RIKI GLOBAL

IAM Columns
Immobilized Artificial Membrane Columns

Rapid biomimetic screening of drug-membrane affinity

REGIS® TECHNOLOGIES, INC.

AN ADVANCED TOOL FOR DRUG DISCOVERY

Accelerate Drug Discovery

Speed Compound Selection

Reduce Attrition at Late Stage

Limit the Number of Animal Studies

IAM

## BENEFITS FOR DRUG DISCOVERY

- Rapidly screen drug/phospholipid interactions
- Identify suitable compounds early in the process
- Identify and eliminate compounds with low permeability
- Predict *in vivo* compound behavior, reducing need for animal studies

As phospholipids are major components of tissues and cells, drug interaction with phospholipids is an important contributor to distribution. Immobilized Artificial Membrane (IAM) chromatography can be used to quickly measure drug- phospholipid interactions via retention times.

## IAM COLUMN STATIONARY PHASE CHARACTERISTICS AND USES

- Emulates the lipid environment on a solid surface
- Covalently bonded Phosphatidylcholine (PC) to silica
- Highly stable stationary phase suitable for thousands of injections
- Retention on the IAM stationary phase can be directly related to membrane partition coefficients
- Thousands of drug discovery compounds can be characterized by IAM retention time measurements
- Normalized retention times are used for ranking compounds
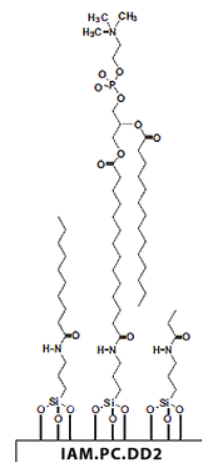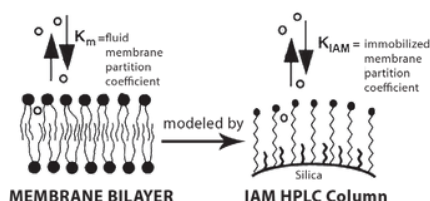
DRUG/PHOSPHOLIPID BINDING CAN INFLUENCE:

- Permeability
- Absorption
- Solubility enhancement
- Toxicity
- Volume of distribution
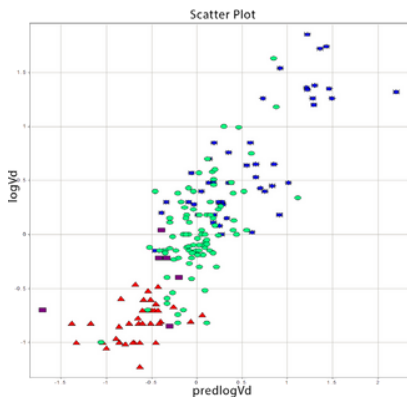- Drug efficiency
- Cellular potency

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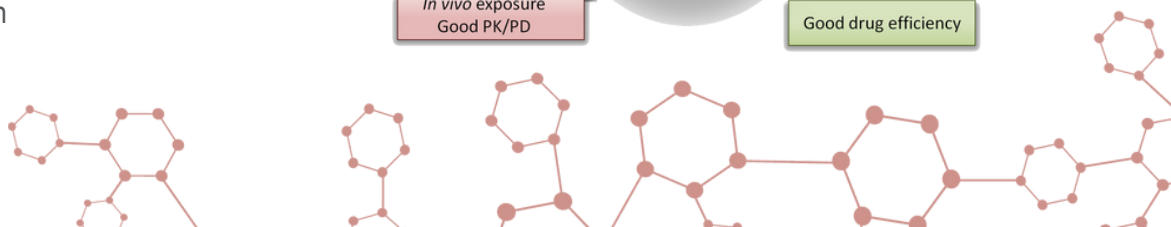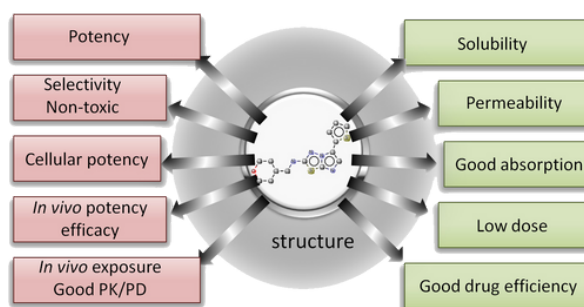
Quickly set up IAM screening to get an early indication of drug membrane interaction:

- Inject a calibration mixture and run a simple gradient
- Plot the calibration curve
- Inject your drug compound under the same conditions and obtain K values
- Using supplied equations the drug sample is then compared to known binding models

IAM chromatography is a simple and reliable tool to measure phospholipid/drug affinity via calibrated retention times on IAM stationary phases. Regis Technologies IAM Columns are high quality, long lasting HPLC columns providing reliable measurements across a wide range of drug molecules. A calibration mixture and instructions how to obtain and use the critical information of drug discovery compounds are also available.

