

CLEAN SCREEN[®]

Copolymeric Bonded Phases

for Drug Abuse Testing

Analytical demand for more efficient, robust and clean extraction of drugs from biological matrices led to the development of WORLDWIDE MONITORING[®] CLEAN SCREEN[®] sorbents. Since 1986, CLEAN SCREEN[®] has led the industry with dependable and reproducible solid phase extraction products and applications. CLEAN SCREEN[®] phases are true copolymeric sorbents that contain hydrophobic and ion exchange functional groups uniquely polymerized to a silica substrate. The design and quality of CLEAN SCREEN[®] provides superior sample clean up, recovery and reproducibility.

Mixed mode separations allow maximum selectivity for extraction of acids, neutrals and bases. This selectivity makes CLEAN SCREEN[®] ideal for both screening and confirmation analysis for virtually all drug categories. CLEAN SCREEN[®] DAU and THC columns are used extensively by forensic and clinical chemists including:

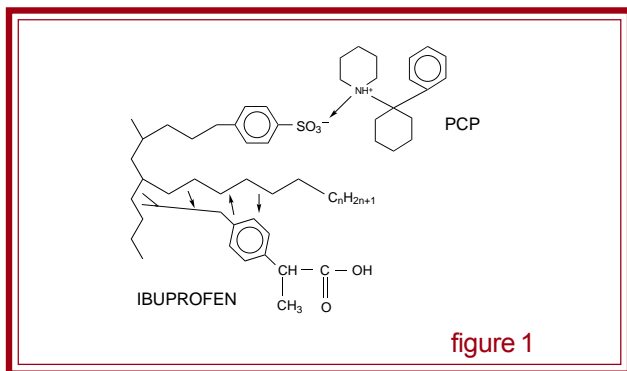
- Post mortem Investigations
- Criminal Investigations
- Urine Drug Testing
- Athletic Drug Testing
- Racing Laboratories
- Therapeutic Drug Monitoring
- Medical Drug Screening

Note:

If performing extractions out of viscous matrices such as tissue or horse urine, turn to our XtrackT[®] section where high-flow/gravity flow columns are found. The DAU CLEAN SCREEN[®] sorbent is available in this larger particle size.

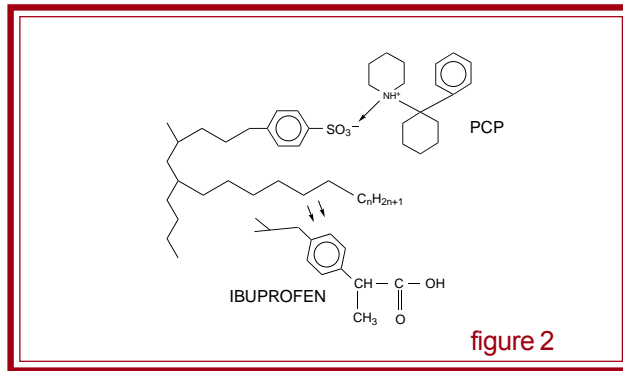
Mechanism of CLEAN SCREEN[®]

Sample Application



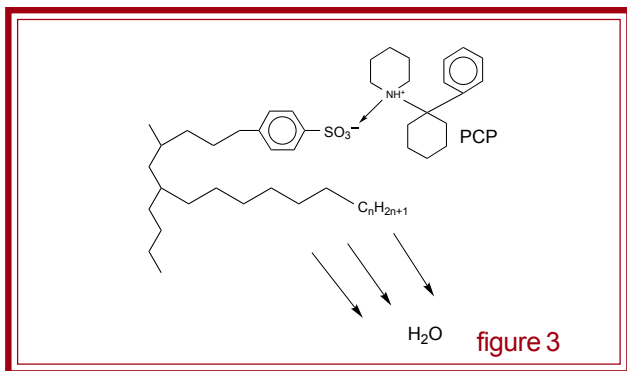
When a sample is loaded onto the column at pH 6, many carboxylic acid functionalities present in the sample are ionized. This creates a repulsion between the column and many sample borne interferences, thereby reducing the likelihood of their adsorbing onto the column. At this pH, ibuprofen & barbiturates are not ionized and are hydrophobically adsorbed onto the column (figure 1). At the same time, drugs with amine functionalities such as cocaine and phencyclidine adsorb onto the column via both hydrophobic and ionic attraction (figure 1).

