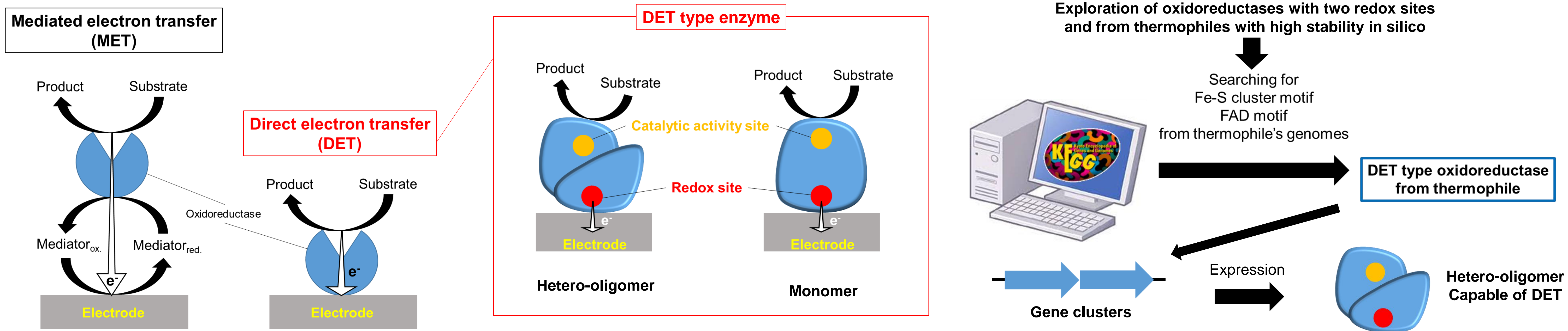


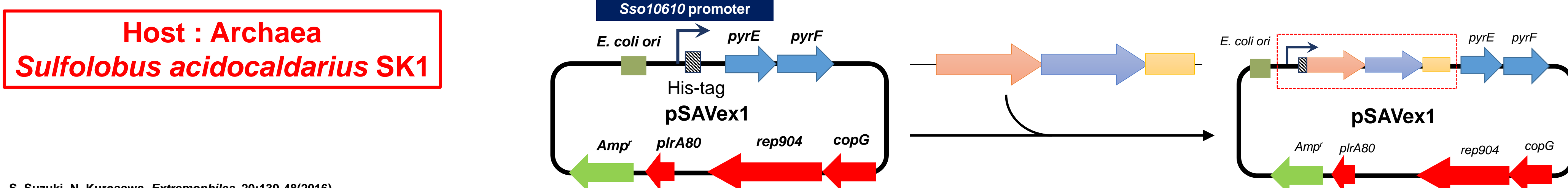
メディエーターレス酵素機能電極用素子を志向した直接電子移動型色素依存性脱水素酵素の探索と機能解析

