

RESULTS AND DISCUSSION

This study focused on the bacterial community in a 72°C hot stream that named it GS3. Actually, beside this hot spring, there are several hot springs that closed to this stream. The hot stream of GS3 showed in Figure 1.

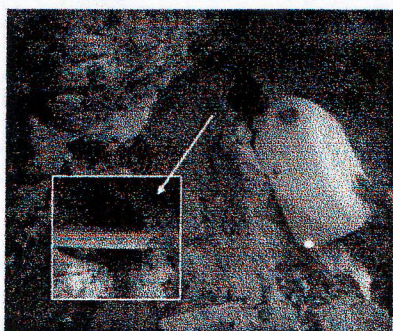


Fig 1. The GS3 hot stream. The spring water came out from a little cave with diameter around 20cm.

The community study of bacteria in this hot spring was carried out using cultivation method and direct analysis through filtration of spring water. The complete microbial communities inhabiting the hot stream are expected from filtration procedure. The microorganisms from extreme environments are tending to growth well in a minimal medium and they need the trace element to support their metabolism. GTa and GYa medium, that contain only 0,1% of triptone or yeast respectively were used in this study to growth the bacteria. The need of trace element is fullfilled using the stream water in this medium. These kinds of medium assumed that there will a lot enough kinds of microorganism that can growth in. The bacterial morphology of GTa and GYa cultures are shown in Figure 2. Both of cultures were dominated by gram negative and rod bacteria. The rod shape of GYa culture looks thinner and longer; could be represent most of *Thermus* species.

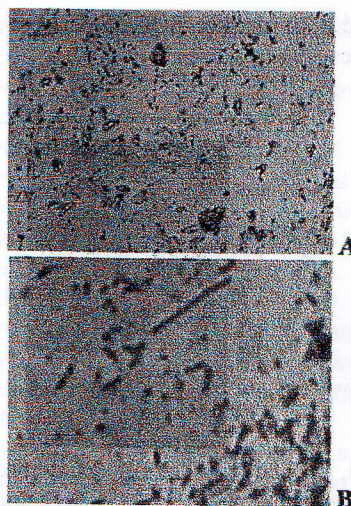


Fig 2. The morphology profiles of GTa (A) and GYa (B) cultures.

The cells both from cultivation and filtration are lysed to extracted their chromosomal DNA for used as a template in amplification of 16S rRNA gene. The result is shown in figure 3; all of the DNA bands appear in the same size, about 23 kb which prove that these bands represent the chromosomal DNA of microorganism.

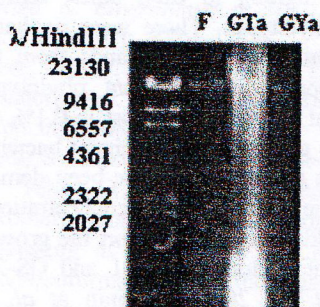


Fig 3. The electrophoresis profiles of chromosomal DNA that were extracted from the cells of filtration (GS-F); GTa culture (GTa), and Gya culture (GYa) respectively.

Theoretically, the primer pair of Com1F and Com2R will amplify a 400-bp section of the 16S rRNA genes of members of the domain Bacteria. The PCR product as shown in figure 4 showed that the bands from GS-F, GTa, and GYa appear align with the