

P019 Identification of *Sulfolobus solfataricus* *araS* promoter *cis*-acting elements using a novel reporter gene system
Nan Peng^{1,2}, Zhenjun Chen^{1,2} Qunxin She¹

¹Danish Archaea Centre, Dept. of Biology, Biocenter,
University of Copenhagen, Denmark;

²SKLAM, Huazhong Agricultural University, Wuhan, P.R.
China

A novel reporter gene system has been developed for *S. islandicus* and used to identify *cis*-acting promoter elements present in the *araS* promoter of *S. solfataricus*. Deletion and base substitution mutants of the *araS* promoter were constructed and cloned onto an *E. coli* vector, at upstream of the reporter gene *lacS*. Then these reporter gene cassettes were inserted into dS, a derivative of the *E. coli*-*Sulfolobus* shuttle vector pHZ2. Specific beta-galactosidase activities controlled by the different promoter constructs were studied. The identified functional *cis*-acting elements include *ara*-box, TATA box and putative BRE. Furthermore, when a biotinylated *ara*-box sequence was used as the probe for magnetic affinity purification, proteins exhibit a strong binding activity to the *ara*-box probe have been isolated. MALDI-TOF/TOF analysis of the obtained proteins has revealed that some of them are indeed putative transcription factors. Currently, these proteins have under further characterization. All above experimental data will be presented.