

MICROGRAM

Laboratory Operations Division
Office Of Science And Drug Abuse Prevention

BUREAU OF NARCOTICS & DANGEROUS DRUGS / U.S. DEPARTMENT OF JUSTICE / WASHINGTON, D.C. 20537

Vol. V, No. 1

January, 1972

A New Law Enforcement Facility

The Miami Regional Laboratory, BNDD's newest, officially opened January 17, 1972. Headed by Chief Chemist Anthony Romano, Jr., former Chief Chemist of the New York Regional Laboratory, the new facility will service BNDD's Miami and New Orleans Regional Offices. It will also provide support to state, local and other enforcement agencies throughout South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi, Arkansas and Louisiana. The address of this new laboratory is:

Miami Regional Laboratory
Bureau of Narcotics & Dangerous Drugs
201 N.E. 12th Street
Miami, Florida 33132

Phone: (305) 350-4412

The Washington Regional Laboratory has completed its move to a new location. The address is:

Mr. Jack Rosenstein, Chief Chemist
Washington Regional Laboratory
Bureau of Narcotics & Dangerous Drugs
460 New York Avenue, N. W.
Washington, D. C. 20537

Phone: (202) 386-6011

Potassium cyanide, undiluted, has been encountered in a pink, #1 size capsule resembling those used for some secobarbital preparations. The exhibit was from the Denver, Colorado area, and was associated with a recent death. The compound was identified by a local laboratory, and analysis was confirmed by the BNDD Special Testing and Research Laboratory.

Analytical methods in **Microgram** do not have official status. Use of funds for printing this publication approved by the Bureau of the Budget, April 8, 1969. **CAUTION:** Use of this publication is restricted to forensic scientists serving law enforcement agencies.

From the Archive Library of Erowid Center
<https://erowid.org/library/periodicals/microgram>

MDA HCl (82-84%) and methamphetamine HCl (97%) plus a small amount of sodium chloride have been found in combination on the East Coast.

A mixture of amobarbital, secobarbital and quinine has been reported by the New Jersey State Police Laboratory. The specimens were received as a white powder in glassine envelopes.

A clandestine laboratory producing a barbiturate was recently seized on the West Coast. This is the first such illegal operation dealing with barbiturates encountered by BNDD.

Interesting and unusual encounters: An exhibit of a white powder recently analyzed by our Special Testing and Research Laboratory proved to be a mixture of a large amount of methocarbamol, a moderate amount of probenecid plus small amounts of heroin hydrochloride (0.4%) and corn starch. This is the first encounter we have had with this particular combination.

Morphine hydrochloride trihydrate has recently been encountered in an exhibit collected in the Far East. This form of morphine HCl is very unusual. Any information you may have on a sample of this type would be greatly appreciated.

A clandestine tableting machine was seized in Tijuana, Mexico on December 8, 1971 by Baja California State Police and BNDD Agents. This 33 station machine was equipped with 7/32nd inch punches and when seized, was set to produce 1500 tablets per minute. Tablets from this clandestine source, to date, have all contained amphetamine as the active ingredient along with brushite, methyl cellulose and a starchy material as excipients. Over 2 1/2 million of these tablets in illicit distribution channels have come to our attention. About 2 million were seized by U.S. Customs officers in a border crossing at San Ysidro, California, on December 1, 1971. On November 28, 1971, about 1000 tablets were purchased in Anchorage, Alaska and on December 3, 1971, another 1500 were purchased in Kansas City. It appears that this clandestine source had barely started operating when seized.

MEETINGS

Sixth International Meeting of Forensic Sciences, Edinburgh, Scotland-- September 21-26, 1972. For further information, write to:

The Secretariat
Sixth International Meeting of Forensic Sciences
Institute of Pathology
Grosvenor Road
Belfast, BT 12 6BL
Northern Ireland

Annual Meeting of the American Academy of Forensic Sciences, Atlanta, Georgia, March 1-4, 1972. Contact:

Secretary James Weston, M.D.
44 Medical Drive
Salt Lake City, Utah 84113

or

General Program Chairman
Michael M. Baden, M. D.
Office of the Chief Medical Examiner
520 First Avenue
New York, New York 10016
Telephone: (212) 684-1600

California Association of Criminalists, Semi-annual seminar, May 18-20, 1972. Pierpont Inn, Ventura, California. For further information, contact:

