1. Trypanosomatids are early eukaryotic protozoans that possess unique molecular features. Based on the referenced article and related Commentary, select the ONE statement that is NOT true: [See J Mol Diagn 2014, 16:400-404 and J Mol Diagn 2014, 16:379-381.]

   a. Trypanosomatid genes typically do not harbor introns but are arranged in large polygenic clusters that are transcribed polycistronically.
   
   b. Polycistronic pre-mRNA is processed into functional monocistronic mRNA molecules by trans-splicing and polyadenylation in trypanosomatids.
   
   c. During trypanosomatid RNA maturation, a conserved spliced leader RNA (SL-RNA) molecule is donated to the 5' end of each individual mRNA.
   
   d. The SL-RNA sequence of the trypanosomatids can be 20 to 35 nucleotides long.
2. Among the trypanosomatids are three major human pathogens: *Trypanosoma brucei*, *T. cruzi*, and *Leishmania* spp. Based on the referenced article and related Commentary, select the ONE statement related to trypanosomatids that is NOT true: [See J Mol Diagn 2014, 16:400-404 and J Mol Diagn 2014, 16:379-381.]

   a. mRNA is considered the best surrogate marker for viable organisms.
   b. mRNA has a typical half-life of 10 minutes after death of the organism.
   c. SL-RNA is a short, noncoding RNA sequence that is conserved, but unique, for each species.
   d. SL-RNA is present in each mRNA molecule in the cell.

3. Trypanosomatid infections cause a series of devastating diseases in man and animals. Based on the referenced article and related Commentary, select the ONE statement that is NOT true: [See J Mol Diagn 2014, 16:400-404 and J Mol Diagn 2014, 16:379-381.]

   a. Sleeping sickness is a devastating disease that is endemic in sub-Saharan Africa.
   b. Sleeping sickness is caused by the *T. brucei* subspecies *gambiense* and *rhodesiense*.
   c. *T. brucei rhodesiense* is associated with the chronic form of sleeping sickness in west and central Africa, whereas *T. brucei gambiense* causes acute sleeping sickness in east Africa.
   d. The trypanosomes are transmitted to humans by tsetse flies and invade the brain.

4. The diagnosis of infectious diseases has advanced significantly with the development of molecular diagnostics. Based on the referenced article and related Commentary, select the ONE statement that is NOT true: [See J Mol Diagn 2014, 16:400-404 and J Mol Diagn 2014, 16:379-381.]

   a. Trypanosomatidae have developed mechanisms of gene expression that set them apart from all other eukaryotes.
   b. The number of SL-RNA copies in a cell is at least 10,000.
   c. The unique sequence of the SL makes its reverse-transcribed PCR amplification specific to the pathogen, only limited by the probability of a 39-base sequence occurring at random in the human genome.
   d. The conservation of the SL sequence within the genera suggests that assays can be designed that could target multiple species.

5. Malignant pleural mesothelioma (MPM) is an aggressive cancer originating from the mesothelial cells lining the pleura. Based on the referenced article, select the ONE statement that is NOT true: [See J Mol Diagn 2014, 16:418-430.]

   a. Patients diagnosed with MPM typically have a history of long-term exposure to asbestos.
   b. Patients diagnosed with MPM have a median survival of 24 months from the time of diagnosis.
   c. Patients with MPM usually present with symptoms of pleural effusion (ie, chest pain and breathlessness).
   d. Patients with MPM present less commonly with constitutional symptoms, such as weight loss and fatigue.

6. A major contributing factor to the poor prognosis of MPM is that symptoms generally occur at an advanced stage of the disease. Based on the referenced article, select the ONE statement that is NOT true: [See J Mol Diagn 2014, 16:418-430.]

   a. MPM is often difficult to diagnose, which further hampers effective treatment.
   b. Trimodal therapy is currently the preferred treatment modality consisting of chemotherapy, cytoreductive surgery, and radiotherapy.
   c. The majority of MPM patients are eligible for trimodal therapy.
   d. MPM is classified histologically as epithelioid, sarcomatoid, or biphasic subtypes, known to have better, worse, and intermediate prognosis, respectively.

