**Graphical Abstract**

Supplementary Figure 1. *Xenopus HP1 α and γ can homo- and heteromericise in vitro.*

A. 2μg of recombinant histidine-tagged xHP1α (His-xHP1α) was cross-linked with a range of glutaraldehyde concentrations (lanes marked 1 mM to 50 mM) and separated in a 10% SDS-PAGE gel stained with Coomassie blue. ‘d’ indicates the xHP1α dimer and ‘m’ indicates the xHP1α monomer. M, protein size marker with molecular weights on the left.

B. 2μg of recombinant histidine-tagged xHP1γ (His-xHP1γ) was cross-linked with glutaraldehyde and gel separated. ‘d’ indicates the xHP1γ dimer and m indicates the xHP1γ monomer. M, protein size marker with molecular weights on the left.

C. Purified recombinant histidine-tagged xHP1α (His-xHP1α) was incubated with GST, GST-xHP1α (G-HP1α) and GST-xHP1γ (G-HP1γ) coupled to glutathione-Sepharose in PBS in the presence of 0.5 M and 1.0 M NaCl. The Sepharose beads were spun down and washed and bound proteins were separated by SDS-PAGE. HP1 proteins were visualised by Western blotting using an anti-histidine tag antibody.

D. 35S-methionine-xHP1γ was prepared by in-vitro transcription-translation of full-length cDNAs. The [35S] methionine-labeled protein (arrow) was used in binding reactions with the indicated GST fusion proteins. The input lane represents half of the total 35S-xHP1 in each reaction mixture. No binding was observed in reactions containing either GST alone or with a chromo domain (CD) fusion.
Supplementary Figure 2.

A. Far-Western of His-xHP1α, GST-xHP1α-chromodomain, GST-xHP1α-Hinge, GST-xHP1α and GST probed with purified histone H1 (H1) followed by secondary detection with a Pan-Histone antibody. Note that H1 interacts with the hinge region of xHP1α.

B. Far-Western of His-xHP1α, GST-xHP1α-Hinge, GST-xHP1α and GST probed with purified histone H5 (H5) or a mixture of Histone H1 and H5 (H1/H5), followed by secondary detection with an anti-Histone H5 antibody. Note that H5 interacts with the hinge region of xHP1α. In addition, the presence of H1 inhibits the binding of H5, which suggests that H1 has a higher affinity for GST-xHP1α. Similar observations were made in GST pull down experiments.
Supplementary Figure 3.

A. Coomassie-stained gel showing the composition of native chromatin (N) and purified core histones (C). Histone H3 is indicated by an arrow.

B. Western blot of the same samples in A, probed with an antibody specific for dimethylated lysine 9 of histone H3 (arrow).

C. Far-Western of similar samples, probed with GST-xHP1α, followed by secondary detection with an anti-GST antibody. Note that xHP1α interacts preferentially with both histone H3 and with H5. The H1 content was too low to be detectable in this assay. The GST-only control was negative under these conditions (not shown).

D. Western blots of the native chromatin, probed with an antibody specific for either tri-methylated lysine 9 of histone H3 (TriMeH3) or histone H3 (H3).
Supplementary Figure 4.

A fixed amount (50µg) of soluble chicken chromatin was incubated with increasing amounts (5, 10, 20 and 40 µg) of GST, GST-xHP1α or GST-xHP1-hinge coupled to glutathione-Sepharose. The DNA extracted from chromatin in the pellet and the supernatant fractions was visualised by ethidium bromide staining of a 1.5% agarose gel. Only the input and pellet (bound) fractions are shown. The alternative nucleosome ladder is bound preferentially at a high chromatin to protein ratio. The GST pull-downs were negative (not shown).