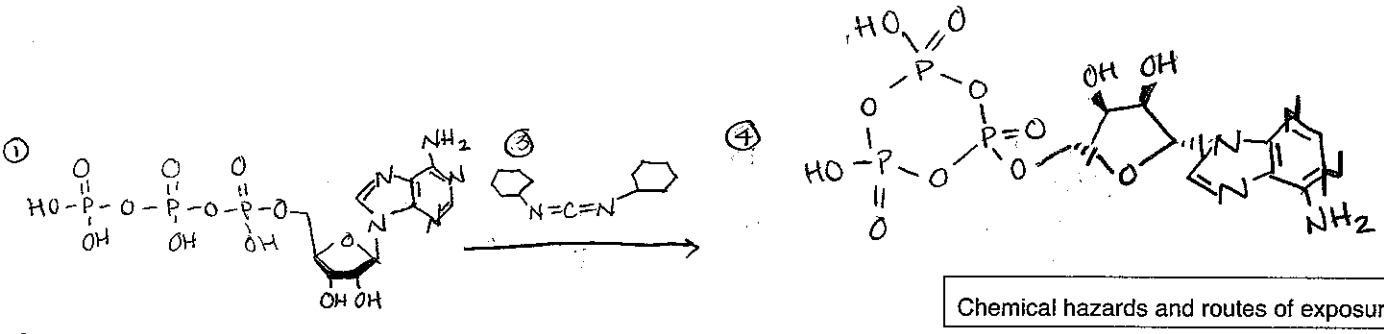
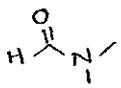
Reaction Risk Assessment Form. **Reaction number:** ATP001DP

Write your reaction here including work-up and purification method (*e.g.* chromatography). Use the form below to risk assess ALL associated reaction and process conditions (*e.g.* heating, cooling, vacuum), particular hazards (*e.g.*, exotherm, gas evolution, flooding, asphyxiation, burns - hot or cold, explosion), quench procedures, and waste disposal as well as the chemicals to be used, including your expected product, solvents, and known byproducts.



② DMF under Argon



Compound	FW	d	Quantity	mmols	equiv	Chemical hazards and routes of exposure: Route of exposure: 1 Inhalation; 2. Skin/eye contact; 3 Swallowing	Carcinogen, teratogen, mutagen	Very toxic / toxic	Harmful/irritant	Explosive	Pyrophoric	Highly flammable, flammable	Oxidising	Corrosive	Lachrymator	Other (specify):
① ATP	507.18	—	0.0245g	0.048	1	1,2,3	–	1	2	–	–	–	–	–	–	–
② DMF under argon	73.09	0.944	1.8mL	N/A	—	1,2,3	3	2	1	–	–	2	–	3	–	–
③ DCC	206.33	—	0.0301g	0.146	1	1,2,3	–	2	3	1	–	1	–	3	–	–
④ ATMP	489.17	—	0.0236g	0.048	1	1,2,3	–	3		–	–	–	–	–	–	–

Repeat experiment (this book only - please circle one) (No) / Yes (previous assessment on page:)

New experiment (Please tick one): Category: (A) B C D

Standard protocol followed? (Please give reference) ChemComm Kraatz (2008) pg 502-504 Supplementary Information

Reaction conditions and associated processes (heat, cooling, pressure, vacuum *etc*) and hazards: stirred under Ar
(Refer to general risk assessments on Departmental safety website) need to be trained to use Shlank line.

Control Measures: (please tick boxes)				
	Safety glasses: ✓	Lab coat: ✓	Fume hood: ✓	Safety screen:
	Gloves (type):	Nitrile: ✓	Marigolds:	Other:
	Scrubbing train (type):		Other:	

Are specific emergency procedures necessary for this process: Yes/No. If Yes, give details:

Reaction and/or reagent quench:
(Give quench type and possible hazard)

Waste disposal: Chlorinated Waste Hydrocarbon Waste Silica Waste Other (specify):
(circle as appropriate)

Co-worker signature: Designated Supervisor Signature:

Date: Date:

RISK ASSESSMENT TOOL for LABORATORY PROCEDURES

PROCEDURE IDENTIFICATION:
List chemicals used. Attach MSDS and any written procedures.

Chemical Volume(s)	Micro < 0.5 L		Normal 0.5	2 L	Large > 2 L
	(1)		2	3 4	5
Hazard Recognition	None		Routine		Extreme
USE HIGHEST SCORE ONLY					
Flammable	0		1	(2) 3	4 5
Corrosive	0		1	2 (3)	4 5
Toxic	0		1	2 (3)	4 5
Cryogenic	0		1	2 3	4 5
Process Conditions N/A	Sub-ambient (P < 1 atm; T < 10°C		(Ambient (P = 1 atm; T > 10 & < 40°C)		Extreme
0	3		(1)	2	3 5
Explosive Hazard	No		Yes		
0	(0)		5		
Radiation Hazard	Minimal		Normal		High
(0)	1	2	3	4	5
Other Hazard: Specify & Score	Minimal		Normal		High
0	1	2	3	4	5
Special Hazards:	Inhalation Toxicity 0 (2) 5		Reactive		(0) 5
Procedure	Detailed & Written		Routine		Under Development
	(0)		1 2 3 4		5
Personnel Preparedness & Training	Fully Trained & Prepared		Routine		Untrained
	0		(2)	4	5
Ventilation Needed	Hood Used		General Lab Only		Not Used
	(0)		3	4	5
Shielding Needed	Used				Not Used
	(0)				5
Equipment Maintenance	Regularly Performed & Documented				Never Performed
	(0)		1 2 3 4		5

Initial Score: 14

RECOMMENDED ACTIONS BASED ON SCORE		
LOW	< 15	Procedure can be performed with routine precautions.
MODERATE	15 - 25	Procedure can be performed with attention given to specific hazards. Supervision is recommended.
HIGH	26 - 30	Procedure may be performed if necessary. High level attention must be given to all hazards. High level, continuous supervision is mandatory.
EXTREME	> 30	Procedure must be revised to lower the risk.

If score is > 25, risk reduction actions should be identified and implemented.

INSTRUCTIONS

Complete the LABRAT as part of the the procedure review. Scoring is based on a 0 - 5 scale, with 0 being "NOT APPLICABLE" and 5 being "Extreme" Your can assign any score to a specific box applicable, even if the score vale is not shown on the RAT. After scoring, interpret the score using the guidelines in the top of the right column. The IC can increase or decrease the assessment, based on the situation.

List Chemicals Used

Chemical	Volume or Weight