Forrest Letterly
Ventura County Sheriff's Office
501 Poli Street
Ventura, California 93001

BNDD Forensic Chemists Seminars for the coming fiscal year are planned as follows:

April 3 - 7, 1972
June 12 - 16, 1972

All sessions will be held at the BNDD National Training Institute, Washington, D.C. For more information and application forms, write to:

Assistant Director for Training
National Training Institute
Police Training Division
Bureau of Narcotics and Dangerous Drugs
1405 Eye Street, N. W.
Washington, D. C. 20537

ANNOUNCEMENT

During the course of the Midwestern Forensic Analyst Seminar held in Chicago, October 7-9, 1971, those attending elected to form an organization to be known as the Midwestern Association of Forensic Scientists. The following persons were selected to serve as officers:

President: John P. Klosterman
Ohio Bureau of Criminal Identification and
Investigation
London, Ohio

Vice-President: Theodore R. Elzerman
Illinois Bureau of Identification
Joliet, Illinois

Secretary-Treasurer: Patricia L. Purdon
Trace Evidence Department
Cuyahoga County Coroner's Office
Cleveland, Ohio

Application for membership may be obtained from the chairman of the membership committee.

Richard Fox, Sr.
Regional Center for Criminal Justice
Criminalistics Laboratory
2100 North Noland Road
Independence, Missouri 64051

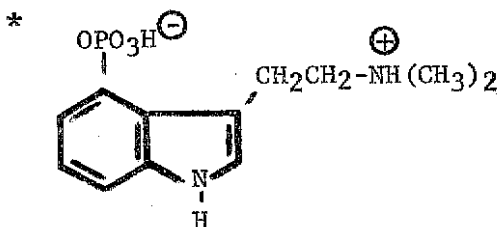
Identification of Psilocybin in Mushrooms

Daniel S. Miller
Chemist
Florida Dept. of Law Enforcement

Background

The illicit use of certain mushrooms for their hallucinogenic properties has recently become popular by individuals in Florida. These mushrooms, known by Indians of the American Southwest, Mexico and South America and used for many centuries in religious ceremonies, were rediscovered in 1957. The main active hallucinogen which has been isolated is psilocybin--0.2-0.49% by dry weight--(4-phosphoryoxy-N,N-dimethyltryptamine*) while very small quantities of the hydrolysis product (4-hydroxy-N,N-dimethyltryptamine) have been detected. To date 12-15 species of hallucinogenic mushrooms (most of which belong to the Genera: Stropharia, Psilocybe, Conocybe, and Panaeolus) have been found to contain psilocybin.

The following procedure has been used to identify the presence of psilocybin in the species *Stropharia cubensis*.



Physical Properties:

Psilocybin

Description--white crystals
Solubility--soluble in water and methanol
 insol. most other organic solvents
M. P.--185-195 degrees C (decomp.)

Psilocin

Description--white crystals
Solubility--soluble in ethanol and dilute acetic acid
M. P.--173-176 degrees C

Quantitative tests:

Color Test:

	<u>Reagent</u>	<u>Color</u>
Psilocybin	5%PDMB	reddish-violet grey blue
Psilocin	in conc. HCl	faint blue

(Color should develop immediately.)

Identification:

Several mushrooms (approximately 5g.) were dried in an oven at 50-60 degrees C for 5 hours yielding 0.5g. of dried material. The dried mushrooms were ground to a powder, 10 ml of methanol added, the mixture heated 2 min. on a steam bath and filtered. After diluting a portion of the filtrate a UV spectrum (fig. 1) was obtained which was very similar to known psilocybin (fig. 2).

Further purification was attained using preparative TLC. Approximately 200 ul of the methanol extract and psilocybin standard were applied to a 20 cm. plate, developed in NH_4OH - methanol (1.5:100), and after drying the zone corresponding to psilocybin (located under short UV light) was scraped from the plate. The UV spectrum (fig. 3) obtained on extraction of the silica gel was identical to psilocybin.

Fluorescence spectra of the above purified extract and known psilocybin are also provided (fig. 4, 5). The particularly strong low energy fluorescence at 612 m μ may be characteristic of psilocybin since other tryptamine derivatives fluoresce weakly if at all in this region.

