WHAT TO DO ABOUT BUFFERS AND SALTS

- It is **BEST TO AVOID** the use of non-volatile agents such as salts (NaCl, CaCl2, KH2PO4 etc), detergents (SDS, Triton, etc), chaotropic agents (Urea, Guanidinium salts etc) and buffers/solvents such as DMSO, glycerol, TRIS, CHAPS, HEPES, citrates, perchlorates, DMF etc. They will lead to poor ionization. If unavoidable, see below to remove or reduce their concentration.
- If they are used, then you must purify. The preferred techniques are:
  - Reversed phase HPLC using C4, C8, or C18 columns
  - ZipTip desalting - purification and concentration of femtomoles to picomoles of protein, peptide or oligonucleotide samples. ZipTips are available as C18, C4 or metal chelate (His-tagged proteins or phosphopeptides). For more information see http://www.millipore.com/userguides/tech1/p36241
  - Ultrafiltration - a gentle method to purify & concentrate protein samples. Small spin columns can be purchased with specific MW cut-off filters, which allow you to select for the size of your protein. For more information see http://www.millipore.com/ and http://www.pall.com/
  - On-plate desalting - can be performed by the facility for MALDI samples only.
- What **CAN** you use?
  - Volatile solvents and buffers like water, ammonium hydrocarbonate, ammonium acetate, ammonium formate, acetonitrile, methanol, trifluoroacetic acid, formic acid, ammonium hydroxide and acetic acid.
  - Please see table of maximum acceptable concentrations of surfactants, buffers and salts, please see the link “Learn more about buffers”