福井大学 学術研究院 工学系部門 生物応用化学講座 里村武範

Screening of direct electron transfer (DET) type oxidoreductase

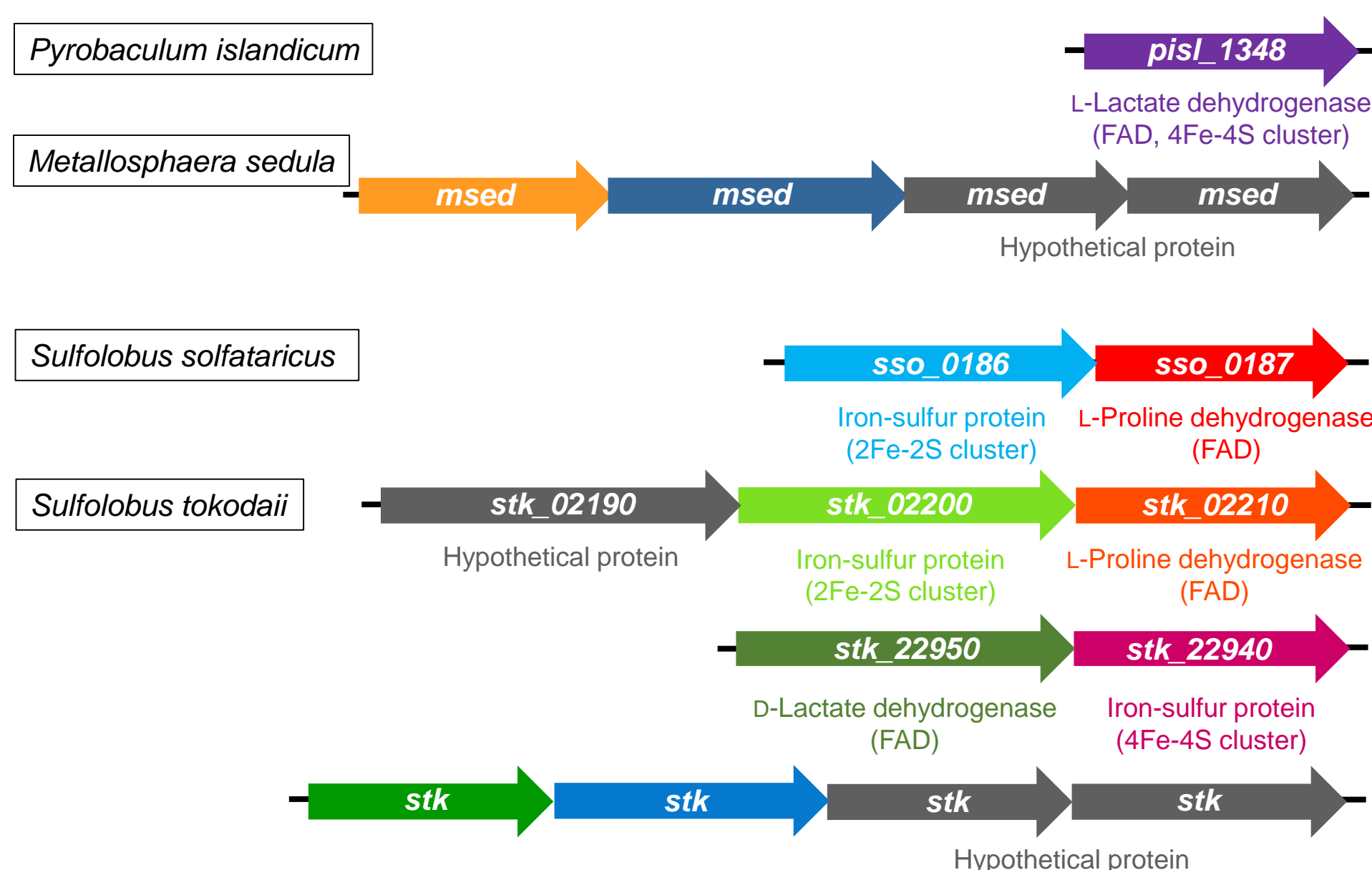


