CONTINUING EDUCATION TEST
Microsatellites and VNTR typing in clinical settings
May 2019 (This form may be photocopied. It is no longer valid for CEUs after November 30, 2020.)

TEST QUESTIONS  Circles must be filled in, or test will not be graded. Shade circles like this: ☐ Not like this: ☐

1. The most common method for DNA profiling is
   - a. microarray
   - b. allele-specific oligonucleotide
   - c. macromolecule blotting and probing
   - d. VNTR (Variable Nucleotide Tandem Repeat)

2. The only phenotypic information about the source identified in DNA profiling is
   - a. behavior
   - b. gender
   - c. hair color
   - d. height

3. Multiple tandem repeats of a single short nucleotide is referred to as
   - a. microaggregates
   - b. minisatellites
   - c. microsatellites
   - d. macrosatellites

4. A minisatellite forms when the number of repeated nucleotide elements exceed
   - a. 10
   - b. 20
   - c. 35
   - d. 50

5. The terms STR typing, microsatellite typing, and VNTR typing are used interchangeably in practice.
   - a. True
   - b. False

6. The human genome makes up about _______ percent of microsatellites?
   - a. 1
   - b. 3
   - c. 5
   - d. 8

7. It is clearly researched that microsatellites have consistent useful biological function as all being pathogenic.
   - a. True
   - b. False

8. One of the most common trinucleotide repeat disorders is
   - a. Huntington’s disease
   - b. sickle cell disease
   - c. thalassemia
   - d. Turner syndrome

9. The mechanisms that cause changes in the number of microsatellite repeats are
   - a. polymerase slippage and missense mutations
   - b. unequal crossing over and base substitutions
   - c. polymerase slippage and unequal crossing over
   - d. base substitutions and nonsense mutations

10. The _______ a microsatellite is, the _______ the chances are of polymerase slippage.
    - a. shorter, greater
    - b. longer, lesser
    - c. longer, greater
    - d. none of the above

11. On an evolutionary timescale, the changes in the number of microsatellite repeats are rare.
    - a. True
    - b. False

12. VNTR loci for evaluation are selected to be tested based on
    - a. high allelic diversity
    - b. having high conserved flanking sequence
    - c. good amplification behavior
    - d. all of the above

13. It is possible to combine different, expected product sizes, using different dyes where sizes might overlap in one test system to test for _______ different loci in a single reaction.
    - a. 5-10
    - b. 10-15
    - c. 15-20
    - d. 20-25

14. The readout method measures peaks with known, expected sizes and is performed through
    - a. capillary electrophoresis
    - b. microchip electrophoresis
    - c. PAGE electrophoresis
    - d. none of the above

15. The set of values that are generated by VNTR binning is known as the sample
    - a. size
    - b. threshold
    - c. fingerprint
    - d. none of the above

16. The most common non-forensic setting(s) in which VNTR typing is/are used is
    - a. paternity testing and anatomical pathology for tissue blocks
    - b. paternity testing and background checks
    - c. anatomical pathology and Rh weak D blood typing
    - d. background checks and infectious diseases

17. Sample contamination is a concern for VNTR typing at low level contaminations.
    - a. True
    - b. False

18. All are benefits of VNTR typing except
    - a. high test sensitivity
    - b. good performance on poor quality DNA
    - c. small and easily manipulated data sets
    - d. high sensitivity to contamination

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