Elution 1



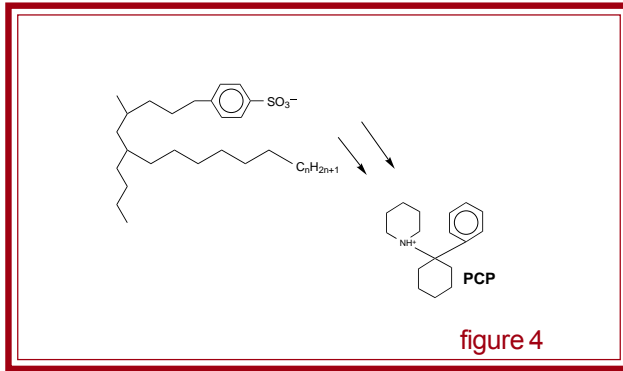
The column can then be washed with water or weak aqueous buffers at or below pH 6 without risking loss of the analytes. After drying the column, it is possible to elute the hydrophobically bound analytes using solvents of minimal polarity such as methylene chloride or a hexane/ethyl acetate mixture (figure 2). Cationic analytes will remain bound to the column. Many compounds of intermediate polarity and potential interferences will also remain on the column. The majority of these potential interferences can be removed by using a methanol wash.

Dry Column



Cationic analytes bound to the column can be eluted after another drying step. The drying steps are necessary to remove water which would have prevented the water-immiscible elution solvents from optimally interacting with the analytes (Figure 3).

Elution 2



To elute the cationic analytes, an organic solution with a high pH (between 11 & 12) should be used. A methylene chloride-isopropanol-ammonium hydroxide mixture will simultaneously disrupt these ionic interactions and successfully elute the desired compound (Figure 4).

CLEAN SCREEN[®] CODE

CSDAU503		
CS: CLEAN SCREEN [®] , no added tips CC: CLEAN SCREEN [®] with CLEAN-THRU [®] disposable tips. (excludes 10mL CLEAN SCREEN [®])	Sorbent type*	Column size (mL)
CSDAU503: "CLEAN SCREEN [®] Drugs of abuse column 3mL/500mg"		Packing Size (x 100mg) ("M" signifies x 1,000mg)

10mL CLEAN SCREEN[®] CODE

ZCTHC020		
CLEAN SCREEN [®] 10mL column	Sorbent type*	Packing size (x10mg)
S: No added tips C: CLEAN-THRU [®] tips added		
ZCTHC020: "CLEAN SCREEN [®] THC column 10mL/200mg with added CLEAN-THRU [®] tips"		

RSV CODE

Follow the respective code, CLEAN-UP[®] or CLEAN SCREEN[®], and add an "A" after the sorbent type to specify the small particle size of RSV.

*Sorbent Type:

DAU	"Drugs of Abuse" Sorbent
THC	"THC" Sorbent

CLEAN SCREEN[®]

Copolymeric Bonded Phases for Drug Abuse Testing

DAU

part number		amount sorbent/ tube volume	units per bag
without disposable tips	with CLEAN-THRU [®] disposable tips		
CSDAU131	CCDAU131	130mg/1ml	100
CSDAU133	CCDAU133	130mg/3ml	50
CSDAU203	CCDAU203	200mg/3ml	50
CSDAU206	CCDAU206	200mg/6ml	50
ZSDAU020	ZCDAU020	200mg/10ml	50
CSDAU303	CCDAU303	300mg/3ml	50
CSDAU503	CCDAU503	500mg/3ml	50
CSDAU506	CCDAU506	500mg/6ml	50
CSDAU515	CCDAU515	500mg/15ml	50
CSDAU1M6	CCDAU1M6	1g/6ml	30
CSDAUM15	CCDAUM15	1g/15ml	30

THC

CSTHC101	CCTHC101	130mg/1ml	100
CSTHC203	CCTHC203	200mg/3ml	50
CSTHC206	CCTHC206	200mg/6ml	50
ZSTHC020	ZCTHC020	200mg/10ml	50
CSTHC303	CCTHC303	300mg/3ml	50
CSTHC503	CCTHC503	500mg/3ml	50
CSTHC1M6	CCTHC1M6	1g/6ml	30
CSTHCM15	CCTHCM15	1g/15ml	30