



Barbituates (BARB)

Simplified Reagent Handling

Introduction

Barbiturates are central nervous system depressants. These drugs are commonly prescribed as sedatives. Because of their availability and hypnotic characteristics, they are frequently the cause of accidental poisoning and suicide attempts.

They are classified as ultrashort-acting, short-acting, intermediate-acting and long-acting. Ultrashort-acting barbiturates are used exclusively as anesthetic agents and consequently are rarely encountered in cases of overdosage. The most commonly abused barbiturates are the short-acting ones such as cyclobarbitol, pentobarbital (Nembutal[®]) and secobarbital (Seconal[®]), and the intermediate-acting ones such as amobarbital (Amytal[®]), aprobarbital, butobarbital (Butisol[®]), and hexathal. Long-acting barbiturates—barbital, phenobarbital, mephobarbital and diallyl-barbituric acid—are rarely subject of abuse. The duration of action of barbiturates is quite variable, ranging from 15 minutes for ultrashort-acting drugs to 24 hours or more for the long-acting drugs.

Barbiturates can be administered orally, intravenously and intramuscularly. Absorption occurs very rapidly. About 30 to 40% of the barbiturates are bound to plasma protein and the rest is distributed to the liver and adipose tissue where ultimately they become inactivated.

In overdose, barbiturates produce intoxication characterized by confusion, intellectual impairment, personality changes, motor uncoordination, slurred speech and nystagmus. High dosages and/or abrupt withdrawal from barbiturates can cause death.

The cutoff level for the SYNCHRON reagent is 200 ng/mL.

Increased Efficiency From Start To Finish

- DAT reagents from Beckman Coulter are all-liquid and ready to use. Like our liquid calibrators and controls, DAT reagents require no reconstitution or preparation and are specifically formulated for SYNCHRON[®] Clinical Systems.
- The pre-filled, barcoded cartridges simplify reagent loading. You can track reagent usage, onboard stability, calibration frequency and lot number automatically.
- A qualitative, interpretive report automatically compares patient results to the cutoff value and determines positive or negative, eliminating the need for manual interpretation.
- DATs, like all Beckman Coulter reagents and products, are backed by high quality technical support, including HOTLINE assistance, technical literature and highly trained field service engineers.



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Performance Characteristics

Precision

The following estimates of within-run imprecision were obtained when 20 replicates of the Negative Calibrator, Low Control (150 ng/mL), Low Calibrator (200 ng/mL), High Control (300 ng/mL) and High Calibrator (1000 ng/mL) were assayed on a properly operated and maintained SYNCHRON LX System.

	Mean (mA/min)	SD	%CV
Negative Cal	301	2.9	1.0
Low Control	367	2.5	0.7
Low Calibrator	411	2.9	0.7
High Control	440	3.2	0.7
High Calibrator	476	2.2	0.5

Concordance

Samples were compared between the SYNCHRON® Systems' Barbiturates test and the SYVA EMIT II*, the Roche ONLINE* and the Abbott AxSYM* barbiturates assays.

These precision and concordance studies were obtained in limited evaluation and are not intended to represent performance specifications for this reagent.

*All trademarks are the property of their respective owners.

BARBITURATES			
EMIT II			
	n=98	Positive	Negative
SYNCHRON System	Positive	48	0
	Negative	0	50
ONLINE			
	n=75	Positive	Negative
SYNCHRON System	Positive	11	1
	Negative	0	63
AxSYM			
	n=148	Positive	Negative
SYNCHRON System	Positive	9	0
	Negative	0	139



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