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PurKine™ GST-Tag Protein Purification Kit (Glutathione)

Cat #: KTP2010 Size: 1 mL/1 mL×5

	GST-Tag Protein Purification Kit (Glutathione), crosslinked 4% agarose		
REF	**Cat #:** KTP2010	LOT	**Lot #:** Refer to product label
	Capacity: >20 mg GST protein/mL (40 kDa)		**Bead size:** 45-165 μm
	Tolerance: 0.1 MPa, 1 bar		**Buffer:** PBS containing 20% ethanol
	Storage: Stable for 12 months at 4℃ from date of shipment		

Assay Principle

The GST-Tag Protein Purification Kit (Glutathione) produced by Abbkine adopts a new PurKine™ GST-Tag Glutathione Resin, which can purify GST-tag protein simply, efficiently and with high specificity. The kit provides GST-Tag Glutathione Packed Column, Binding/Wash buffer and Elution buffer, without packing and buffer preparation, which is convenient for customers to use. PurKine™ GST-Tag Glutathione Resin can purify glutathione S-transferase (GST), glutathione-dependent protein and recombinant derivatives of glutathione transferase expressed by various expression systems in one step. Glutathione Resin was prepared by covalent bonding of reduced glutathione with 12-atom spacer arms on 4% agarose. With the special design, the purification efficiency of the resin is improved, and the resin binding capacity was more than 20mg GST-fusion proteins. Glutathione Resin has the characteristics of high binding capacity, good specificity and cost-effective.

Materials Supplied and Storage Conditions

Kit components	Size		Storage condition
	1 mL	1 mL×5	
PurKine™ GST-Tag Glutathione Packed Column	1 mL	1 mL×5	4℃
Binding/Wash buffer (10×)	30 mL	100 mL+50 mL	4℃
Elution buffer (10×)	15 mL	75 mL	4℃

Materials Required but Not Supplied

- 0.22 μm or 0.45 μm filter
- Precision pipettes, disposable pipette tips
- Distilled or deionized water
- Various glassware for preparing reagents and buffer solutions

Sample Preparation

Version 20230414

The sample should be centrifuged and/or filtered through a 0.22 μm or 0.45 μm filter before it is applied to the medium to reduce impurities, improve protein purification efficiency and prevent clogging the column. Be careful not to exceed the resin's binding capacity.

Reagent Preparation

Water and chemicals used for buffer preparation should be of high purity. It is recommended to filter all buffers before use by passing through a 0.22 μm or 0.45 μm filter. For most proteins, the following buffer are recommended:

Reagent	Volume		
	Binding/Wash buffer (10×)	Elution buffer (10×)	Water (mL)
Binding/Wash buffer	6	0	54
Elution buffer	0	3	27

Note: 1-10 mM DTT can be included in the Binding and Elution buffer to increase purity. However, this may result in lower yield of target protein.

Procedure for Sample Purification

1. Fix Column. Move the top and bottom stopper, and let the storage buffer drain away.
2. Add 5mL Binding buffer to the column. Equilibrate the column, and drain away the Binding buffer. Repeat this step for two times. A total of 15 mL Binding/Wash buffer was used.
3. Add the prepared protein extract to the resin. Collect the flow-through which can be analyzed by SDS-PAGE. When problems arise, it is easier to find solutions.
4. Add 5mL Wash Buffer to the column to remove the non-specific adsorption protein. Pay attention to collecting the flow-through. Repeat this step for five times. A total of 30 mL Wash Buffer was used.
5. Add 15-30mL Elution Buffer to the column to wash the target protein. The collected eluate is the target protein solution. Collect each 5mL in a tube and test separately (It can not only ensure that all the bound target proteins are eluted, but also obtain high purity and concentration of protein).
6. Add 5mL Binding Buffer and 5mL deionized water to the column in turn to equilibrate the Resin, repeat two times. Finally, equilibrate the Resin with 5 mL of 20% ethanol, repeat once. Store resin in an equal volume of PBS containing 20% ethanol at 2-8℃ to prevent the resin from being contaminated by bacteria.
7. The flow-through, eluted protein and prepared protein extract can be directly analyzed by SDS-PAGE to test the purification effect.

Glutathione Resin Cleaning

The Glutathione resin can be reused without regeneration. However, with the increase of non-specifically bound proteins and the aggregation of proteins, the flow rate and binding capacity performance often decrease, so it is necessary to clean the resin.

To removal of precipitated or denatured substances: Wash with 2 resin-bed volume of 6 M guanidine hydrochloride, immediately followed by 5 resin-bed volumes of PBS, pH 7.4.

To remove some nonspecific adsorption substances caused by hydrophobic adsorption: Wash with 3-4 resin-bed volume of 70% ethanol or 2 resin-bed volumes of 1% Triton™ X-100, immediately followed by 5 resin-bed volumes of PBS, pH 7.4.

Recommended Products

Catalog No.	Product Name
BMR2010	PurKine™ GST-Tag Glutathione Resin
KTP2001	PurKine™ His-Tag Protein Purification Kit (Ni-NTA)
KTP2020	PurKine™ MBP-Tag Protein Purification Kit (Dextrin)
KTP2030	PurKine™ Biotin-Tag Protein Purification Kit (Streptavidin)

Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes.