by the protease-induced proteolysis are released away (S41), and then the identification and the quantitation of the protein are performed by LC-MS or some other analysis (S51).

[0011] In this method, the protein, which is to be analyzed, is site-specifically cleaved so that species of the peptides contained in the liquid sample are small. For example, when an antibody is bonded to the porous body, a limitation is imposed onto the access of the protease to an Fc domain of the antibody, which is a bonding site of the antibody to the porous body. Accordingly, an Fab domain of the antibody which contains a complementarity-determining region (CDR) is selectively cleaved with the protease. For this reason, the sample for analysis contains therein peptide fragments containing an amino acid sequence of the complementarity-determining region important for identifying the structure of the antibody at a high concentration relative to the total amount of the produced peptide fragments, so that accurate analysis becomes possible.

PRIOR ART DOCUMENTS

PATENT DOCUMENT

[0012] Patent Document 1: WO 2015/033479 pamphlet

NON-PATENT DOCUMENTS

[0013] Non-Patent Document 1: Iwamoto *et al.*, *Anal. Methods*, 2015, 21, 9177-9183

Non-Patent Document 2: Iwamoto *et al.*, *Bioanalysis*, 2016, 8(10), 1009-1020

SUMMARY OF THE INVENTION

[0013a] In one aspect, the present invention provides a container set comprising:

a filter unit; and

a closing unit that is attachable to and detachable from the filter unit, wherein

the filter unit includes:

a housing having a first end including a closable sample introducing opening formed therein and a second end including a liquid discharging opening formed therein; and

a filter fixed to the housing,

the sample introducing opening is configured to allow solids and liquids tobe therethrough introduced into a sample holding space surrounded by the housing and the filter,

the liquid discharging opening is configured to allow a filtrate transmitted

through the filter to be therethrough discharged,

the housing of the filter unit has a first joining portion,

the closing unit has a second joining portion that is joinable to the first joining portion,

the first joining portion of the filter unit and the second joining portion of the closing unit are configured such that the first and second joining portions are joinable to each other to produce an airtight state to close the liquid discharging opening spatially by the closing unit, and such that the filter unit and the closing unit are further pushable to each other to shorten a distance between the filter and the closing unit while the airtight state is maintained, and

the filter unit and the closing unit are configured such that a space between the closing unit and the filtration filter is made into a positive pressure relative to a pressure in the sample holding space when the filter unit and the closing unit are pushed to each other.

PROBLEMS TO BE SOLVED BY THE INVENTION

[0014] In the above-mentioned sample preparation method, B/F separation is attained by centrifugal filtration, and subsequently protease treatment is conducted to release a substance to be analyzed into the liquid phase. The liquid is then collected as a sample for analysis. As described above, the collection of the solid after the rinsing by the B/F separation is generally attained by a pipette operation. According to the pipette operation, the solid adhering to the inside of the filter unit or chips of the pipette may remain without being collected. Consequently, the collection percentage of the sample is varied in accordance with the skill of the operator, and others. The variation causes a lowering in accuracy of quantitative analysis.

[0015] In particular, when many specimens are handled at the same time in a clinical trial and in others, works therefor easily become uneven. As operations therefor are more

4. The container set according to claim 3, wherein

the first joining portion of the filter unit has an outer surface tapered shape reduced in diameter in a pushing direction when the filter unit is pushed to the closing unit, and

the second joining portion of the closing unit has an inner surface tapered shape that can be fitted to the first joining portion.

5. The container set according to claim 1, wherein

the closing unit has a joining opening through which the end at a liquid discharging opening side of the housing can pass, and

the filter unit and the closing unit are configured such that the housing can penetrates the joining opening to be inserted into the closing unit, and the first joining portion of the filter unit on an outer wall surface of the housing can be fitted to the second joining portion of the closing unit on an inner wall surface when the housing is inserted into the closing unit.

6. The container set according to any one of claims 1 to 5, wherein the closing unit has a structure of having plural second joining portions and is joinable to plural filter units.

7. The container set according to any one of claims 1 to 5, further comprising a liquid collecting container that is attachable to and detachable from the filter unit,

the liquid collecting container has an outer shape that can be set to a centrifugal separator, and the liquid collecting container is configured to store the filtrate transmitted through the filter.