Abstract:
Fluorescence in situ hybridization (FISH) plays an essential role in research and clinical diagnostics. The versatility and resolution of FISH depends critically on the probe set used. Here, we describe an improved approach for the generation of specific DNA probes from single copies of chromosomes. Single chromosomes or single chromosomal regions were microdissected by laser pressure catapulting and amplified using linker-adaptor PCR. The probes were labeled and tested in various scenarios including multicolor-FISH experiments employing up to seven different fluorochromes. FISH confirmed the specific and even staining of the respective chromosomal regions. Furthermore, the capability of these probes to detect even small translocations (<3 Mb) suggests that the dissected regions are completely represented in the generated painting probes.