Name _____ **Creating a Chemical Compound Index** We ♡ Forensics
Date _____ Per_8 Mr. Rizzo

Objective:

- To create a class "Chemical Compound Index" that can be used as a reference or list of controls and standards.
  For each compound provide:
  - Compound Background
  - Chemical Reagents
  - Chromatograph results
  - IR Spectrum
  - Mass Spectrographs *(most difficult)*

Each Index will have a:

1. Table of contents
2. Sections identifying:
   - Compound Background
     - ✓ Name
     - ✓ Source
     - ✓ Medical use
     - ✓ Dosage
     - ✓ Duration
     - ✓ Administered by
     - ✓ Antagonist?
   - Chemical Reagents
   - Chromatograph results
   - IR Spectrum
   - Mass Spectrographs
3. Bibliography

THIS IS A TEAM ACTIVITY. SO YES, YOU WILL RECEIVE TWO GRADES!

Time Line:
Project Start: Thursday 13th
First Draft Monday 17th
Second Draft Wednesday 19th
Six Omissions Due Friday 21st
Presentation of Index Monday 24th

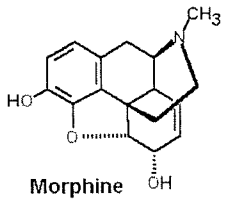
Table of Contents

Compound	Color	Rf	Page
Aminophylline	light Grey	0.1	
Aminopyrine	violet	0.8	
amphetamine	blue	0.68	
atropine	violet	0.62	
Brucine	blue	0.52	
Cannabis			
Choline	blue	0.1	
chlorcyclizine	violet	0.75	
Chloroquine	blue	0.52	
Chlorpromazine	purple	0.78	
cocaine *hydrochloride*	violet	0.54	
Codeine	blue	0.45	
Diacetylmorphine	violet	0.62	
Doxylamine	purple	0.74	
heroin	purple	0.68	
Homatropine	blue	0.54	
methadone, methamphetamine	violet	0.55	
Methimazole	purple	0.77	
Morphine	blue	.0.41	
Narcotine	violet	0.72	
Nicotine	blue	0.49	
Opium			
Papavarine	violet	0.74	
Penthidine(demerol)			
phencyclidine (PCP),	blue	0.63	
Primaquine	purple	0.76	
Procaine	purple	0.56	
Promazine	purple	0.76	
Quinidine	violet	0.79	
Quinine	violet	0.79	
Strychine	violet	0.55	
Tetracaine	purple	0.78	
Thiamine	blue	0.11	
Thonzylamine	purple	0.65	
Thorazine	purple	0.78	
Tolazoline	purple	0.58	
Trimeprazine	purple	0.84	
Valium, Diazepam	purple	0.66	
Yohimbine	Purple/pink	0.66	

* Rfs of these compounds do not represent values which are absolute, but values which are relative to each other

Reagent: iodoplatinate
Chromagraphed solvent: Butanol 10, acetic acid 1 water 5

COMPOUND BACKGROUND



Morphine

Morphine **Chemical Formula:** $C_{17}H_{19}NO_3$

Trade:	Roxinal, MS, Morphine Sulfate
Street: (If applicable)	"M", morph, Miss Emma
Classification	Narcotic

Background:	Morphine is naturally occurring substance in the opium poppy, *Papaver somniferous*. It is a potent narcotic analgesic, and its primary clinical use is in the management of moderately severe and severe pain. After heroin, morphine has the greatest dependence liability of the narcotic analgesics in common use. [1]
Source	Morphine is isolated from crude opium,
Medical usage	For moderate to severe pain
Dosage	The optimal intramuscular dosage is considered to be 10 mg per 70 kg body weight every four hours. The typical dose range is from 5 to 20 mg every four hours, depending on the severity of the pain. The oral dose range is between 8 and 20 mg; but with oral administration morphine has substantially less analgesic potency (approximately one-tenth of the effect produced by subcutaneous injection) because it is rapidly destroyed as it passes through the liver immediately after absorption. The intravenous route is employed primarily for severe post-operative pain or in an emergency; in this case the dose range is between 4 and 10 mg, and the analgesic effect ensues almost immediately. [2]
Duration	4 - 5 hours
Administered:	Injected, smoked, sniffed, or swallowed);
Antagonists	Nalorphine

CHEMICAL REAGENTS:

Morphine: Zernik reagent, Marquis Reagent

CHROMATOGRAPHY:

Morphine:

