

Abstract

Repetitive sequences are important compartments of the genome and they are important for the whole organism as well. These non-coding sequences take a lot of space in the genome and they are called „junk DNA“. However, they are valuable in many science sectors, especially because of their polymorphic character among individuals and also among tissues of one individual. This work pursues the significance of microsatellite repeats in clinical and forensic genetics. Some tumors have microsatellite instability (MSI) when compared to the repeats in the healthy tissue. This can be used to diagnose cancer. MSI sometimes appears before the disease fully breaks out, which could lead into an early diagnosis of cancer. MSI is associated with better prognosis. Forensic genetics takes advantage of microsatellite polymorphism among individuals. DNA profiling is used to identify persons in criminal investigations but also in parental testing or protection of wild animals.