the sequence of replicated DNA strands. By comparing the replicated DNA with the original template, researchers can identify errors, mutations, and changes that occurred during replication.

DNA [illegible]: By incorporating labeled nucleotides into the growing DNA strands during replication, researchers can track the movement and progression of the replication fork. Pulse-chase experiments involve labelling DNA at speci c time points, followed by a chase period with unlabelled nucleotides, providing information about the speed and direction of replication [4].

E[illegible]: Electron microscopy allows researchers to visualize the ultrastructure of DNA replication. It provides high-resolution images of replication forks, replicating DNA strands, and associated proteins. is technique helps elucidate the spatial organization and dynamics of the replication process.

To study DNA replication, researchers o en utilize cell culture systems or model organisms. Cultured cells can be synchronized to study speci c stages of replication, and genetic modi cations can be

to monitor the progression of replication and detect any abnormalities or errors. Checkpoints act as quality control checkpoints, allowing the cell to pause or halt replication if necessary, thus preventing the transmission of faulty genetic material. ese safeguards demonstrate