



**Protein A is the King for pure mAbs**

Protein A affinity chromatography is king for purifying monoclonal antibodies (mAbs).

**HCP & HCD reduce performance**

Host Cell Proteins (HCP) and Host Cell DNA (HCD) can invade your protein A column.

PROTEIN A RESINS DOMINATE mAb PURIFICATION. WHAT'S MOST IMPORTANT?

## Protect Precious Protein A

Protein A affinity chromatography is still the king for purifying monoclonal antibodies (mAbs). Despite pretenders to the throne, protein A still rules as the purification strategy of choice.

Protein A resin is expensive, sensitive and vulnerable. Unwelcome cellular material such as Host Cell Proteins (HCP) and Host Cell DNA (HCD) can invade your protein A column, diminishing its power.



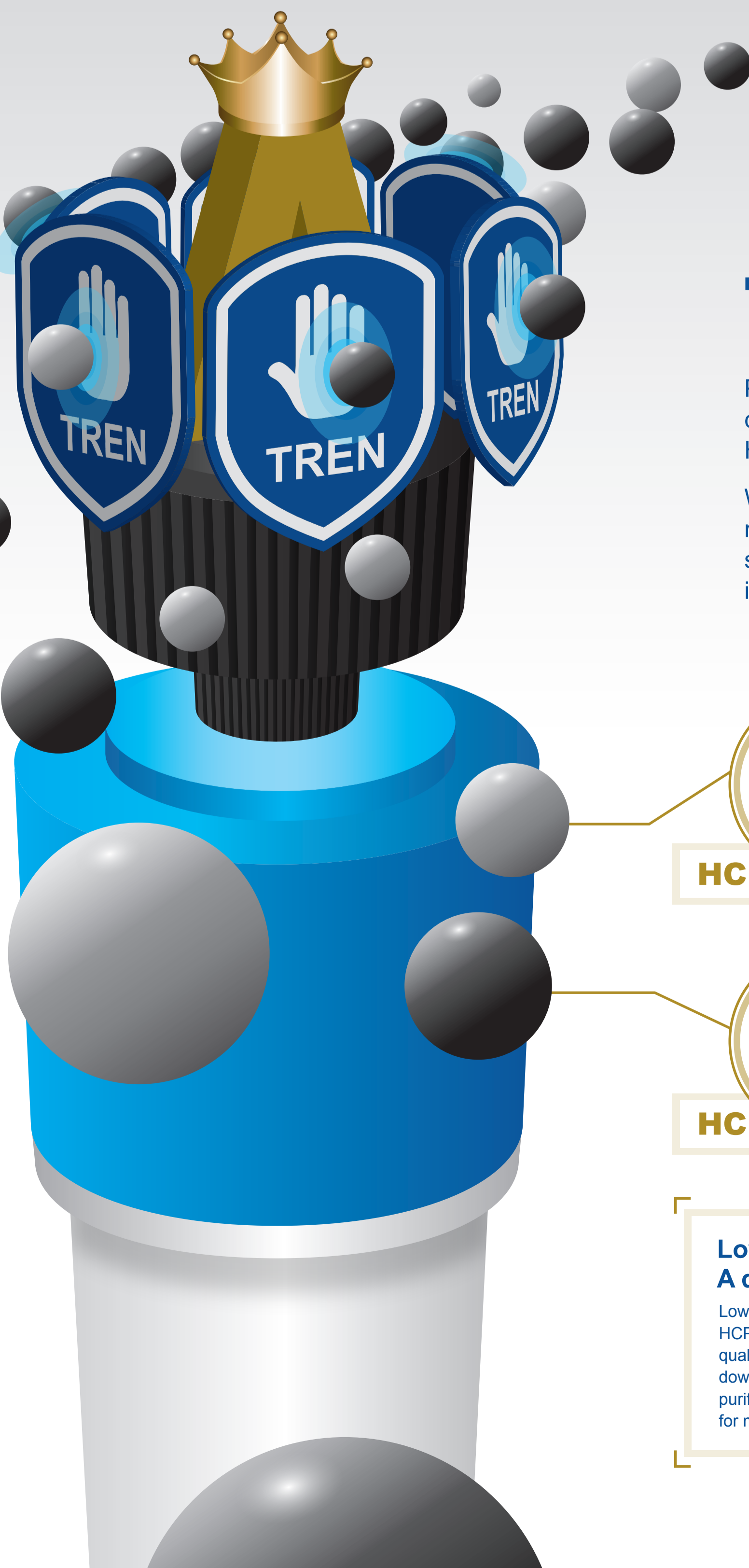
**WorkBeads™ 40 TREN Multimodal IEX**

The resin is excellent for sample cleanup in mAb purification.

HOW CAN YOU MAINTAIN PERFORMANCE?

## Stop HCP & HCD

What you need are dependable guards to protect your protein A resin. A guard column prevents the passage of HCP and HCD to the protein A affinity resin, reducing the need to clean with very harsh reagents.



## Long live the King

Protein A resin lives longer, you have less concerns, less to do, and less hassles with HCP and HCD.

With less impurities, medicines based on mAbs can be manufactured with greater safety. Even small amounts of HCP can induce immune reactions.



Host Cell Protein reduction **10X**

Host Cell DNA removal **99%**

Endotoxin removal **93%**

**Low HCP & HCD A quality attribute**

Low to negligible levels of HCP and HCD is a key quality attribute of downstream process purification development for mAbs.

**WorkBeads 40 TREN + WorkBeads affimAb**