DEVELOPMENT OF BIOMETORIC DNA INK FOR AUTHENTICATION

M. Hashiyada[1], Y. Itakura[2], T. Nagashima[2] and M. Nata[1]
[1]*Tohoku University Graduate School of Medicine, Japan*
[2]*NTT Data Technology Corporation, Japan*

The individual differences in the repeat count of several bases, called STR (short tandem repeat), among all of the DNA base sequences, can be used as unique DNA information for personal identification (ID). We thought the DNA personal ID determined by STR information applied to biometoric personal authentication system. However, STR analysis takes too long time as biometorics. Then, we considered the DNA personal ID applied to another way to authenticate. An ink containing individual-specific DNA information will enable the manufacturing of writing utensils or stamp pads that identify the user. We have devised a process utilizing synthetic DNA, as an effective method of privacy protection, in which person-specific information is separated from DNA to produce a DNA personal ID using a one-way function. Synthetic DNA obtained through forensic techniques was mixed with printing inks to manufacture DNA inks. We report the results of test designed to investigate the possibility of identifying the base sequence of the original DNA.