7. The main diagnostic criterion for MPM is deep invasion in the pleura and underlying fat tissue. Based on the referenced article, select the ONE statement that is NOT true: [See J Mol Diagn 2014, 16:418-430.]

   a. Deep invasion in the pleura and underlying fat tissue can be easily demonstrated radiologically and histologically in small pleural biopsies.
   b. Epithelioid MPM can be challenging to distinguish from reactive mesothelial hyperplasia.
   c. Sarcomatoid MPM may resemble fibrous pleurisy.
   d. At present, there are no accepted diagnostic biomarkers for MPM.

8. MicroRNAs (miRs) are short non-coding RNAs that silence gene expression by base-pairing to complementary sequences primarily within the 3'-untranslated regions (3'-UTR) of target RNA. Based on the referenced article, select the ONE statement that is NOT true: [See J Mol Diagn 2014, 16:418-430.]

   a. It is estimated that miRs target 3'-UTRs in nearly 50% of human mRNAs.
   b. The latest version (release 19) of the miRBase database contains 2042 entries of mature human miRs.
   c. miRs are known to regulate several fundamental cellular and cancer-related processes, including proliferation, apoptosis, invasion, metastasis, cell-cycle control, and metabolism.
   d. miRs are particularly attractive as biomarkers in tissue samples processed for routine pathology.
9. Follicular lymphoma (FL) is the most common indolent type of non-Hodgkin lymphoma. Based on the referenced article, select the ONE statement that is NOT true: [See J Mol Diagn 2014, 16: 467-476.]

   a. The characteristic chromosomal translocation of FL, t(14;18)(q32;q31), is present in nearly 60% of cases.
   b. The clinical course of FL is characterized by initial good responses to systemic therapies, including combinations of immunotherapy and chemotherapy.
   c. The clinical course of FL is characterized by frequent relapses due to the inability of current treatment regimens to eradicate the neoplastic clone.
   d. In addition to clinical characteristics, risk stratification takes advantage of genetic and molecular markers.

10. A clinical predictor of outcome for FL is the FL International Prognostic Index (FLIPI), based on age, stage, hemoglobin, number of nodal site areas, and lactate dehydrogenase. Based on the referenced article, select the ONE statement that is NOT true: [See J Mol Diagn 2014, 16: 467-476.]

   a. The FLIPI has been improved by the development of the FLIPI2 score, based on age, bone marrow involvement, hemoglobin, diameter of the largest lymph node, and β2-microglobulin.
   b. The transposition of the BCL2 oncogene to the regulatory region of the immunoglobulin heavy chain gene IGH leads to the down-regulation of BCL2.
   c. The use of qualitative PCR allows a rapid detection of the chimeric BCL2-IGH rearrangement in up to 80% of cases.
   d. Qualitative PCR is an important tool for the diagnostic workup and clinical follow-up of patients with FL.

11. In addition to genetic alterations, epigenetic modifications play an important role in lymphomagenesis. Based on the referenced article, select the ONE statement that is NOT true: [See J Mol Diagn 2014, 16: 467-476.]

   a. The epigenetic silencing of tumor suppressor genes is considered a common event in the early stage of FL transformation.
   b. Epigenetic silencing targets cell cycle inhibitors p15 (CDKN2B), p16 (CDKN2A), and p57 (CDKN1C) and the pro-apoptotic gene death-associated protein kinase 1 (DAPK1) in FL.
   c. Promoter hypermethylation of DAPK1 has been detected in 50% of FL.
   d. DAPK1 is among the 10 genes with the most significant increase in methylation in FL.

12. The development of quantitative methods that allow specific and sensitive detection of aberrant DNA methylation has increased interest in exploring epigenetic markers for the study of minimal residual disease. Based on the referenced article, select the ONE statement that is NOT true: [See J Mol Diagn 2014, 16: 467-476.]

   a. The epigenetic markers used for the evaluation of minimal residual disease include ESR1 and p15 in acute myeloid leukemia.
   b. In acute lymphoblastic leukemia, the epigenetic markers used for the evaluation of minimal residual disease include TP73, p15, and p57.
   c. The epigenetic marker used for the evaluation of minimal residual disease in diffuse large B-cell lymphoma includes p57.
   d. The epigenetic marker used for the evaluation of minimal residual disease includes DAPK1 in neuroblastoma.