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ChIP-On-Chip

National Cancer Institute

Source

National Cancer Institute. ChIP-On-Chip. NCI Thesaurus. Code C106050.

A molecular genetic technique that combines chromatin immunoprecipitation (ChIP) with DNA microarray technology to find candidate binding sites of DNA-associated proteins in a biological specimen. First, crosslinked protein-DNA complexes are isolated using ChIP. Next, the crosslinks are broken, the proteins are removed and the purified DNA is amplified, denatured and labeled with a fluorescent tag. The labeled, denatured DNA fragments are applied to a DNA microarray where they can hybridize to their complementary DNA sequence. After hybridization occurs, the microarray chip is imaged and the captured fluorescence signals from the array are normalized and subjected to statistical analysis. Finally, validated positive spots on the microarray can predict which DNA sequences interact with the protein of interest.