1.Composition of SRB culture medium

Solution A:

K_2HPO_4	0.5	g
NH_4Cl	1.0	g
Na_2SO_4	1.0	g
$CaCl_2•2H_2O$	0.1	g
$MgSO_4•7H_2O$	2.0	g
DL- Sodium lactate	2.0	g
yeast extract	1.0	g
Resazurin	1.0	mg
H_2O	980	ml

Solution B

$FeSO_4•7H_2O$	0.5	g
H_2O	10.0	ml

Solution C

Sodium thioglycolate	0.1	g
Vitamin C	0.1	g
H_2O	10.0	ml

2. Method for preparing culture medium

Dissolve the various components in the solution with an appropriate amount of water. Solution A was boiled for a few minutes, cooled to room temperature, and anaerobic N_2 gas was introduced. After adding solutions B and C, the pH was adjusted to 7.8 with NaOH, and aliquoted under anaerobic N_2 (shake the medium at any time) into anaerobic tubes. Sterilize at 121 °C for 15 minutes.

3. SRB culture equipment and anaerobic inoculation method

3.1 Inoculation process

As shown in Fig. S1, before the inoculation of sulfate-reducing bacteria, N_2 was introduced into the SRB medium containing high temperature sterilization for about 15 minutes, and the SRB stock solution was injected with a syringe during the N_2 flow injected into the culture medium. The injection port is sealed with paraffin.

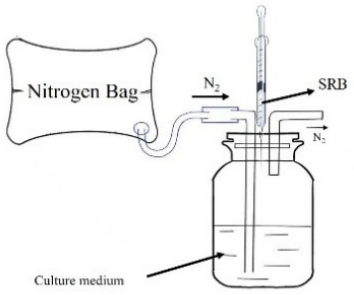

Fig. S1-a Schematic diagram of vaccination

3.2 Anaerobic culture process

After inoculation, keep N_2 in low-speed circulation, put a rubber tube with a balloon on the right air outlet, shut down N_2 after the balloon is inflated, and quickly seal the left air inlet with another set of rubber tube with a balloon. At the same time, it was observed that the liquid level in the intake duct was slightly higher than the liquid level in the jar.

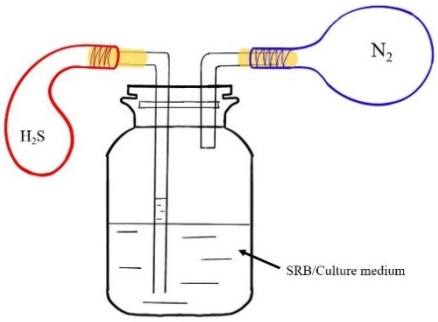

Fig. S1-b SRB Cultivation process