Strategy for DET type oxidoreductase gene expression

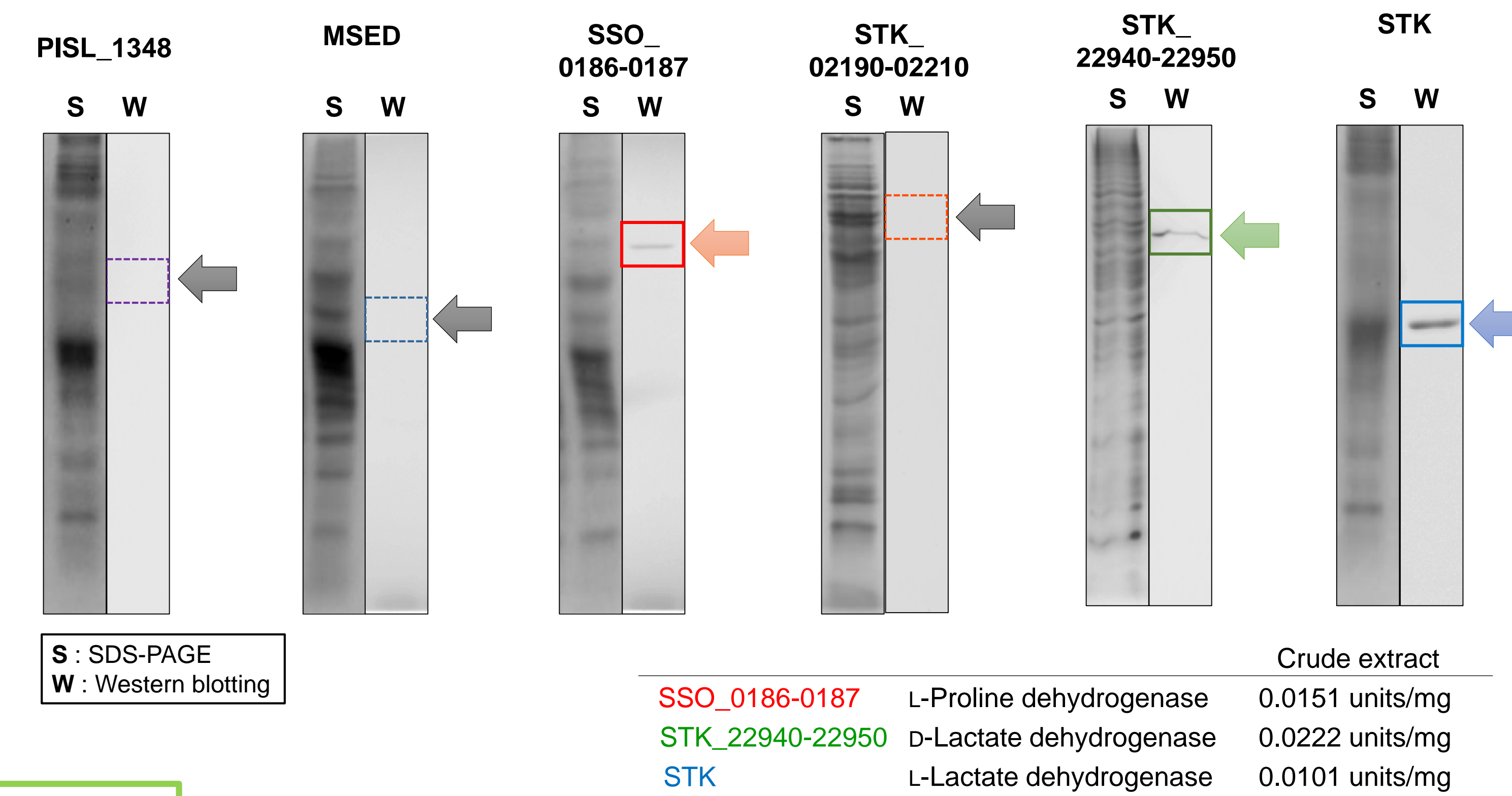


Extraction of candidate for DET type oxidoreductase

