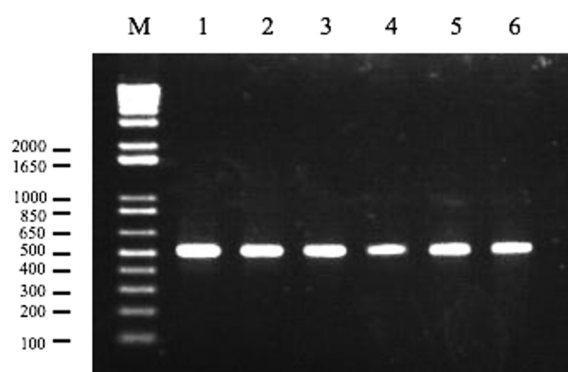


Fig. S2. Agarose gel electrophoresis of DNA from a PCR-amplified human interferon alpha 2 gene product using various magnetic particles. Lane M - Marker, lane 1 – Pure IFN2a, lane 2 – Commercial kit (Abbot mSample preparation system), lane 6 - Iron ore magnetic particle.