

ABSTRACT

Title of Invention: FLOW PATH DEVICE, NUCLEIC ACID PURIFICATION METHOD, AND SAMPLE PRETREATMENT SYSTEM

The present disclosure proposes a flow path device including, for the purpose of performing a treatment of removing impurities from a sample containing a nucleic acid and a treatment of purifying and collecting the nucleic acid with high efficiency: a purification membrane that is able to collect the nucleic acid; a membrane storage portion that is a space formed on a substrate, is connected to a flow path, and houses the purification membrane; and an annular resin ring that is press-fitted to the membrane storage portion, the membrane storage portion including a pedestal surface formed between an upper surface and a lower surface of the substrate such that the purification membrane is installed thereon, the membrane storage portion being divided into a cylindrical membrane storage portion upper portion and a membrane storage portion lower portion having a smaller diameter than the membrane storage portion upper portion with the pedestal surface sandwiched as a boundary, the flow path including a first flow path that is connected to at least one valve mechanism, is formed on the upper surface of the substrate, and is connected to a side wall of the membrane storage portion upper portion and a second flow path that is connected to at least one valve mechanism, is formed on the lower surface of the substrate, and is connected to the membrane storage portion lower portion, the resin ring having an outer diameter that is equal to or greater than an inner diameter of the membrane storage portion upper portion, the purification membrane being fixed between the pedestal surface and the resin ring, the outer diameter of the press-fitted resin ring being smaller than the outer diameter of the resin ring in a state where the resin ring is not housed in the membrane storage portion, and the inner diameter of the membrane storage portion upper portion being substantially the same as the inner diameter of the membrane storage portion upper portion in a state where the resin ring is not housed in the membrane storage portion, and the inner diameter of the membrane storage portion upper portion and the outer diameter of the press-fitted resin ring are the same at least at a position where the side wall of the membrane storage portion upper portion and the press-fitted resin ring are closest to each other (see FIGS. 9A and 9B).