

EliteUQ GIN C18 Ginseng-Specific Column

Instruction Manual

V1.1.0

Thank you very much for choosing the EliteUQ series special columns from ELITEHPLC. Please read this instruction manual carefully before use.

1. Application

The EliteUQ GIN C18 ginseng-specific column is a chromatographic column specially used for the detection of ginseng samples.

2. Column connection

Column inlets and outlets are connected in the direction indicated by the column label arrows.

The port part of the column connection tube must be flat, without burrs and incision bevels.

If possible, the connecting pipes at both ends of the chromatographic column should be as short as possible, and the inner diameter of the connecting pipe should be as small as possible to prevent the sample diffusion from not reflecting the true column efficiency of the chromatographic column.

3. Use the pH range

The pH range is 2.0~8.0.

4. Temperature range

Recommended operating temperature is not higher than 60 °C. When using phosphate buffer at pH ≥ 7 , it is recommended that the column temperature should not exceed 40 °C.

Avoid sudden temperature increases during use.

5. Column storage

Overnight or short-term storage: when using buffer solution or salt-containing mobile phase, it is necessary to replace the chromatographic column and the mobile phase in the system with 10%~20% methanol/water or acetonitrile/water, and the concentration of organic solvent in the storage solvent of the chromatographic column is not less than 20%.

Storage for more than 1 week: pure methanol or acetonitrile can be used for storage, and the chromatographic column plug shall be tightened. The chromatographic column must be thoroughly cleaned before storage to avoid residual sample impurities. For chromatographic column using mobile phase with high salt concentration, before storage, the chromatographic column and mobile phase in the system must be replaced with 10%~20% methanol/water or acetonitrile/water to avoid salt precipitation and crystallization.

The storage temperature is preferably room temperature.

6. Column regeneration and activation

Respectively use methanol: water=90:10 (v/v), pure methanol and dichloromethane as mobile phases, and wash them in turn. Each mobile phase flows through the chromatographic column not less than 20-30 times the volume of the chromatographic column. Then use dichloromethane, pure methanol, methanol: water=90:10 (v/v) as mobile phase to wash in turn.

The regeneration method of the above chromatographic column is not an absolute standard method. Users can choose a suitable solvent that can dissolve the pollutants in the column to wash the mobile phase in the positive or reverse direction according to their actual experience and purpose. However, no matter what method is used to regenerate the chromatographic column, it is impossible to restore the column efficiency or other parameters to the new column level.

If the column is used for the first time or has not been used for a long time, the storage solvent (pure methanol or acetonitrile) is set at rinse 20~30 times the column volume at a low flow rate of 0.2~0.5 mL/min for activation.

7. Column maintenance

High performance liquid chromatographic column is a consumable, and normal operation and maintenance are essential to prolong the life of chromatographic column.

(1) Precautions before use of chromatographic column Without special instructions, the chromatographic column storage liquid produced by our company is the mobile phase shown in the evaluation report. Before use, users must pay attention to the compatibility between the evaluation mobile phase of the chromatographic column and the actual use of the analytical sample.

(2) Mobile phase

The organic solvent used in the mobile phase must be chromatographically pure, and the water used in the mobile phase should preferably be ultra-pure water or double-distilled water for all glassware. The buffer salt must be filtered using a solvent filter (0.45 μ m filter) before use. The mobile phase should be prepared on the spot, the saline solution will breed bacteria or precipitate if it is placed for a long time.

(3) Samples

Impurities in the sample are one of the main reasons for column pollution and column efficiency decline. For complex samples, appropriate methods can be taken to pretreat and remove impurities. A 0.22 μ m or 0.45 μ m filter must be used before injection. If the sample is inconvenient to handle, it is recommended to use a protective column. Sometimes the mismatch between the sample solvent and the mobile phase (incompatibility, polarity difference, etc.) will lead to poor chromatographic peak shape, ghost peak and other phenomena. It is recommended to use the mobile phase to dissolve the sample as much as possible.

8. Problems and solutions in use

The problems that are easy to occur in the use of high performance liquid chromatographic columns are the decline of column efficiency and the sudden rise of column pressure. The possible reasons are as follows:

- (1) Filtration sieve plate contamination in column head;
- (2) Contamination of column head packing;
- (3) The salt in the buffer solution in the chromatographic column forms crystals and precipitates;
- (4) The pH value of the mobile phase exceeds the range of use of the chromatographic column, causing the structure of the stationary phase to be destroyed or dissolved.

The solution is as follows:

When judging that the sieve plate or packing material at the column head is contaminated, the mobile phase that can dissolve pollutants can be used. Flush the chromatographic column (about 20 to 30 times the column volume, or depending on the specific situation; at this time, it is better not to connect the detector) in the opposite direction of the chromatographic column, flush the pollutants out of the chromatographic column, and then use it according to the arrow direction (flow direction) marked on the chromatographic column.

When it is judged that there is salt crystallization precipitation: the column is flushed with an aqueous solution of about 20% organic solvent, so that all the salts in the column are dissolved and flushed out, and then replaced with a mobile phase containing high concentration methanol or other organic solvents.

If the pH value is used improperly, it is usually difficult to restore the chromatographic column.

When the above method cannot solve the problem, it is recommended to replace a new chromatographic column.

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