VOLUME OF DISTRIBUTION MODEL

Human clinical steady state volume of distribution (logVdss) data of 130 marketed drug molecules shows trends with the estimated values using IAM and HSA binding data.

DRUG EFFICIENCY MODEL
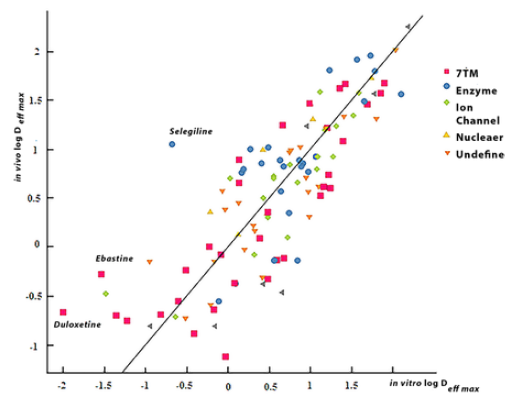
The sum of the IAM and HSA binding of compounds models the *in vivo* drug efficiency.

SOLUBILITY ENHANCEMENT BY MICELLES IN SIMULATED INTESTINAL FLUIDS
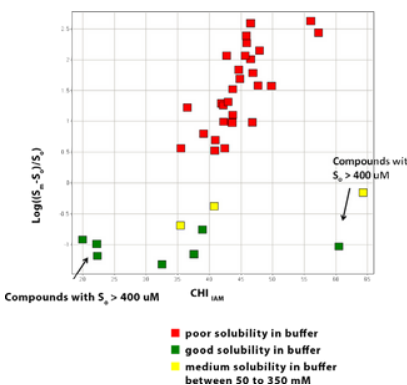
The intestines contain phosphatidyl choline micelles that enhance the solubility and absorption of nutrients. Solubility enhancement shows good correlation to IAM binding of compounds.

## PHOSPHOLIPIDOSIS TOXICITY POTENTIAL
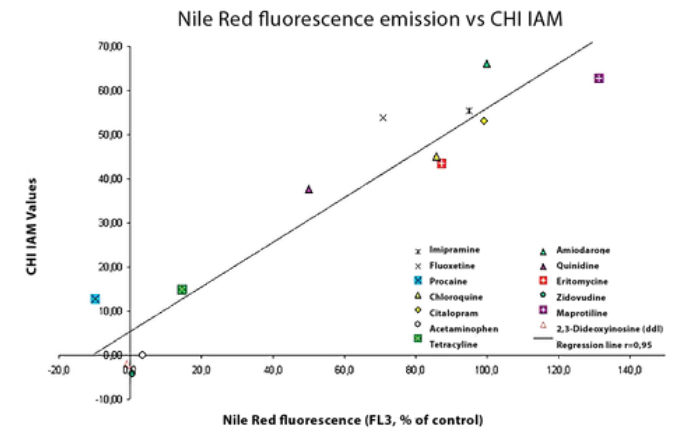
CHI IAM values higher than 50 indicate phospholipidosis potential. Phospholipidosis is an accumulation of lamellar phospholipids in the cell often caused by drugs. Hepatotoxicity caused by phospholipid accumulation detected by Nile Red fluorescence shows excellent correlation to CHI IAM values.

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Rapid biomimetic screening of drug-membrane affinity An advanced tool for drug discovery
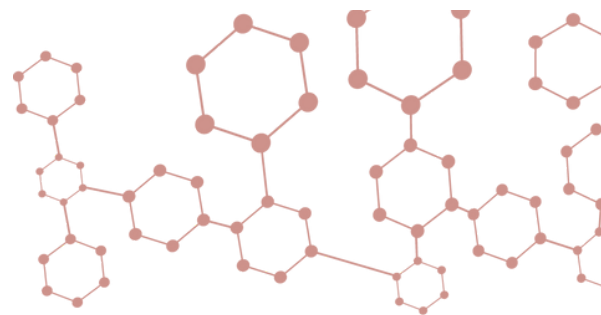
PRODUCT	Dimensions	Particle Size	IAM.PC.DD2 Catalog #	IAM.PC Catalog #	IAM.PC.MG Catalog #
Columns	15 cm x 3 mm	10 µm 10	1-774004-300 1-	N/A	N/A
	10 cm x 3 mm	µm 10	774003-300 1-	N/A 1-	N/A 1-
	3 cm x 4.6 mm	µm 10	774010-300 1-	770007-300	772007-300
	10 cm x 4.6 mm	µm 10	774011-300 1-	N/A 1-	N/A 1-
	15 cm x 4.6 mm	µm 10	774014-300 1-	770001-300	772001-300
Guard Kit	1 cm x 3 mm	µm 10	774012-300 1-	1-771001-	1-773001-
Guard Cartridges	1 cm x 3 mm	µm 10	774013-300 1-	300 N/A	300 N/A
IAM Fast Screen Mini Column Kit*	1 cm x 3 mm	µm N/A	775014-300* 1-	N/A	N/A
Drug Screening Calibration Mixture	10 x 1 mL		774015-300	N/A	N/A

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