Compare Ionizations

Ionization Method	Typical Analytes	Sample Introduction	Mass Range	Method Highlights
ESI	Peptides, proteins, nonvolatile	Liquid chromatography, or syringe	To 200k daltons	Soft method, Ions often multiply charged
MALDI	Peptides, proteins, nucleotides	Samples mixed with solid matrix	Too 500k daltons	Soft method, very high mass
APCI	Small, polar, non-polar	Liquid chromatography, or syringe	To 1000 daltons	Soft method, molecular ion peak $[M+H]^+$
DART	Small, polar, non-polar	liquid/solid probe	To 1000 daltons	No sample preparation needed, gaseous, liquid or solid samples
EI	Small volatile	GC, or liquid/solid probe	To 1000 daltons	Hard method, versatile, provides structure info
CI	Small volatile	GC, or liquid/solid probe	To 1000 daltons	Soft method, molecular ion peak $[M+H]^+$
FAB	Carbohydrates, organometallics, peptides, nonvolatile	Samples mixed with viscous matrix	To 6000 daltons	Soft method, but harder than ESI and MALDI