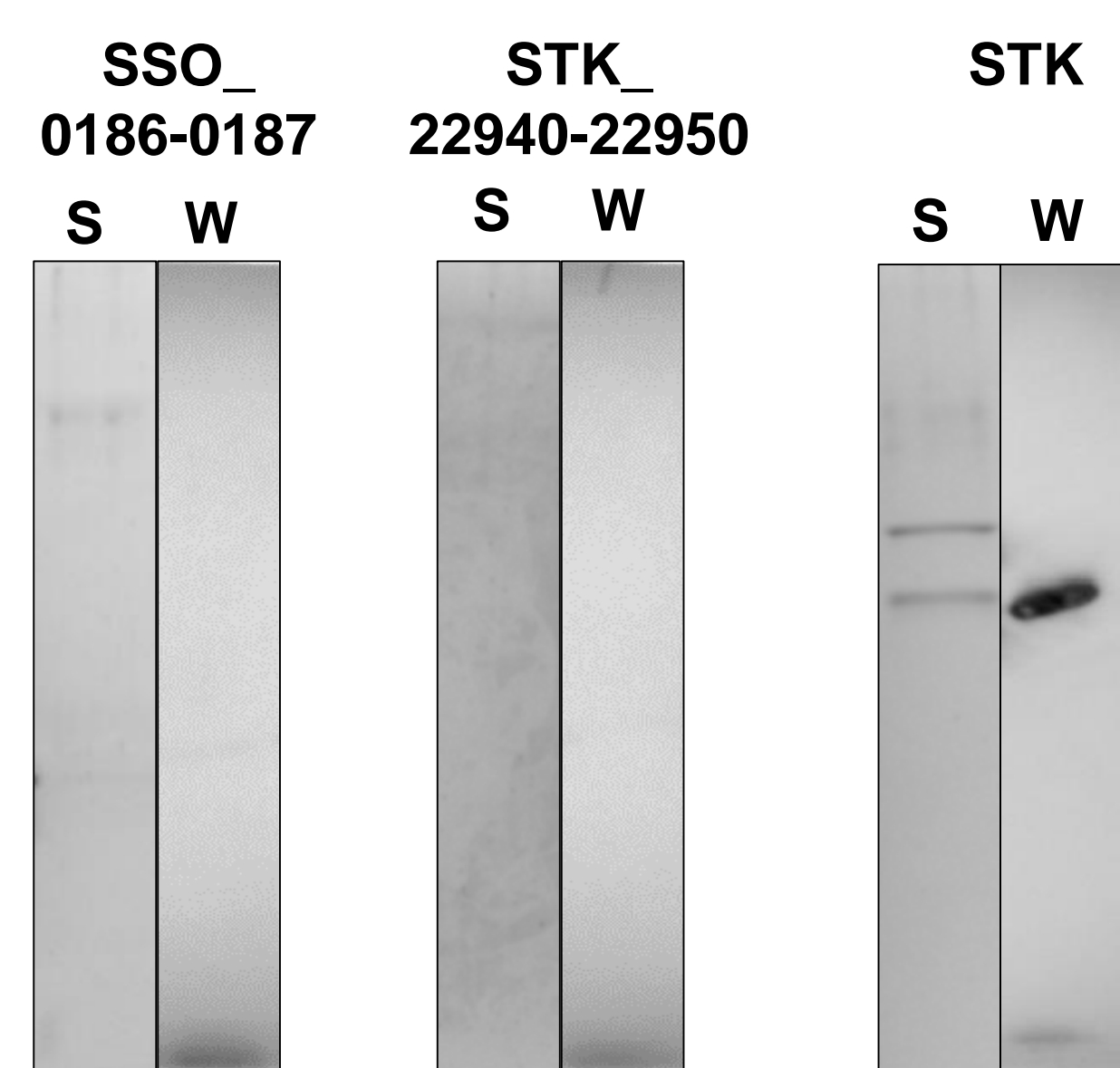
Candidates for DET type oxidoreductase



Expression of DET type oxidoreductase