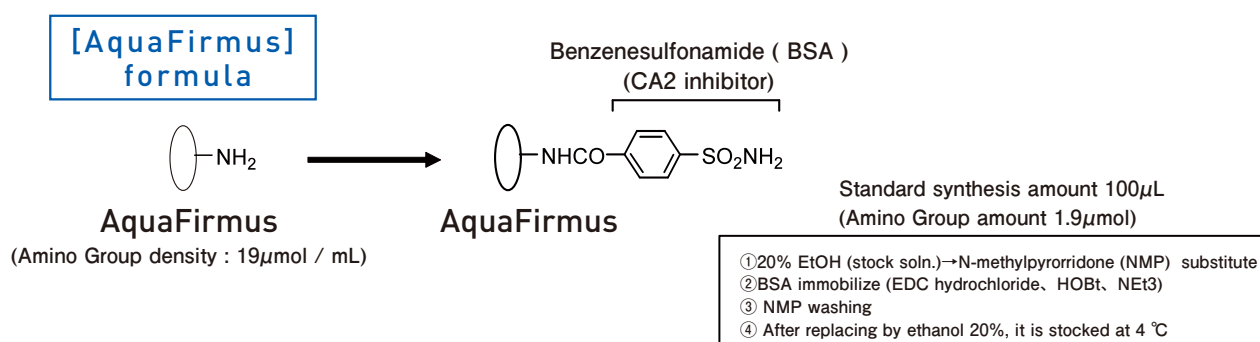


New affinity resin "AquaFirmus" which is chemically stable and has little adsorption of nonspecific protein.

『AquaFirmus』 New Affinity Resin

Conventionally, agarose / sepharose derivatives and synthetic polymers have been widely used for target identifications of bioactive compounds such as drugs, toxins, or natural products. Agarose derivatives have little nonspecific protein adsorption because of high hydrophilic property. However, it has a fault that it irreversibly denatures easily under synthetic conditions, and the use has been strictly restricted. On the other hand, synthetic polymers derivatives are usually stable under such conditions. However, it has been afflicted by a lot of nonspecific protein adsorption caused by hydrophobic character. AquaFirmus™ is a novel type of solid material for affinity resins, and has the advantages that it is chemically stable under synthetic conditions, and hydrophilic enough to reduce non-specific protein adsorption.

Immobilized Benzenesulfonamide (BSA) AquaFirmus synthesis



Advantage character

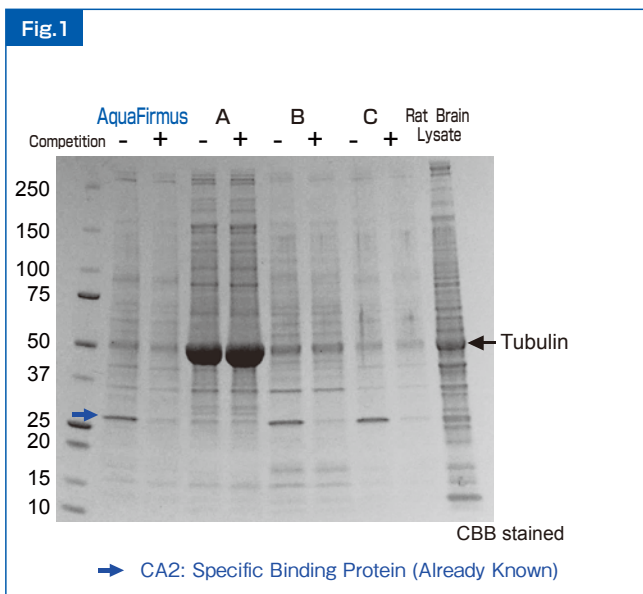
- Adsorption of nonspecific protein is repressed from high hydrophilic property
- Available with wide range of organic solvent
- Good stability under general organic conditions (Include deprotection condition, such as 1N NaOH and TFA.)
- Washable with alkali or acid
- High ligand density efficiently capture target protein(s)

Main application material

- Target capture of Immunosuppressive Agent FK506 (FKBP12, CnA, CnB)
- Target capture of Benzenesulfonamide (BSA) (Carbonic Anhydrase2(CA2))
- etc.

Basic Character

Functional Group for Ligand Fixation	NH ₂ group, 19μmol/mL
Method of Ligand immobilization	General Amide Bond Formation
Carrier material	Methacrylate Resin
Particle Diameter	100 ~ 425μm



New affinity resin "AquaFirmus" which is chemically stable and has little adsorption of nonspecific protein.

	Stability	Nonspecific Protein Absorption
A: Synthetic resin (Company A)	○	×
B: Synthetic resin (Company B)	○	△
C: Agarose derivative resin(company C)	×	○
AquaFirmus	◎	◎

Fig. 1. Comparison of new affinity resin "AquaFirmus" and commercial resins.

It is known that Benzenesulfonamid (BSA) will specifically associate to Carbonic Anhydrase II (CA2). BSA was immobilized to each solid material. Each solid material is the AquaFirmus, company synthetic resin A, company synthetic resin B, and company agarose derived resin C.

Next, the lysate prepared from rat brain and 10 μ L of materials which immobilized with BSA were mixed. Next, the protein associated with the materials was analyzed. As a result, the AquaFirmus clearly captured the specific protein with low nonspecific protein absorption in spite of chemical stability.

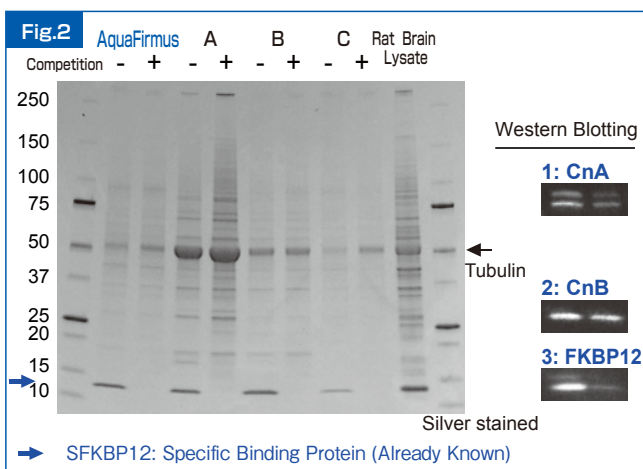


Fig. 2. Target capture with the New Affinity resin, "AquaFirmus"

Immunosuppressant FK506 was immobilized by the conventional method, and lysate was prepared from rat brain. From the lysate, AquaFirmus succeeded in identification of target protein FKBP12, calcineurin A (CnA), and calcineurin B (CnB). The resin which succeeded in capture of the target protein complex was only the AquaFirmus.

(7th Annual Meeting of Japanese Society for Chemical Biology P-094 Mabuchi et al. Research and development of solid material "AquaFirmus" for affinity resin.

The comparative study of various materials. -1(2012))

Catalog No.	Products Name	Volume	Storage	Price
TUKREPRO-01	AquaFirmus	10mg	2 ~ 8 °C	Inquiry
TUKREPRO-02	AquaFirmus (trial)	3 mg		

Shipment form: AquaFirmus is shipped as suspension in the state where it dipped in EtOH 20%. Please ask in the case of a bulk order.

Tsukuba IEDA Chemistry Co., Ltd. had license permitted based on this patent from Reverse Proteomics Research Center in Co., Ltd. in Japan, the United States, and Europe.

販売元

IEDA Tsukuba IEDA Chemicals Co., Ltd.

IEDA IEDA Trading Corporation