be determined in a number of solvents covering a range of polarities that are commonly used in method development.

Solubilities should be determined in aqueous and organic solvents, such as

Aqueous	*Organic*
Water	Ethanol/methanol
Buffers	Chloroform
0.1 N HCl	Cyclohexane
0.1 N NaOH	Acetonitrile
	Tetrahydrofuran

Spectral libraries are established, and information gleaned is useful for selection of initial conditions for an HPLC separation. On the other hand, however, sometimes this physicochemical information may not be known or available, so that an initial separation would have to be tried, based on prior experience, in order to determine a course of action for subsequent experimentation.

4.2. What Is Known About the Sample

Ideally, knowledge of the API's nature relative to composition and other properties would be beneficial. For example, information about the compound's synthetic route would shed light on any related product(s) and possible degradation product(s), as well as possible impurities; knowledge of the compound's chemical structure would reveal any possible stereoisomer which in turn would necessitate a different separation strategy, and so forth.

Table 1 shows typical information that would be helpful concerning the nature of the compound. The more information is available, the less empirical the approach to developing a separation method will be.

5. SEPARATION GOALS

To determine the separation goals, which should be clearly defined, a number of questions should be asked to help delineate the end purpose of the separation. Typical questions may include

> What is the overall purpose of the method—quantitative, qualitative, or for isolation/purification of a compound (i.e., content assay, stability, impurities, cleaning assay, or for purification application)?

Table 1 Useful Physicochemical/Related Information Concerning the Compound

Wavelength of absorption (λ_{max})
Identity/number of compounds present (i.e., stereoisomers/chiral centers?)
Chemical structure (functionality); amphoteric
Molecular weight
pK_a values of compounds
Salt form of the drug
Solubility of compound
Purity of compound