candidate in *S. acidocaldarius*



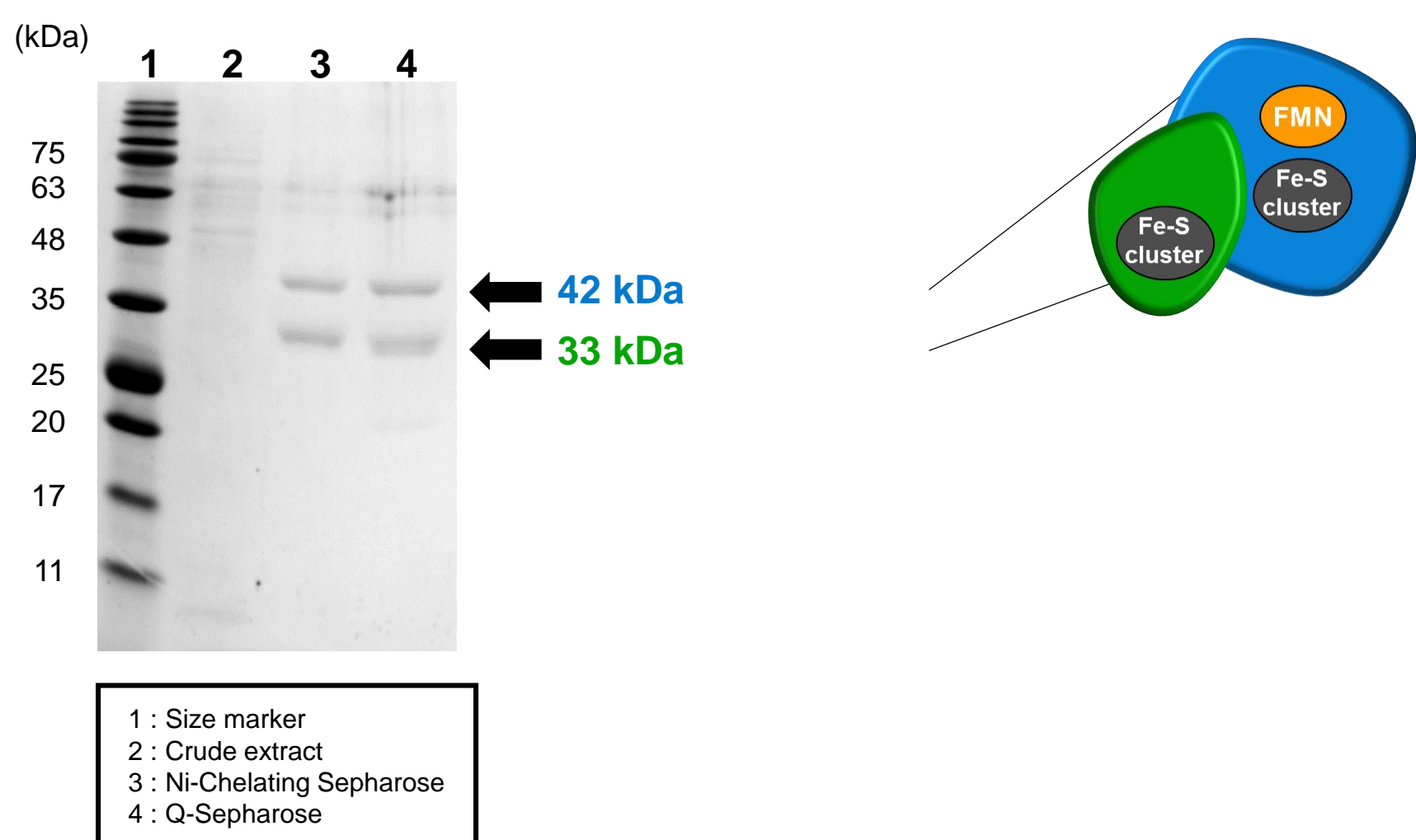
Purification of DET type oxidoreductase by Ni-chelating column



