ACTIVE MOTIF

Histone Purification Kits

improve quality, yield and preservation of histone marks during sample prep

Active Motif is the only company to offer a method for purification of core histones. Our Histone Purification Kits utilize a proprietary histone purification technique that preserves histone modifications and produces higher purity and yield than acid extraction methods for higher quality sample preparation. The kits enable purification of core histone proteins from cell or tissue samples and are available in maxi, mini and microplate-based formats to suit your throughput needs.

Histone Purification Advantages

- **Exclusivity** – only commercial kits for histone purification
- **Quality** – enhanced histone purity and preservation of histone modifications
- **Scalability** – 3 throughput formats to suit your needs
- **Flexibility** – works with cell or tissue samples

The Histone Purification Method

Active Motif's **Histone Purification**, **Histone Purification Mini** and **Histone Purification Microplate Kits** are the only commercially available assays for isolating purified core histones. The assays were designed to overcome the limitations of crude acid extraction methods for isolation of core histones. Our Histone Purification Kits use a unique purification resin and a series of proprietary elution buffers to isolate extremely pure fractions of histones from any cell or tissue sample. Histone purification eliminates contaminating acid-insoluble cellular proteins that are left behind with standard acid extraction protocols. Removal of these impurities prevents enzymatic alterations to histone modifications. The results are improved yields, purity, and preservation of modifications above what is achievable with crude acid extraction (Figure 1) to ensure you have the highest quality histone samples for use in your downstream analysis.

Which kit is right for you?

Active Motif's Histone Purification Kits are available in multiple formats so you can choose the one that best fits the needs of your assay. Use Table 1 below to determine which kit is right for you. For complete details on our histone purification products, please visit us at **www.activemotif.com/histonepur**.

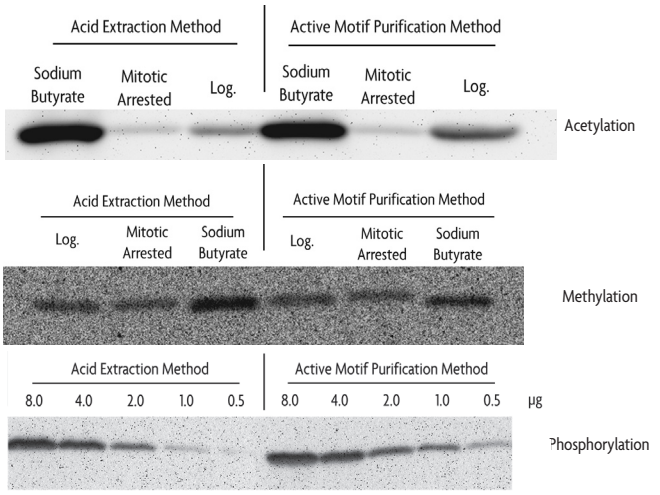

Figure 1: Acetyl, methyl & phosphoryl post-translational modifications are preserved as well or better with Histone Purification compared to acid precipitation methods. Western blot analysis of histone modifications comparing samples isolated by standard acid extraction vs. with the Histone Purification Kit. Top: Histone H3 phospho Ser28 mAb (Cat. No. 39098). Center: Histone H4 tetra-acetyl pAb (Cat. No. 39177). Bottom: Histone H3 trimethyl Lys4 pAb (Cat. No. 39159).

Kit	Application	Format	Elution	Capacity	Purifications
Histone Purification Kit	 • Low throughput • Large sample quantities	Gravity Flow	Separate H2A/H2B & H3/H4 fractions	0.5-2.5 mg	10
		Spin Column	H2A, H2B, H3 & H4 in a single fraction	0.5-2.5 mg	10
Histone Purification Mini Kit	 • Medium throughput • Mid-range sample quantities	Mini Spin Column	H2A, H2B, H3 & H4 in a single fraction	0.1-0.5 mg	20
Histone Purification Microplate Kit	 • High throughput • Low sample quantities	96 Stripwell Plate Spin Column	H2A, H2B, H3 & H4 in a single fraction	< 0.48 mg	96

Table 1: Specifications for Active Motif's Histone Purification Kits.

Improve the consistency and reliability of your analysis of histones and their post-translational modifications by using purified histone samples. Our proprietary histone purification method is available in three different format options to suit the throughput needs of your downstream analysis.

Histone Purification Kit

The **Histone Purification Kit** enables you to isolate core histones from any cell culture or tissue sample. It was designed for larger sample amounts; the kit contains 10 columns, each with a capacity of 0.5-2.5 mg. Two options are available for purification – the core histones may be purified using the convenient spin column format as one total population containing H2A, H2B, H3 and H4, or further purified into separate fractions of H2A/H2B dimers and H3/H4 tetramers by using the efficient gravity flow protocol (Figure 2).

