

Ghost-Buster II Column

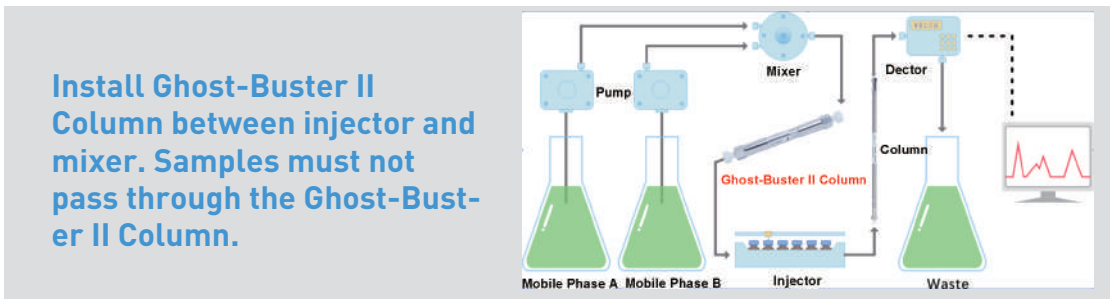
Further improvement, excellent performance!

During HPLC analysis, especially gradient elution or after long-term system usage, some unexpected peaks, often called "Ghost Peaks", may appear in the chromatogram. Welch Materials original Ghost-Buster Column can capture ghost peaks, but sometimes this has been accompanied with baseline fluctuation which may affect the integration of some peaks.

Welch Materials is delighted to announce the launch of Ghost-Buster II Column, an upgraded and improved Ghost-Buster column, which can absorb mobile phase impurities and eliminate ghost peaks. At the same time, baseline drift caused by a high proportion of aqueous solvent in the gradient program will be minimized, which ensures the stable baseline.

Precautions

1. The new Ghost-Buster II Column, should be flushed with 80% methanol at 1.0mL/min for 4-5 hours before using.
2. Not all impurities can be adsorbed by the Ghost-Buster II Column.
3. The GB II column is not compatible with 100% aqueous mobile phases. Mobile phase A should contain at least 5% organic solvent.
4. Ion-pair solvents in mobile phase would be adsorbed by Ghost-Buster II column and affect retention and peak shape. Whether this type of mobile phase can be used should be determined by testing a new GB II column with the specific method.
5. Replacement of the GB II column is recommended once the trapping effect begins to deteriorate. We do not recommend a washing or clean up procedure due to the highly retentive nature of the GB II column packing materials.



Stronger Capturing Effect

Ghost-Buster II Column uses a specifically optimized stationary phase and improved hardware. Ghost-Buster II Column removes impurities in the mobile phase with stronger retention.

Column: C18 column

GB Column: Ghost-Buster II Column, 3.0x50mm

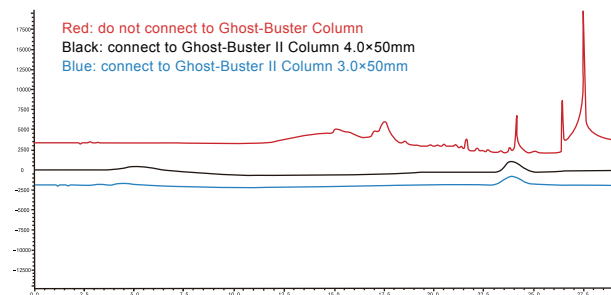
Ghost-Buster II Column, 4.0x50mm

Mobile phase: A: 0.05% phosphoric acid solution B: acetonitrile

Gradient program:

Time/min	0	3	15	20	20.1	30
A/%	95	95	15	15	95	95
B/%	5	5	85	85	5	5

From the above case, it can be seen that Ghost-Buster II Column captures impurities with high retention and significantly improves baseline drift.



More Stable Baseline

When the initial proportion of aqueous phase is high (generally more than 95%), using conventional GB columns can remove impurities effectively. But some ghost peaks may still occur when the proportion of mobile phase has a drastic change in a few minutes or the baseline has large fluctuation. By improving the overall design of the Ghost-Buster II Column, the mobile phase is fully mixed before entering the analytical column, greatly reducing the baseline fluctuation and drift in the initial phase of the gradient program.

Column: C18 column

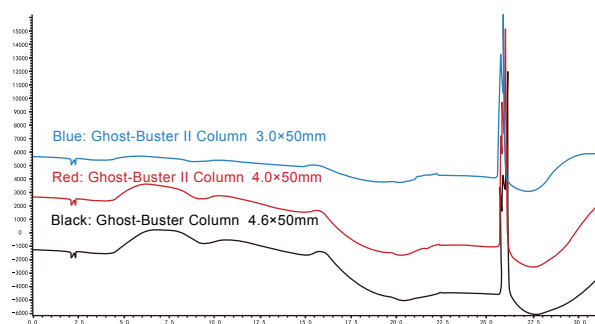
GB Column: Ghost-Buster II Column, 3.0×50mm

Mobile phase: A: phosphoric acid buffer B: acetonitrile

Gradient program:

Time/min	0	4	5	8	11	15
A/%	96	89	89	84	80	50
B/%	4	11	11	16	20	50

From the above case, it can be seen that Ghost-Buster II Column, 3.0×50mm is perfectly compatible with the high proportion of aqueous phase, reducing the run time of the gradient program and providing a more stable baseline.



Ordering Information

Name	P/N	Dimension	Pressure
Ghost-Buster II Column	06100-31008	4.0×50mm	40MPa
Ghost-Buster II Column	06100-31016	3.0×50mm	40MPa

Q&A

Q: What's the lifetime of GB column?

A: Not necessary. But it needs to be removed only for special circumstances like changing of peak position or ion-pair solvents mobile phase. The lifetime of GB column is related to the analysis conditions, brand of the solvents and purity of the mobile phase. If the mobile phase composition (such as water/methanol) is simple, and GB column is carefully used, the lifetime of the GB column is over one year and the number of injections is around 3000 times.

Replacement of the GB column is recommended once the trapping effect begins to deteriorate.

Q: What's the washing procedure and how frequently we have to wash the column?

GB column doesn't need special washing as the adsorption of impurities is irreversible.

Q: Is GB column compatible with ion-pair reagent mobile phases?

Whether ion pair mobile phase can be used should be determined by testing a new GB column as the sorbent in the GB column will absorb ion pair reagent.

- 1) In most cases, it may not be compatible with the mobile phase which contains ion pair reagent such as sodium 1 heptanesulfonate, tetrabutylammonium hydroxide etc.
- 2) However, in some cases, GB column might not affect the retention and peak shape. In these cases, this GB column must be the dedicated column for this ion pair reagent and can't be used for another ion pair reagent mobile phase.

4. Can GB column be used for different types of mobile phases (such as potassium phosphate, sodium phosphate, ammonium acetate, TFA, Formic acid, etc.)?

Yes, GB column can be used for different type of mobile phase except the mobile phase containing ammonium ion. Other reagents such as potassium phosphate, sodium phosphate, TFA, formic acid, etc. can be used for the column.

5. Is GB column compatible with 100% aqueous buffers/100% organic solvents?

- 1) GB column can't be compatible with 100% aqueous buffers. At least 5%-10% of the organic phase should be contained in the mobile phase because low percentage of organic phase (<5%) might result in the unstable baseline. In this circumstance, Ghost-Buster II column, 3.0×50mm (P/N 06100-31016) is recommended.
- 2) GB column can be used at 100% organic solvents.