MALDI Matrix Guide

Different matrices are recommended for different types of molecules. Preparation of these matrices in different solvents (at 10 mg/mL) can vary ionization of your analyte.

- a-Cyano-4-hydroxycinnamic acid (CHCA)
- Sinapic acid (SA)
- 2-(4-Hydroxyphenylazo) benzoic acid (HABA)
- 2,5-Dihydroxybenzoic acid (DHB)
- 2,4,6-Trihydroxyacetophenone (THAP)
- 3-Hydroxypicolinic acid (3-HPA)
- 6-aza-2-thiothymine (ATT)

	Matrices						
	CHCA	SA	DHB	THAP	3-HPA	HABA	ATT
Protein		B,C	D			A,F	
Peptide	A,B,E		A,D	A,C			
Carbohydrate			D	A,C			
Nucleic acids				A,C	A		
Oligonucleotide				A,C,H	G		A
Oligosaccharide			D			A,F	A
Glycopeptides			D				

	Solvents
A	50% acetonitrile, 0.1% TFA
B	isopropanol:water:formic acid (2:3:1)
C	75% acetonitrile, 0.1% TFA
D	50% ethanol, 0.1% TFA
E	60% ethanol, 36% acetonitrile, 4% water
F	40% acetonitrile, 40% methanol, 20% water
G	50% acetonitrile, 0.1% TFA, 10% 50 mg/mL ammonium citrate
H	50% ethanol, 50% 15 mg/mL ammonium citrate in 50% acetonitrile, 0.1% TFA

Sample preparation

- Mix equal volumes of sample with matrix solution.
- Spot 1 μL on the MALDI target.
- Air dry 10 min.

Contaminant Concentration Tolerated in MALDI -TOF-MS

	Maximum allowable Contaminant concentration (approx.)
Urea	0.5M
Guanidine-HCl	0.5M
Dithiothreitol	0.5M
Glycerol	1%
Alkali metal salts	<0.5M
Tris buffer	0.05M
NH_4HCO_3	0.05M
Phosphate buffer	0.01M
Detergents (not SDS)	0.1%
SDS	0.01%