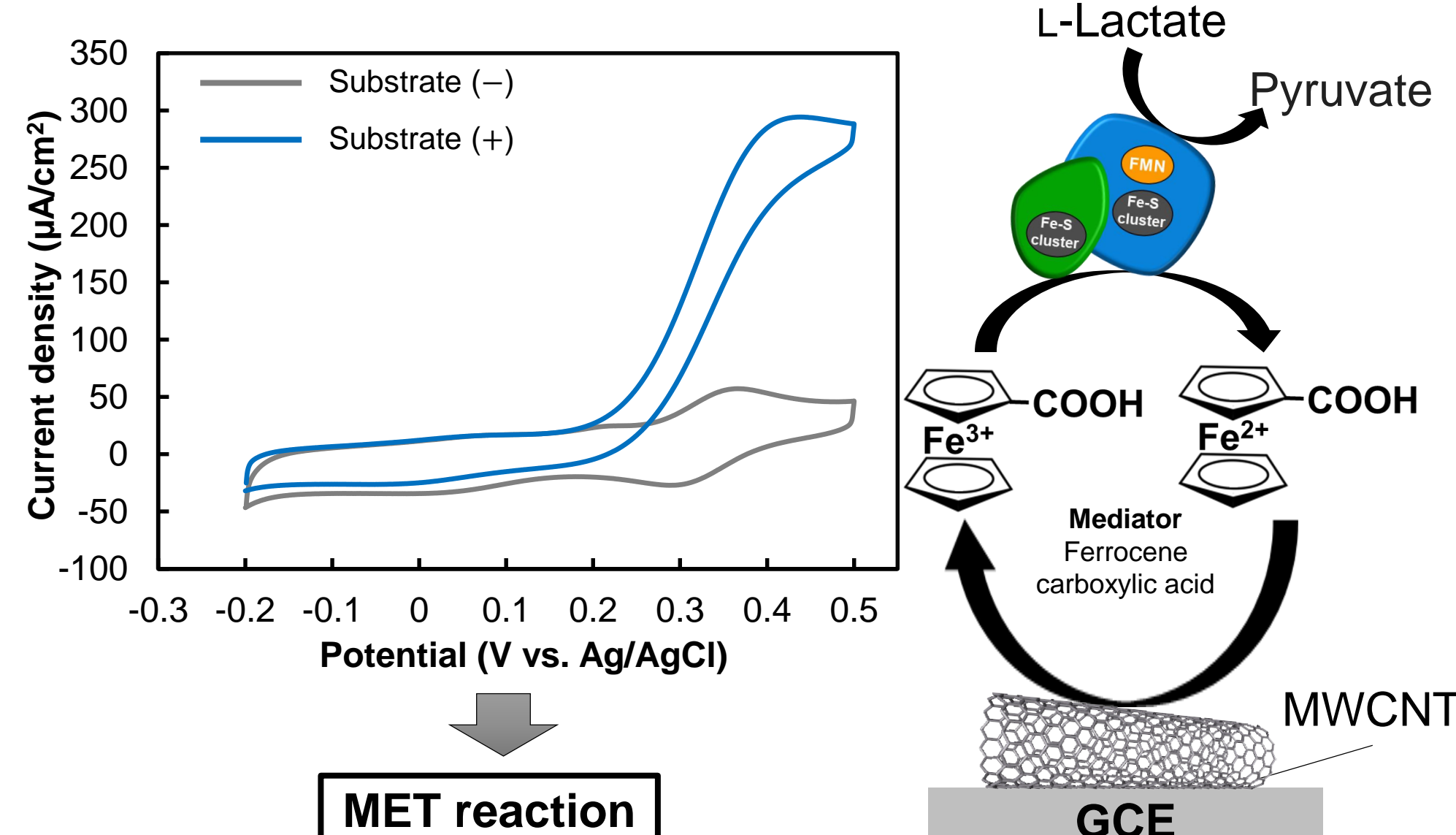
	SSO_0186-0187 L-Proline dehydrogenase	STK_22940-22950 D-Lactate dehydrogenase	STK L-Lactate dehydrogenase
Crude extract	0.0151	0.0222	0.0101
Column absorption	0	0	0.477
Column flow-through	0.0139	0.0230	0