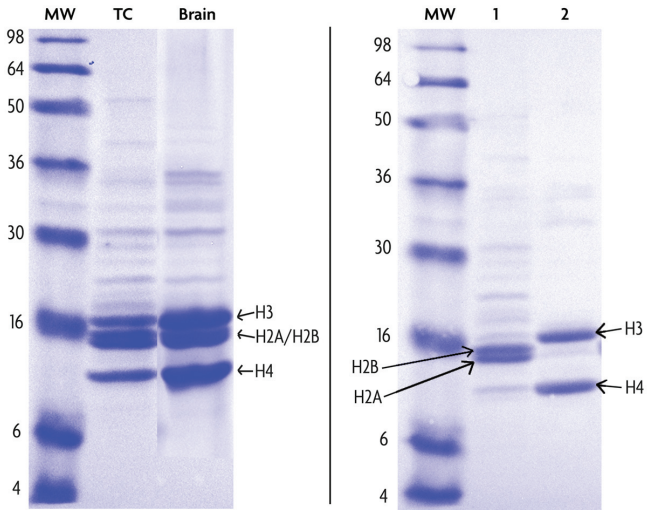

Figure 2: SDS-PAGE of histone fractions purified using the Histone Purification Kit. 10 µg of sample were loaded per lane. Left panel: single fractions of core histones purified from logarithmically growing tissue culture cells (TC) and core histones isolated from rat brain tissue (Brain). Right panel: separate H2A/H2B and H3/H4 fractions purified from HeLa cells.

Histone Purification Mini Kit

The **Histone Purification Mini Kit** offers the same proprietary purification protocol as the original Histone Purification Kit but was designed to process smaller samples. It uses a more convenient mini spin column-based format, each with a capacity of 0.1-0.5 mg. This kit enables 20 purifications and allows for extraction of the core histones as one total population. However, unlike the original kit, the Mini Kit cannot be used to separate histones into discrete H2A/H2B and H3/H4 fractions.

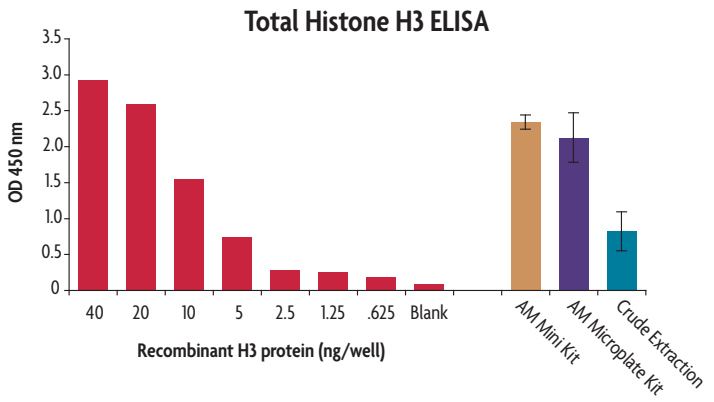

Figure 3: Active Motif's Histone Purification Mini and Microplate kits show improved histone yield over crude acid extraction as measured using the Total Histone H3 ELISA Kit. The Total Histone H3 ELISA Kit (Catalog No. 53110) was used to generate a standard curve with the kit's Recombinant Histone H3 protein (red). The kit was then used to quantify the amount of Total H3 in purified histone samples obtained using the Histone Purification Mini Kit and the Histone Purification Microplate Kit as compared to samples isolated using crude acid extraction. Results show Active Motif's histone purification method significantly improves yield over crude acid extraction.

Histone Purification Microplate Kit

The **Histone Purification Microplate Kit** offers the same proprietary purification protocol as the original Histone Purification Kit, but uses a convenient plate-based format for high-throughput processing of small sample volumes. This kit is ideal for researchers with limited starting material or who are seeking a method to readily transition their samples to downstream 96-well plate-based screening or profiling assays, such as our Histone Modification ELISAs (Figure 3). Similar to the Mini Kit, the Histone Purification Microplate Kit purifies core histones as one total (H2A, H2B, H3 and H4) population; it cannot fractionate the histones into discrete H2A/H2B and H3/H4 fractions.

To learn more about our products for histone purification, please visit us at www.activemotif.com/histonepur.

Product	Format	Cat. No.
Histone Purification Kit	10 rxns	40025
Histone Purification Mini Kit	20 rxns	40026
Histone Purification Microplate Kit	96 rxns	40027

TO PLACE AN ORDER, call us or send an email to orders@activemotif.com.