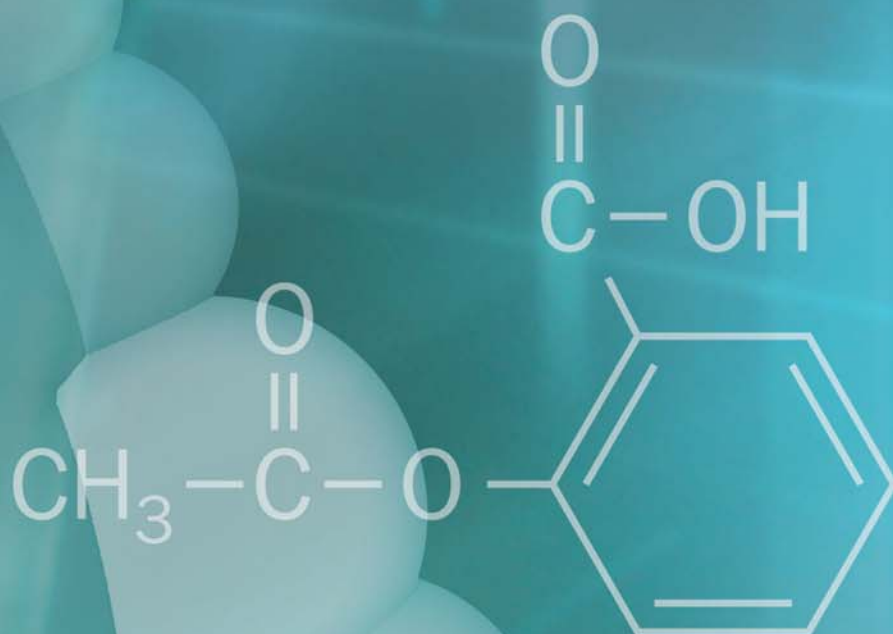




pK_a PRO™

Measurement Systems

ADVANCED ANALYTICAL





EMPLOYED BY WORLD-LEADING PHARMACEUTICAL COMPANIES AND RESEARCH ORGANIZATIONS

Key Benefits

- > Have the confidence of measured pK_a values
- > Measure earlier in the drug discovery and development process
 - Minimize sample consumption
 - Gain more insight into compound behavior
 - Reduce costly downstream changes
- > Advance understanding of compound stability, purity, and solubility
- > Increase sample throughput
 - Measure aqueous pK_a for three (24HT) to twelve (96XT) samples in about 1 hour
- > Perform multiple applications on the same platform, reducing capital costs

Key Features

- > Straightforward, intuitive data analysis
- > Predefined methods providing exceptional ease of use
- > Excellent correlation to traditional pK_a measurement methods
- > Direct measure of overall compound charge vs. pH
- > Separation of sample impurities or counter ions
- > Aqueous or co-solvent methods supported
- > Does not require intimate knowledge of sample concentration

Two Platforms Tailored to Specific Needs

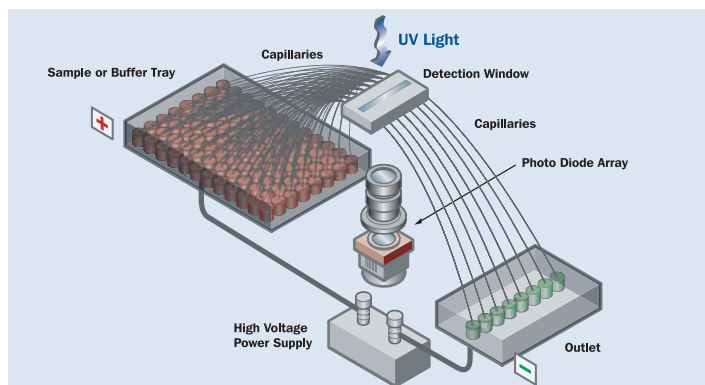
The pK_a PRO™ 96XT is a 96-channel system for high throughput labs.

The pK_a PRO™ 24HT is a 24-channel system ideal for low to medium throughput labs.

AWARD-WINNING TECHNOLOGY* — UNIQUE, UNMATCHED CAPABILITIES

Advanced Analytical's *parallel* capillary electrophoresis (CE) separation technology dramatically improves laboratory throughput and efficiency while minimizing sample consumption and reducing operational costs.

CE is exceptionally well suited for performing pK_a analysis. Measurements are based on compound migration times, so the UV chromophore does not have to be near the ionizable group as in spectrophotometric methods. The charge-based separation also enables isoelectric point (pI) determination for amphoteric compounds such as peptides.



*R&D Magazine's Top 100 Technologies for 2001.