Characterization of L-lactate dehydrogenase

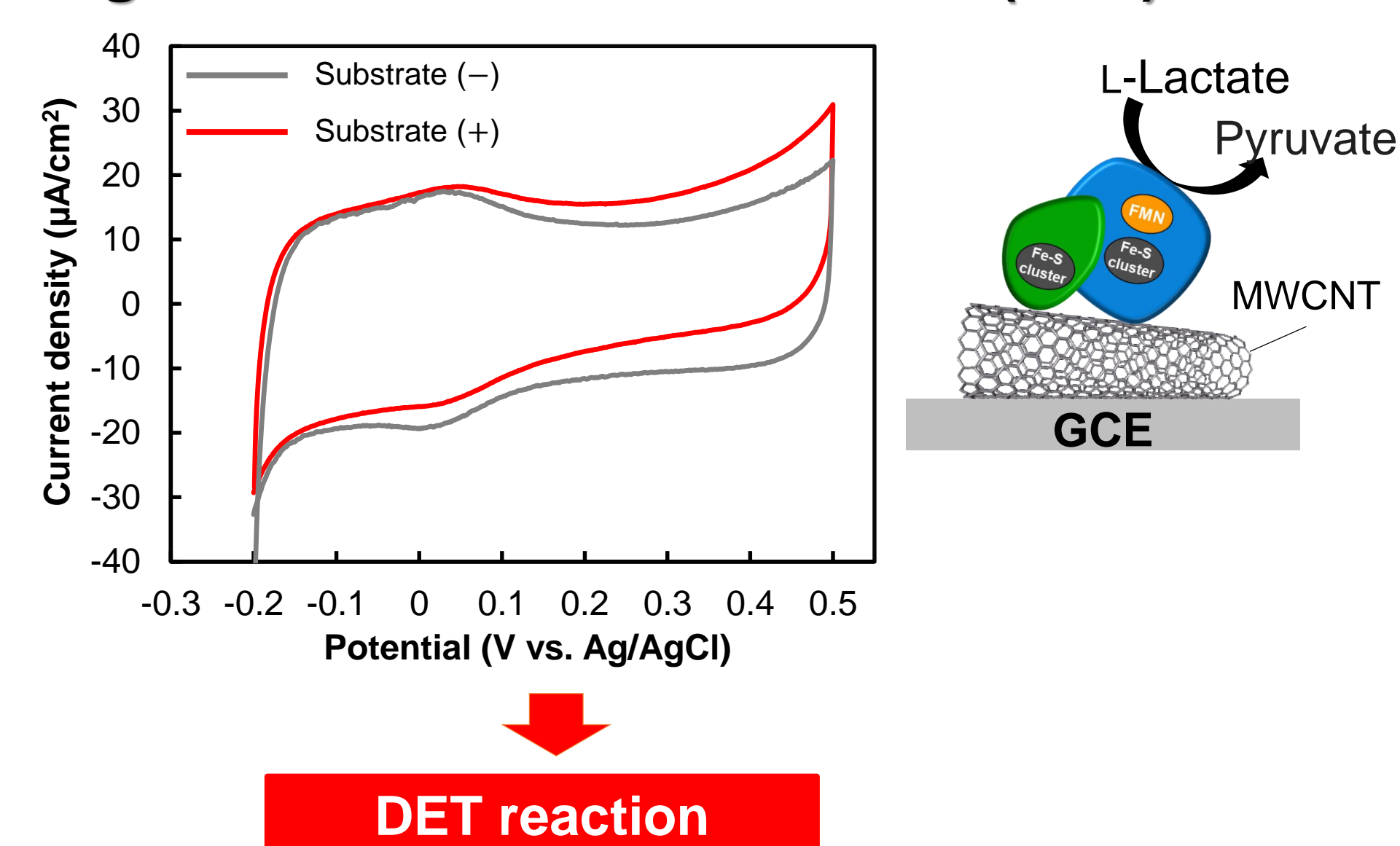
Purification of L-lactate dehydrogenase



MET reaction by L-lactate dehydrogenase



CVgrams of GCE/MWCNT/StLDH (DET)



Conclusion

- Candidates for DET type dehydrogenase were obtained from hyperthermophiles.
- *S. tokodaii* L-lactate dehydrogenase was DET type dehydrogenase.