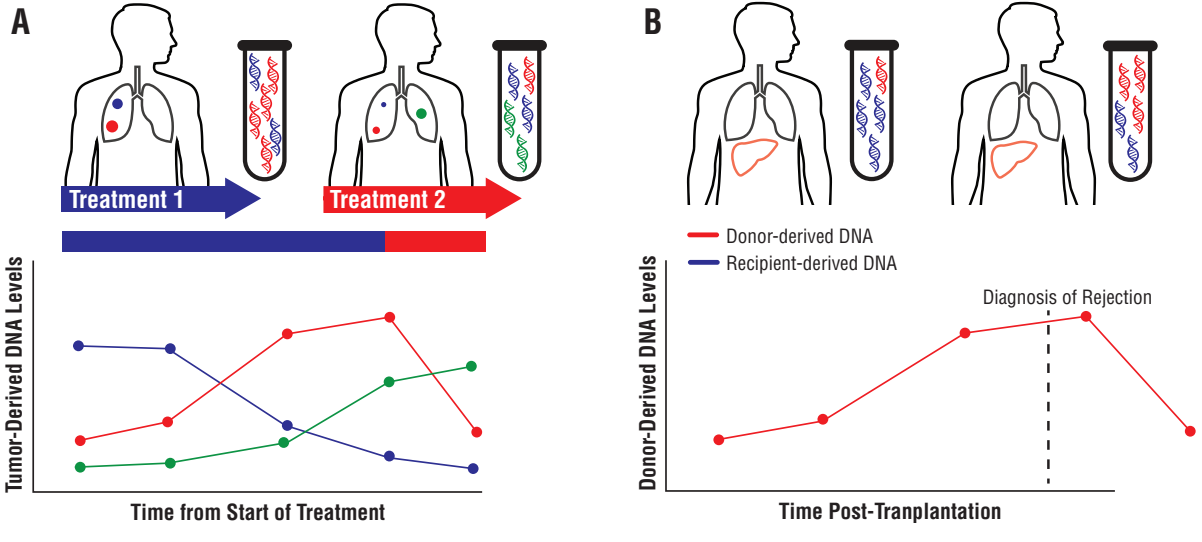
**F1** Cell-free DNA for noninvasive monitoring of cancer and transplantation.




**(A)** Longitudinal analysis of tumor-derived cell-free DNA to monitor the efficiency of cancer therapies. Mutations in different tumor lesions (represented by different colors) correspond to the tumor-derived DNA detected in the liquid biopsy samples (e.g. plasma, urine, CSF, saliva). ctDNA mutation dynamics are tracked throughout the treatment to monitor the therapy responses and identify the dominant mechanisms of resistance, guiding subsequent treatment.

**(B)** After transplantation, donor-derived (in red) and recipient-derived (in grey) cfDNA can be detected in plasma. A rise in donor-derived cfDNA suggests a rejection event before diagnosis is confirmed by biopsy.