Claims

[1] A method of electrophoresing nucleic acids, the method comprising:

electrophoresing a nucleic acid in a polymer gel comprising an anionic functional group having a pKa of from 1 to 5, in which an intercalator having an anionic functional group has been inserted in said nucleic acid.

[2] The method according to claim 1, wherein an acid dissociation constant of the intercalator is more than 0 and 3 or less.

[3] The method according to claim 2, wherein the functional group is a sulfo group.

[4] The method according to claim 1, further comprising:

applying a voltage across a channel filled with a buffer so that the nucleic acid introduced at a predetermined position in the channel is electrophoresed; and

damming the nucleic acid moving to a positive-electrode end.

[5] The method according to claim 4, wherein a pH of the buffer is 5 or less.

[6] A method of concentrating and purifying nucleic acids, the method comprising:

electrophoresing a nucleic acid in a polymer gel

comprising an anionic functional group having a pKa of from 1 to 5, ~~in which~~and wherein an intercalator having an anionic functional group has been inserted in said nucleic acid.

[7] A cartridge for nucleic acid electrophoresis, comprising:

a channel formed to be capable of introducing a liquid;

a damming portion, which dams substances, disposed at a predetermined position of the channel;

electrodes disposed at both ends of the channel;

an intercalator that can be inserted to a nucleic acid, having an anionic functional group; and

a buffer;

the intercalator and the buffer being housed between the damming portion and a negative-electrode end.

[8] A method of producing a cartridge for nucleic acid electrophoresis, the method comprising:

allowing a monomer solution, introduced in a channel formed on a substrate, to gel into a predetermined shape, by photopolymerization, to form a polymer gel, said polymer gel comprising an anionic functional group having a pKa of from 1 to 5 ; and

housing an intercalator that can be inserted to a nucleic acid, having an anionic functional group, into the channel.

[9] A method of electrophoresing nucleic acids, the method comprising:

mixing a sample containing a nucleic acid, a compound having a functional group which undergoes