Quantities (approximately 10 μ l) of the methanol extract and standard psilocybin were spotted on 10 cm Silica Gel G TLC plates, the spots dried and developed in four different solvent systems (see below). The chromatograms were air dried (spots could be located under short UV light) and sprayed with fresh 5% p-dimethylaminobenzaldehyde in conc. HCl which produced a reddish violet zone for psilocybin. An additional faster moving spot (weak) was observed with systems 1 & 4 which probably is due to small amounts of psilocin. In each case, the Rf values were essentially identically to standard psilocybin.

TLC RESULTS

<u>System</u>	<u>Rf</u>		<u>POSSIBLE PSILOGIN</u>
	<u>UNK</u>	<u>PSILOCYBIN</u>	
1. H ₂ O sat.-n-BuOH	0.0	0.0	0.35
2. NH ₄ OH-MEOH (1.5:100)	0.10	0.09	
3. n-BuOH sat. H ₂ O-Acetic Acid (9:1)	0.80	0.82	
4. H ₂ O - Acetic Acid-n-BuOH (1:1:2)	0.23	0.23	0.93

REFERENCES:

1. R. G. Benedict, L. R. Grady, A. H. Smith, V. E. Tyler, Jr., Lloydia, 25, 156 (1962).

2. A. Hofmann, R. Heim, et. al., Helv. Chim. ACTA., 42, 1557 (1959).
3. R. Heim and A. Hofmann, Compt. Rend., 247, 557 (1958).
4. R. E. Schultes, Bull. Narc., 21, No. 3 (1969).
5. R. E. Schultes, Science, 163, 245 (1959).
6. A. Hofmann, Bull. Narc., 23, No. 1 (1971).

