Proteins Separated by Gel Electrophoresis

The following table contains some helpful considerations to assure optimal results:

Use pre-cast gels	Please use pre-cast Invitrogen NuPAGE Bis-Tris SDS-PAGE gels instead of casting them yourself.
Beware of Contaminations	Dust particles contain high levels of proteinaceous contaminations, e.g. **keratines** (hair and skin particles, fuzzy clothes) therefore carry out all staining steps in a **closed dish**, use chemicals and solutions dedicated to "mass spectrometry". Thoroughly wash anything that will come into contact with your sample (i.e. gel apparatus, staining trays, gel excising implements, gel storage equipment, and Eppendorf vials), filter solutions if necessary. Wear **powder free gloves** and lab coats at all times during sample preparation, cut the bands/spots under a **laminar flow** hood and **do not touch the vials** at any stage of the sample preparation **without gloves**.
Use Compatible Protein Staining Techniques	There are several methods applied to visualize proteins after gel electrophoresis. Unfortunately not all of them are **compatible** with the mass spectrometric analysis. Coomassie staining techniques are in general ideal for these investigations. However, there are some cases, when higher sensitivity is needed. **Note, that silver staining applying glutaraldehyde in the sensitizing solution is not compatible with mass spectrometry!** For this reason we recommend to use an alternative silver staining protocol. In case of silver staining **do not overstain** the gel, keep the background clear! According to our experiences, overstaining reduces the yield of identifiable peptides from the sample substantially!
Minimize Empty Gel Volume	Keep the volume of the empty gel matrix as small as possible, cut away unstained gel materials.
Fresh Sample	Submit the samples as soon as possible, freeze them only, if you can guarantee, that they do not thaw during transfer to our lab.