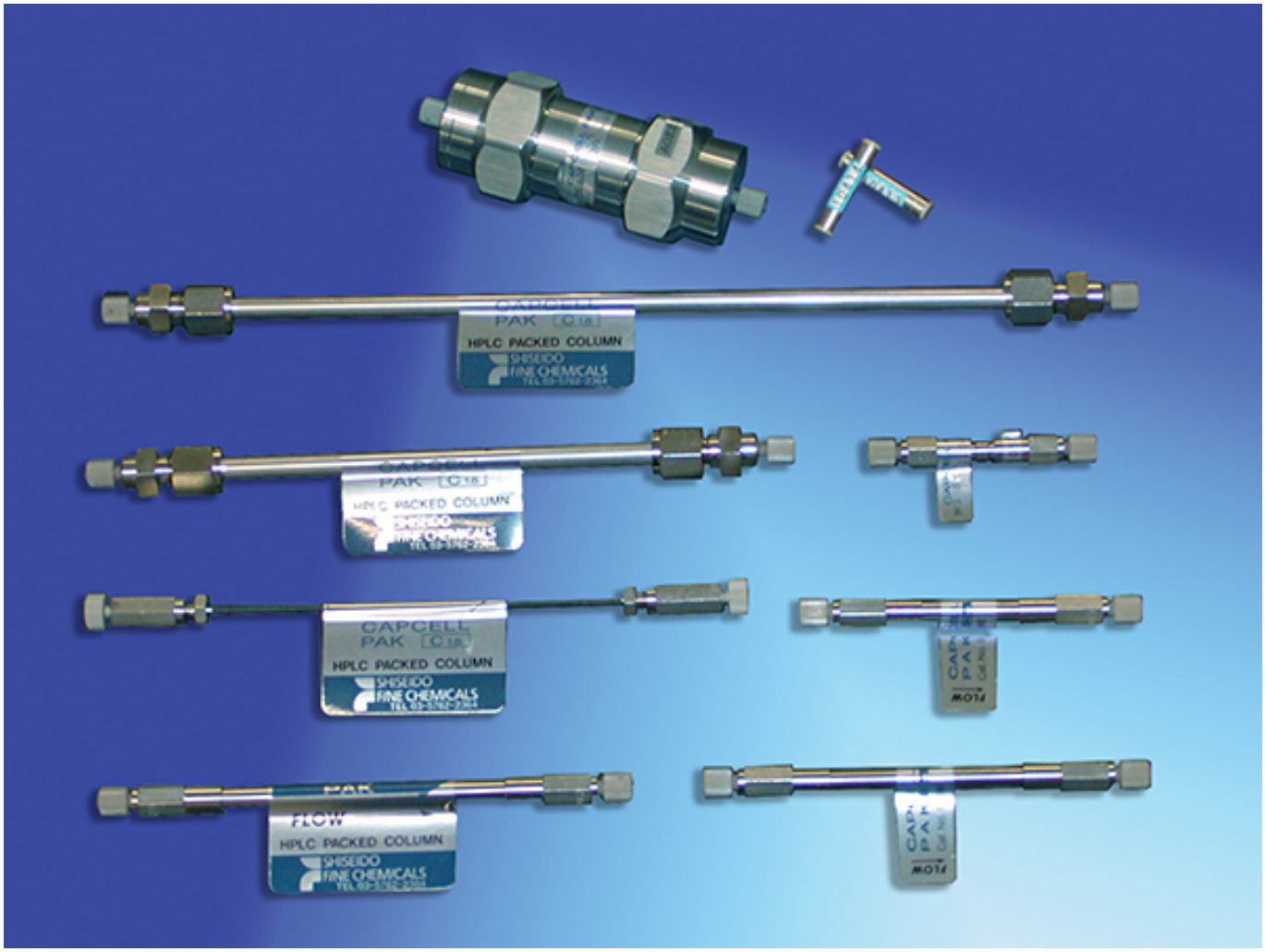
Columns for Analytical and Prep Protein Separations



Chromatographic separations of proteins are based on their difference either in size (size exclusion chromatography), electric charges (ion exchange chromatography), or hydrophobicity (reversed-phase chromatography).

JM Science offers a complete line of Shiseido HPLC CAPCELL PAK Columns with the developed Proteonavi to separate proteins and peptides in reversed phase mode. Adsorption to a stationary phase is one of the most common limiting factors in protein separation in reversed-phase mode. It is generally understood that the irreversible adsorption is caused by denaturing of protein in the hydrophobic phase or a coulombic interaction with silica, a chromatographic support. Proteonavi has eliminated this problem by introducing the short four-carbon structure on the silica surface with a unique chemistry. Its synthetic process has already been established for even a large industrial-scale purification.

Acidic hydrolysis is the major cause of loss in performance in reversed phase.

Proteonavi's durability under acidic conditions was proven by the accelerated test using 1vol% of trifluoroacetic acid (TFA), a concentration one order of magnitude higher than those used for mobile phases for common protein separations.

Proteonavi is designed to show large retention specifically for proteins, by precisely controlling the synthetic process. It utilizes high-purity silica with few metal impurities, and shows minimal irreversible adsorption for proteins and peptides. Its pore size is as wide as 30 nm, so that large proteins are able to have enough interactions with the stationary phase. Proteonavi shows better peak profiles and higher resolution among standard proteins, in comparison with conventional wide-pore columns.

Proteonavi showed the least column bleed, and is expected to provide high purification efficiency in preparative applications, as well as high sensitivity in LC-MS.

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