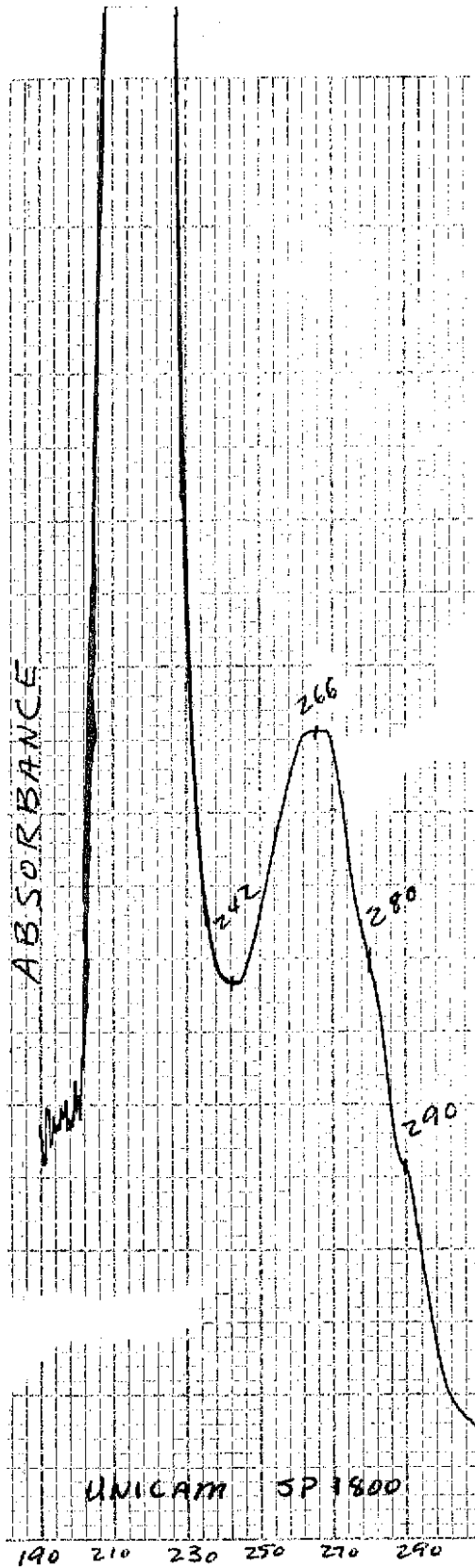


FIGURE 1

Mushroom Extract

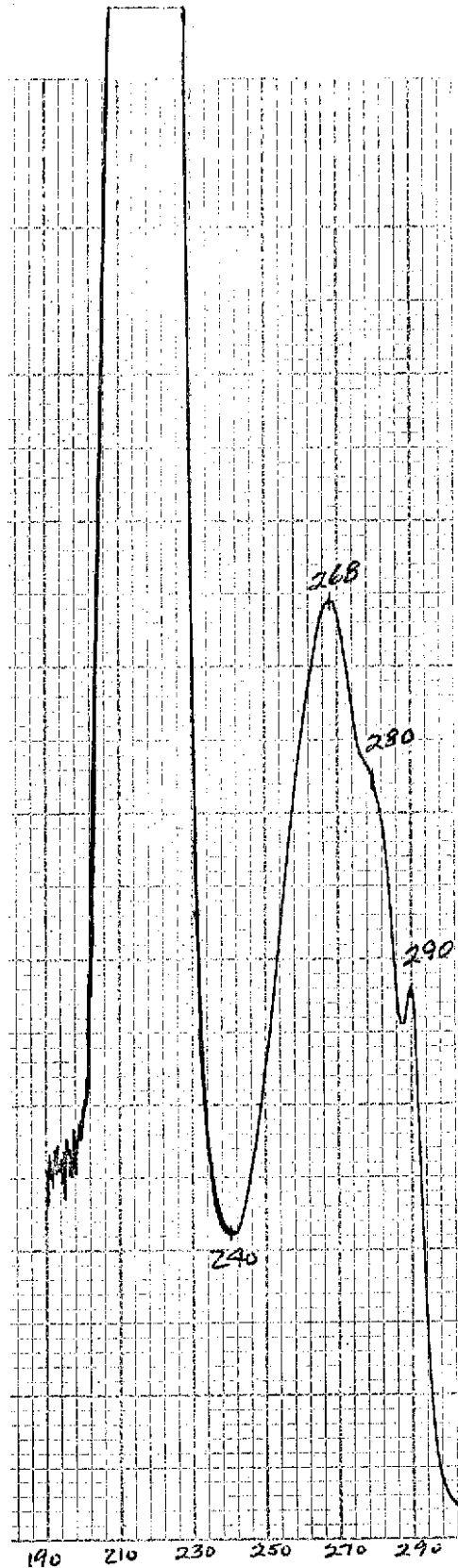


FIGURE 2

Psilocybin

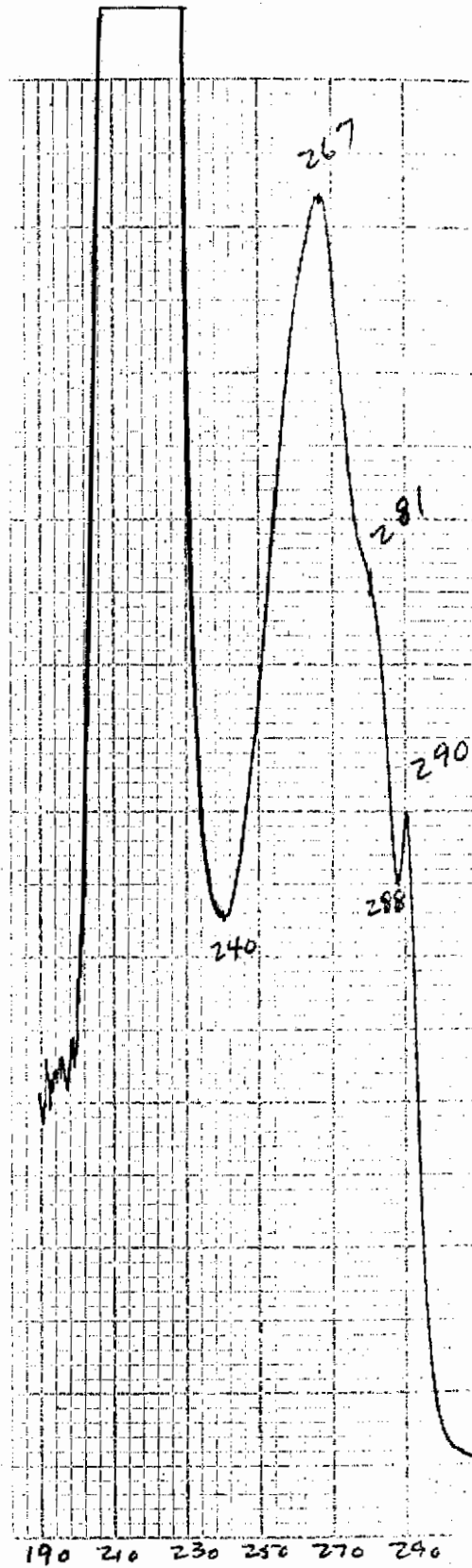


FIGURE 3

Purified Mushroom

Extract

- ① EMISSION, Ex. @ 282 mμ
