# Module 5 Quiz

1. Multiple animal models of a given disease are needed to model the full course of disease progression and the potential opportunities for intervention.
    a. True
    b. False
2. The most frequent animal models of cancer used in preclinical studies are tumor injection models in immuno-compromised mice.
    a. True
    b. False
3. In the animal model of pancreatic cancer, nucleolar collapse was an independent biomarker for assessing the effects of Metarrestin, in addition to examining metastatic burden.
    a. True
    b. False
4. The orthotopic model of pancreatic cancer in the mouse provided the opportunity to study the effects of Metarrestin on both the primary tumor and the process of metastasis.
    a. True
    b. False
5. Pharmacokinetics plays an important role in which aspects of drug discovery and development:
    a. Designing dose regimen in animal models
    b. Guiding structure optimization by medicinal chemists
    c. Selecting lead candidates based on drug-like properties
    d. Assessing therapeutic window
    e. Guiding dose selection for human clinical trials
    f. All of the above
6. The ADME acronym stands for:
    a. Absorption, Digestion, Metabolism, and Excretion
    b. Absorption, Distribution, Metabolism, and Excretion
    c. Absorption, Distribution, Metabolism, and Engagement
7. In order to assess the safety profile of a compound for human studies, rodent and non-rodent species are used to examine outcomes such as cardiac, respiratory, and neurologic toxicity.
    a. True
    b. False
8. The Maximum Recommended Starting Dose (MRSD) is based on the toxicity seen in the most sensitive species.
    a. True
    b. False

Answer Key

1. True
   It is unlikely any one animal model would faithfully recapitulate all aspects of a complex disease. Having access to multiple faithful animal models of the human disease may reduce attrition of lead compounds in preclinical studies.
2. True
   This model is the most frequent but has limitations regarding being able to understand the initiation and progression of cancer in an organ-specific context and the contribution of the immune system in the maintenance of the cancer. This highlights why it is important to have multiple models in order to be able to examine specific aspects of a given disease.
3. True
   The independent biomarker provided an additional metric for assessing the effects of Metarrestin and replicated what had been seen in the in vitro cell culture models.
4. True
   This was a significant advantage for the orthotopic model over other mouse models.
5. All of the above
6. Absorption, Distribution, Metabolism, and Excretion
7. True
   Each animal model provides specific data that is used to inform the starting dose for human clinical trials.