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Proteomics

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Exercises 6

1. **Targeted proteomics**

   Why do we need to carefully select the target peptides in a targeted proteomics experiment?

2. **Targeted proteomics**

   Why don't we target all the peptides of the given protein?

3. **MRM transitions Multiple Choice Question (Single Answer)**

   Which of following information is contained as the input of the instrument for an MRM experiment?

   - mass-to-charge of the precursor ion
   - peptide sequence
   - mass-to-charge of the fragmented ion
   - protein sequence

4. **MRM Multiple Choice Question (Single Answer)**

   In SRM/MRM experiment, what is recorded by the mass spectrometer?

   - the targeted peptide
   - the fragmented ion
   - the targeted protein

5. **SWATH acquisition**

   You want to run a SWATH experiment for an m/z range of 400 to 2000 Th. The mass spectrometer needs 0.5 seconds for an MS2 scan. What would be the best swath (window) size to get at least 200 scans for each window along your expected retention time of 1 hour.

   Size = ? Th.

6. SWATH → MRM, shotgun

   Compare SWATH acquisition and analysis with MRM and shotgun techniques. Name at least two similarities and two differences for each of the two comparisons. Elaborate on them shortly.