SOLVENT METHANOL
- ② EXCITATION, Em. @ 612 mμ
- ③ EXCITATION, Em. @ 323 mμ

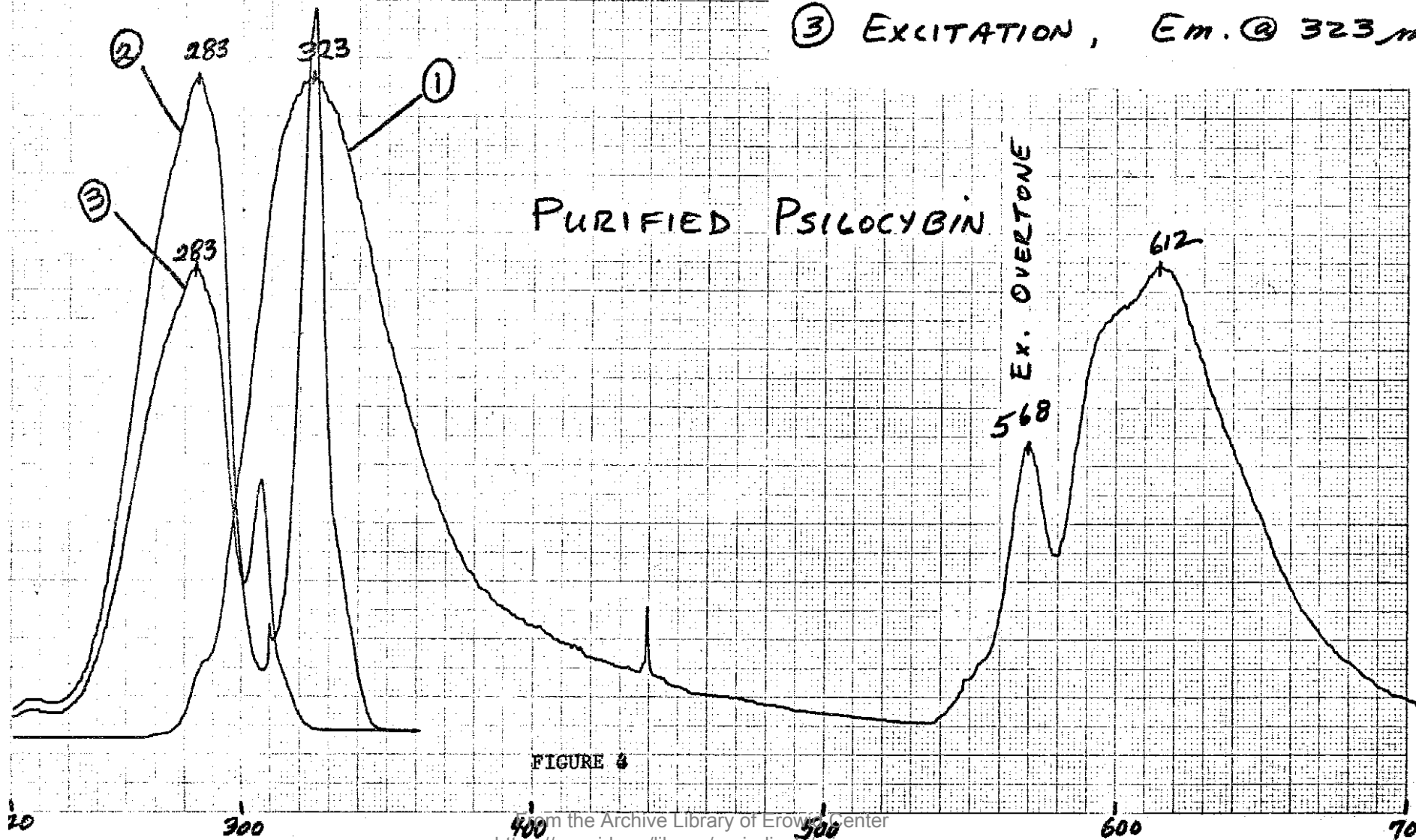


FIGURE 4

① EMISSION, Ex @ 282 mμ

② EXCITATION, Em @ 612 mμ

③ EXCITATION, Em @ 323 mμ

SOLVENT METHANOL

