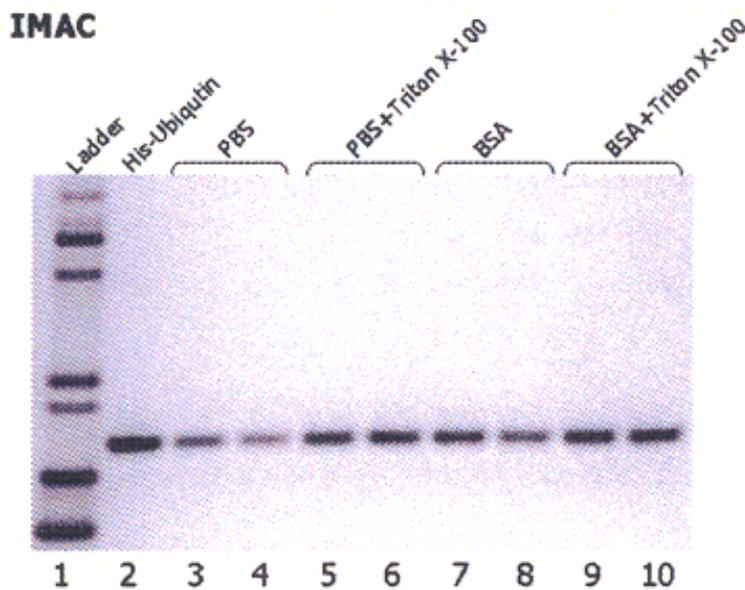


## PhyTip® IMAC Columns for Purification of His-tagged proteins

PhyNexus introduces IMAC (Immobilized Metal Affinity Chromatography) PhyTip® columns to purify or immobilize functional, recombinant His-tagged protein or antibody quickly at high purity and concentration. IMAC separation resin in pipette tips is used to generate highly enriched sample from microliter to milliliter volumes in a reproducible, automatable format. The unique PhyTip column design allows bidirectional flow of the sample through the column to increase capture and elution of the target protein, maximizing the use of the resin and leading to the highest yield possible.

- Capture, purify and enrich in as little as 15 minutes to obtain high concentrations of fully functional protein
- Process small sample volumes in a reproducible, high throughput, automatable format
- Elution volumes as low as 10  $\mu$ L, producing enrichment factors as high as 50 fold, with concentrations of purified protein of up to 10 mg/mL
- IMAC affinity columns routinely produce samples of greater than 90% purity
- 60-80% recovery of sample protein



The image to the left shows an SDS-PAGE gel of His-tagged ubiquitin (His-Ub) enriched from varying levels of background proteins using IMAC PhyTip columns. Purified protein was eluted from the column with 250 mM imidazole. 10  $\mu$ L of each sample was loaded per lane.

Lane 2: 200  $\mu$ g/mL of the pure His-Ub

Lanes 3,4: Duplicate enrichments from 200uL PBS spiked with His-Ub to 5  $\mu$ g/mL

Lanes 5,6: Duplicate enrichments from 200uL PBS, 1% TritonX-100 spiked with His-Ub to 5  $\mu$ g/mL

Lanes 7,8: Duplicate enrichments from 200uL PBS spiked with His-Ub to 5  $\mu$ g/mL and BSA to 1 mg/mL

Lanes 9, 10: Duplicate enrichments from 200uL PBS, 1% TritonX-100 spiked with His-Ub to 5  $\mu$ g/mL and BSA to 1 mg/mL

### Conclusion:

1. Recover 60-80% of fully functional protein with greater than 90% purity:

-Pre PhyTip column enrichment concentrations (5  $\mu$ g/mL) were 40X lower than the pure His-Ub control (200  $\mu$ g/mL). However, similar recovery of the PhyTip column enriched samples is shown in lanes 3-10 compared to the control in lane 2, demonstrating 60-80% recovery.

-The purity is demonstrated by the absence of background proteins.

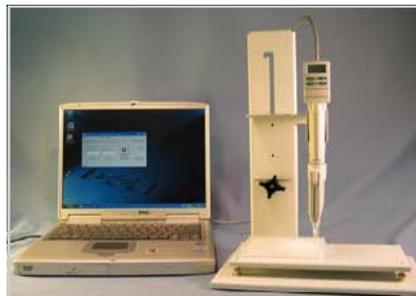
2. PhyTip IMAC columns are processed in a high throughput, automatable format.

## PhyTip® IMAC Columns for Purification of His-tagged proteins

PhyTip columns are specifically manufactured for the automated MEA bench top, walk-away system.



PhyTip columns can also be used with the ME 200 and ME 1000 semi-automated purification systems.



### PhyTip IMAC columns available (part numbers below):

200 µL column with IMAC resin volume of 5 µL and 20µL

1000 µL column with IMAC resin volume of 10, 20, 40, 80, 160, and 320µL

#### IMAC column Part Numbers:

**PTR 42-(05 or 20)-03**

**PTR 92-(05 or 20)-03**

**PTR 41-(10,20,40,80,16 or 32)-03**

**PTR 91-(10,20,40,80,16 or 32)-03**

#### Description:

48 200µl columns, (5 or 20µL IMAC Affinity resin bed volume)

96 200µl columns, (5 or 20µL IMAC Affinity resin bed volume)

48 1ml columns, (10,20,40,80,160 or 320µL IMAC Affinity resin bed)

96 1ml columns, (10,20,40, 80,160 or 320µL IMAC Affinity resin bed)

### PhyTip columns are highly adaptable and may be used with a number of other liquid handlers:

Beckman FX series

Part Number: **PTB 92-05-03**

Tecan Temo

Part Number: **PTT 92-(05 or 20)-03**

Packard P235 Tips

Part Number: **PTP 92-(05 or 20)-03**

Caliper Sciclone

Part Number: **PTZ 92-(05 or 20)-03**

PhyTip columns are also compatible with a number of other liquid handlers.

