

CLAIMS**[Claim 1]**

A genotype analysis device, comprising:

- an electrophoresis device that obtains a spectrum by electrophoresis; and

- a data analysis device that obtains a base length of DNA based upon the spectrum and analyzes a genotype with reference to a standard base length,

- wherein the data analysis device includes a mobility model management unit that predicts a correction length between the standard base length and a measured base length of DNA based upon environmental information in the electrophoresis, and

- the mobility model management unit sets, as a data set, an electrophoresis result paired with the environmental information of a tested sample containing DNA having a known standard base length, and learns from the data set and creates a prediction model to be used for the prediction,

- wherein the environmental information includes at least one of temperature, humidity, atmospheric pressure, electrical conductivity, pH, voltage, and current; and

- wherein the electrophoresis result includes the correction length between the standard base length and the measured based length of the tested sample.

[Claim 2]

The genotype analysis device according to claim 1,

- wherein the mobility model management unit stores a plurality of prediction models to be used for the prediction, and selects the prediction model based upon the environmental information in the electrophoresis.

[Claim 3]

The genotype analysis device according to claim 1,
wherein the mobility model management unit stores a plurality of prediction models to be used for the prediction, and applies the prediction model in a predetermined priority order when predicting the correspondence therebetween.

[Claim 4]

The genotype analysis device according to claim 2 or 3,
wherein the data analysis device includes a user interface unit, and displays a list of the applicable prediction models on the user interface unit.

[Claim 5]

The genotype analysis device according to claim 1,
wherein the mobility model management unit selects the data set based upon the environmental information in the electrophoresis, and learns from the selected data set to generate the prediction model.

[Claim 6]

The genotype analysis device according to any one of claims 2 to 5,
wherein the mobility model management unit evaluates accuracy of the prediction by referring to a base length obtained by electrophoresis of an actual sample that always contains DNA whose standard base length is known, when predicting the correspondence therebetween.

[Claim 7]

The genotype analysis device according to claim 6,

wherein the mobility model management unit changes the prediction model or newly learns a prediction model according to an evaluation result of the accuracy of the prediction.

[Claim 8]

A genotype analysis method using a data analysis device,
wherein the data analysis device predicts a correction length between a standard base length and a measured base length of DNA obtained based upon a spectrum obtained by electrophoresis, based upon environmental information in the electrophoresis, and

sets, as a data set, an electrophoresis result paired with the environmental information of a tested sample containing DNA having a known standard base length, and learns from the data set and creates a prediction model to be used for the prediction,

wherein the environmental information includes at least one of temperature, humidity, atmospheric pressure, electrical conductivity, pH, voltage, and current; and

wherein the electrophoresis result includes the correction length between the standard base length and the measured based length of the tested sample.