Tips on how to avoid keratin contamination!!

A common problem to mass spectrometry analyses is keratin contamination which originates from skin, hair as well as dust, clothing and latex gloves. If keratins are present in high concentrations, they can interfere with mass spectrometry analyses causing loss in signal and decreased identifications.

Listed below are few hints that will help you to minimize keratin contamination:

- Anything that touches the gel or sample is a possible source of contamination. Avoid storing gel in saran wrap or similar material and instead use new, cleaned plastic or glass gel trays.
- Perform all sample preparation steps in a laminar flow hood, if possible.
- Wipe down surfaces with water and ethanol.
- ALWAYS USE NON-LATEX GLOVES and wear lab coats.
- Store consumables and reagents in covered containers, this includes: gels, all liquid and powdered reagents, pipette tips, etc.
- No wool clothing in the lab!
- To avoid BSA or other contaminations from western blot assays: do not use the same plates or gel containers.
- For gel electrophoresis, wash all glass plates thoroughly with 70% ethanol prior to casting an SDS-PAGE gel. After completing gel electrophoresis step, disassemble the glass plates in a laminar flow hood. Destain the gel in a clean container that has been rinsed thoroughly with 70% ethanol or methanol/acetonitrile.

Preferences for gel-based sample submissions

- We recommend you use precast gels (NuPAGE gels, Invitrogen), pre-mixed buffers (MES or MOPS SDS Running Buffer, Invitrogen), and pre-mixed loading buffer (NuPAGE LDS Sample Buffer, Invitrogen).
- For better protein separation use gradient gels.
- Stain gels with colloidal coomassie G-250 or pre-mixed colloidal blue staining solution (Invitrogen). If you need a more sensitive stain, we recommend Sypro ruby stain. Take a UV gel image before submitting the gel.
- Store gels in 3% Acetic Acid, at 4°C.
- Gels submitted for binding partner ID analyses should be run maximum 1 cm sample lane length and **lightly** stained with coomassie.

Preferences for in-solution sample submissions

- If detergents are necessary during sample preparation, please consider using RapiGest (Waters Corp) or another MS-compatible surfactant.
- All other detergents are not MS-compatible and must be removed prior to sample submission.
- Please determine the protein concentration using a BCA or Bradford assay prior to sample submission and include this information on the sample submission form.