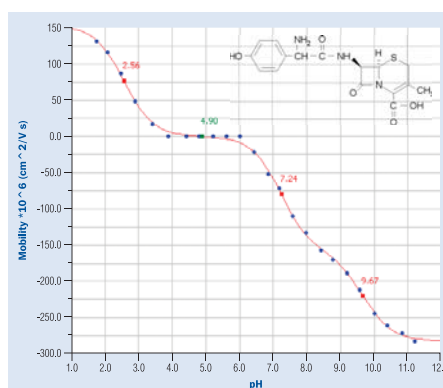
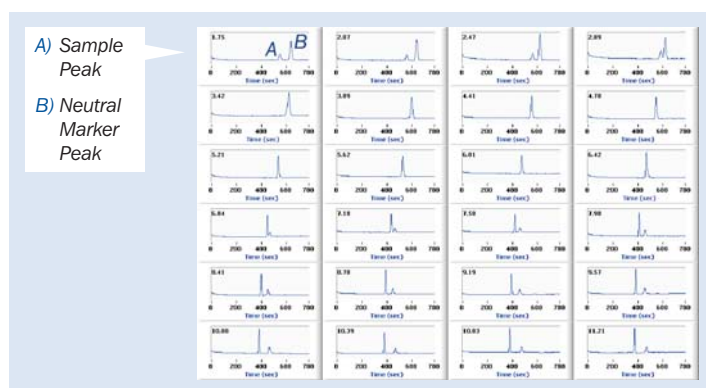
*R&D Magazine's Most Promising New Technology Award 2001.

*2005 Frost & Sullivan Award for Product Differentiation Leadership in the U.S. ADME/Tox Market.

> SEPARATION-BASED pK_a MEASUREMENTS

MINIMAL SAMPLE CONSUMPTION; INTUITIVE DATA ANALYSIS

Advanced Analytical's pK_a PRO™ systems enable rapid, capillary electrophoresis-based measurements of compound pK_a values at a very affordable price. An electrophoretic separation is performed in parallel across 12 or 24 different pH values, providing a direct measure of overall compound charge vs. pH. Impurities can be separated from the target compound to minimize interferences and for added assessment of compound purity or stability. Low sample volumes and sensitive online UV detection reduce sample consumption and permit measurement of sparingly soluble compounds. The total number of pK_a values present can be predicted by relating mobility and compound molecular weight.



Application-specific software provides unattended operation, integrated data analysis and exportable report generation. A complete line of ready-to-use consumables, including newly available pre-filled pH buffer trays, deliver a comprehensive solution for performing pK_a analysis.

> ADDITIONAL APPLICATIONS

UNSURPASSED VERSATILITY

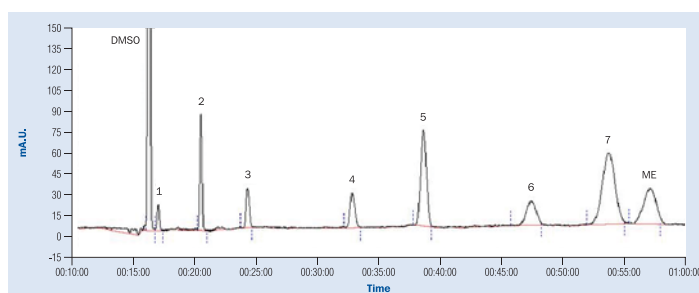
The pK_a PRO™ system can be configured to perform additional applications such as log P measurements, chiral separations, and capillary electrophoresis-based small molecule analytical separations.

Log P Measurements

When equipped with the log P application package, the pK_a PRO™ system provides accurate, automated log P measurements of neutral and basic compounds with high sample throughput. The use of microemulsion electrokinetic chromatography (MEEKC) offers a validated method with good correlation to the traditional “shake flask” technique, while minimizing interferences from sample impurities and reducing sample consumption. Pre-made buffers, sample diluents and application-specific software provide a complete package for log P sample analysis.

Chiral Separations

The pK_a PRO™ system's parallel capillary electrophoresis format can significantly reduce method development costs and analysis times for chiral analysis. Various sample/chiral additive combinations can be screened in a single experiment to identify optimal separation conditions. A specialized cooling system, combined with 50 μm i.d. capillaries, permits the use of either neutral or charged cyclodextrin chiral buffer additives.



MEEKC separation of a nine component log P standard mixture. Sample log P values are determined by comparison to the standard calibration curve.

> *pK_a* PRO™ SYSTEM TECHNICAL SPECIFICATIONS

Maximum Sample Throughput:	<i>pK_a</i> PRO™ 24HT 3 compounds/hour for aqueous 24-point <i>pK_a</i> measurement
	<i>pK_a</i> PRO™ 96XT 12 compounds/hour for aqueous 24-point <i>pK_a</i> measurement
Detection:	UV absorbance at 214 nm; other wavelengths available
Detection Sensitivity:	5 µg/ml (ppm) depending upon chromophore; working concentration 50 µg/ml
Sample Required:	Working volume 50 µl/well; 24 wells per 24 pH point analysis (< 100 µg)
Sample Format:	Typical DMSO concentration < 0.2% (v/v); higher DMSO concentrations tolerated at higher detection wavelengths
Sample Purity Requirements:	Compound of interest should be major species; impurities can often be separated
<i>pK_a</i> Measurement Range:	1.8–11.2
Software:	Proprietary <i>pK_a</i> PRO™ software for system control/data analysis
Data Export Format:	Microsoft® Excel spreadsheet
Environmental Conditions:	Indoor use, normal laboratory environment; lab temperature 20–23° C
Relative Humidity Range:	< 80% (non-condensing)
Electrical:	100–200 VAC; 50–60 Hz (200–230 VAC; 50–60 Hz available); 15 A
Instrument Dimensions:	Fully configured requires 99.1 cm H x 243.8 cm W x 76.2 cm D (39 x 96 x 30 in)
Instrument Weight:	88.6 kg (195 lbs)

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