H3K27M Mutation

see Diffuse midline glioma H3 K27-altered.

H3K27M Mutation (Histone H3 Lysine 27 to Methionine Mutation): The H3K27M mutation is a specific genetic alteration involving the substitution of the amino acid methionine (M) for lysine (K) at position 27 on the histone H3 protein. This mutation is most commonly associated with aggressive and malignant brain tumors, particularly diffuse midline gliomas. H3K27M mutations lead to changes in the epigenetic regulation of genes, resulting in uncontrolled cell growth and tumor formation. These mutations are often linked to poor treatment outcomes, making them a significant focus of research and clinical trials in the field of neuro-oncology. Understanding and targeting H3K27M mutations is crucial for developing effective therapies for affected patients, particularly children and young adult