Rf: 0.78 Solvent: chloroform-methanol

Rf: 0.41 Solvent: butanol 10, acetic acid 1, water 5

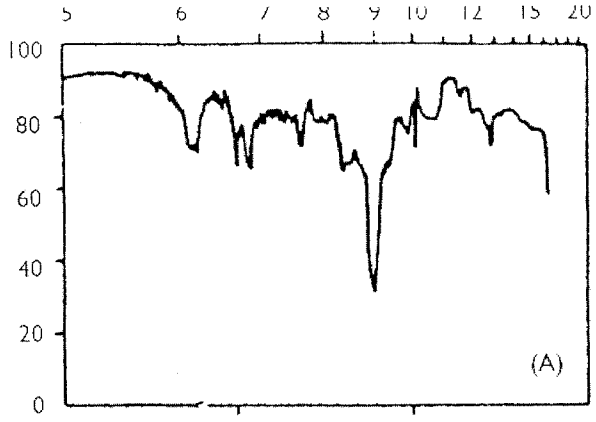
OR

As a data table!

R f Values in Chloroform-methanol	
Compound	**Rf**
Atropine	0.62
Norcodeine	0.72
Morphine	0.72
Dihydromorphinone (Dilaudid)	
Nalorphine (Nalline)	
Dihydrohydroxymorphinone (Numorphan)	
Methyldihydromorphinone (Metopon)	
Normorphine	
Codeine	
Pethidine (Demerol)	
Methadone (Dolophine)	
Methamphetamine (Methedrine)	
Amphetamine (Benzedrine)	
Heroin	
Monacetylmorphine	
Levallorphan (Lorfan)	
Cocaine	

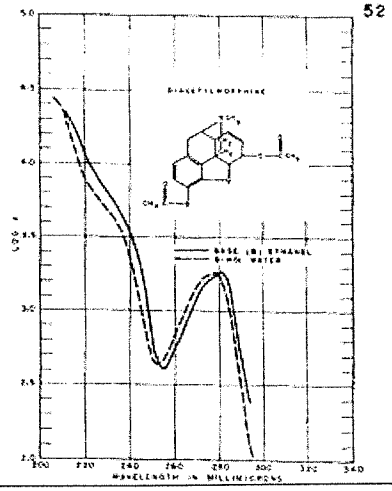
INTRARED SPEPECTRUM ANALYSIS: [3]

Morphine:



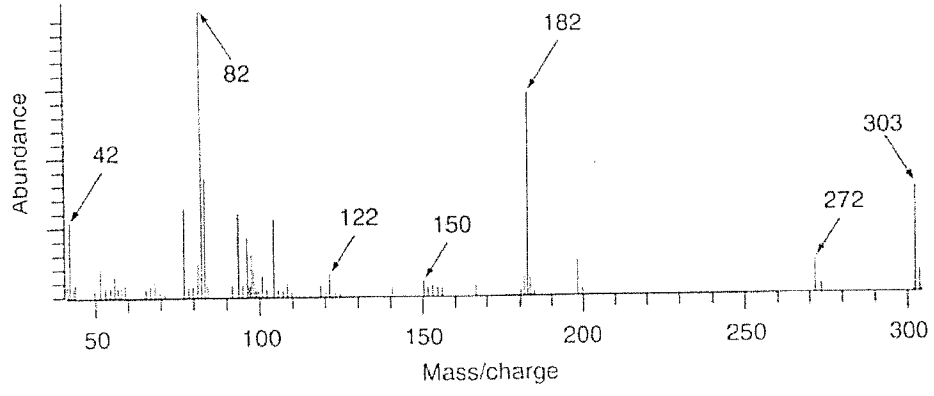
UV SPECTRAL ANALYSIS:

Morphine:



MASS SPECTROGRAPH

Morphine:



BIBLIOGRAPHY:

MORPHINE

1	http://www.chamisamesa.net/dcc1.html
2	http://opioids.com/opioidfaq/faq.html
3	http://www.unodc.org/unodc/en/bulletin/bulletin_1954-01-01_3_page006.html
4	http://www.a1b2c3.com/drugs/opi005.htm
5	http://webbook.nist.gov/chemistry/name-ser.html
*6	http://www.unodc.org/unodc/en/bulletin/bulletin_1954-01-01_3_page006.html#s300

NACOTINE:

1	http://www.chamisamesa.net/dcc1.html
2	http://opioids.com/opioidfaq/faq.html
3	http://www.unodc.org/unodc/en/bulletin/bulletin_1954-01-01_3_page006.html
4	http://www.a1b2c3.com/drugs/opi005.htm
5	http://webbook.nist.gov/chemistry/name-ser.html
*6	http://www.unodc.org/unodc/en/bulletin/bulletin_1954-01-01_3_page006.html#s300