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Emerging opportunities to target gene transcription and DNA repair in drug discovery

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Propositions

Belonging to the thesis

Emerging Opportunities to Target Gene Transcription and DNA Repair in Drug Discovery

by Deng Chen

1. DNA processing mechanisms are fundamental to all cellular activities.
2. Histone acetyltransferase modulators, which regulate DNA transcription, hold promise as potential drug candidates. (Chapter 2)
3. Combination treatment in cancer therapy with two sub-cytotoxic doses of compounds/therapeutic proteins can selectively eliminate undesirable cells. (Chapter 3&7)
4. Activity-based probes serve as powerful tools for the identification of novel protein functions. (Chapter 4&5)
5. The unexpected identification of a bromodomain-like region in 15-lipoxygenase-1 that acts as acetyl-lysine-histone 'reader' suggests a yet unidentified role for this protein in chromatin remodeling. (Chapter 4)
6. Interfering with the association of macrophage migration inhibitory factor (MIF) and apoptosis-inducing factor (AIF) provides a new approach to prevent parthanatos. (Chapter 6)
7. Looking from the iron side, DNA damage and ferroptosis are tightly connected. (Chapter 7)
8. Unexpected but repeatable results are precious for a project.
9. Nature has designed life, and we just need to figure out how it works.