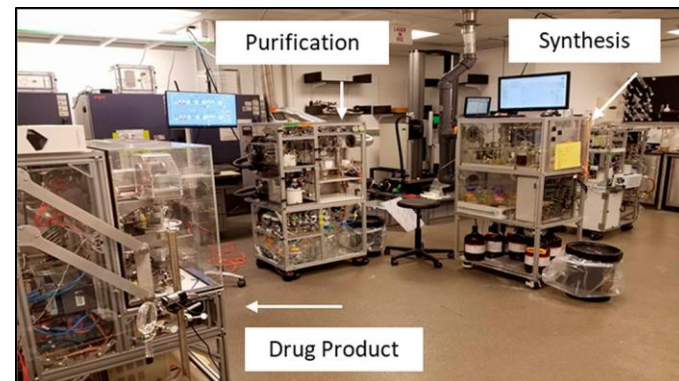
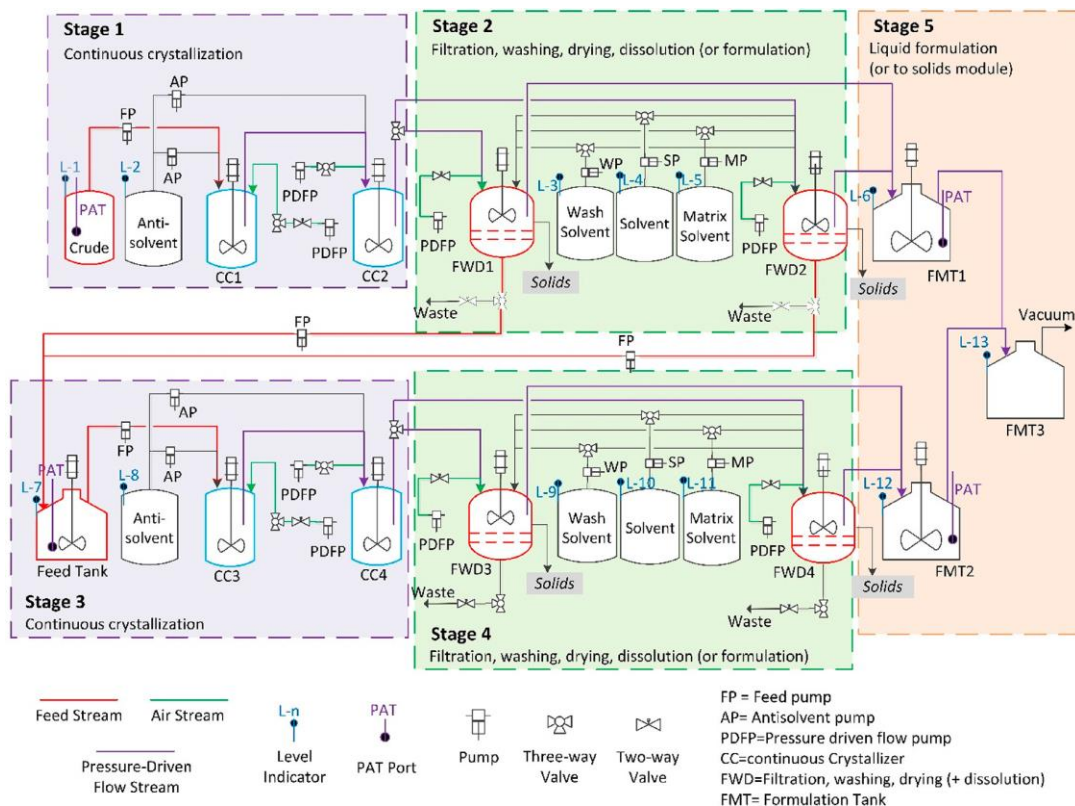


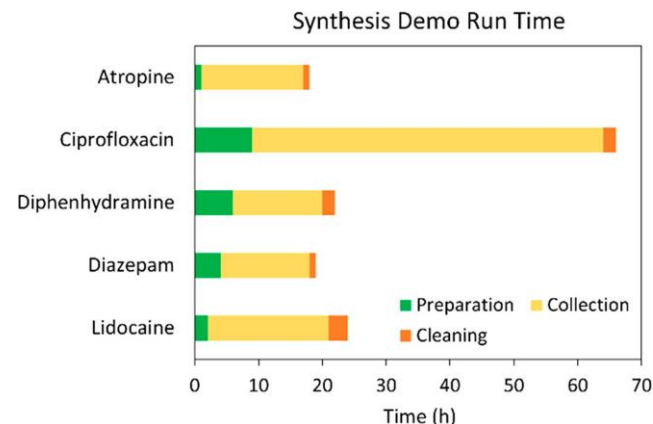
- Pharmacy on Demand (PoD) is an initiative to develop miniaturized reconfigurable platforms that can rapidly produce multiple APIs in response to specific national health crises, battlefield threats, epidemic or pandemic situations, and natural disasters.
- Under this model, there exists no single site of manufacturing; instead, multiple, smaller-scale points of manufacturing are established, allowing high value commodities to be manufactured when and where they are needed.
- This shift in manufacturing has the opportunity to reduce the risk of supply chain disruptions, theft, expiry, and quality control issues that large batch scale production can have.
- The goal of this study was to show that within 3 weeks their system could produce at least 1000 doses/day of 5 drugs on the WHO list of essential drugs.



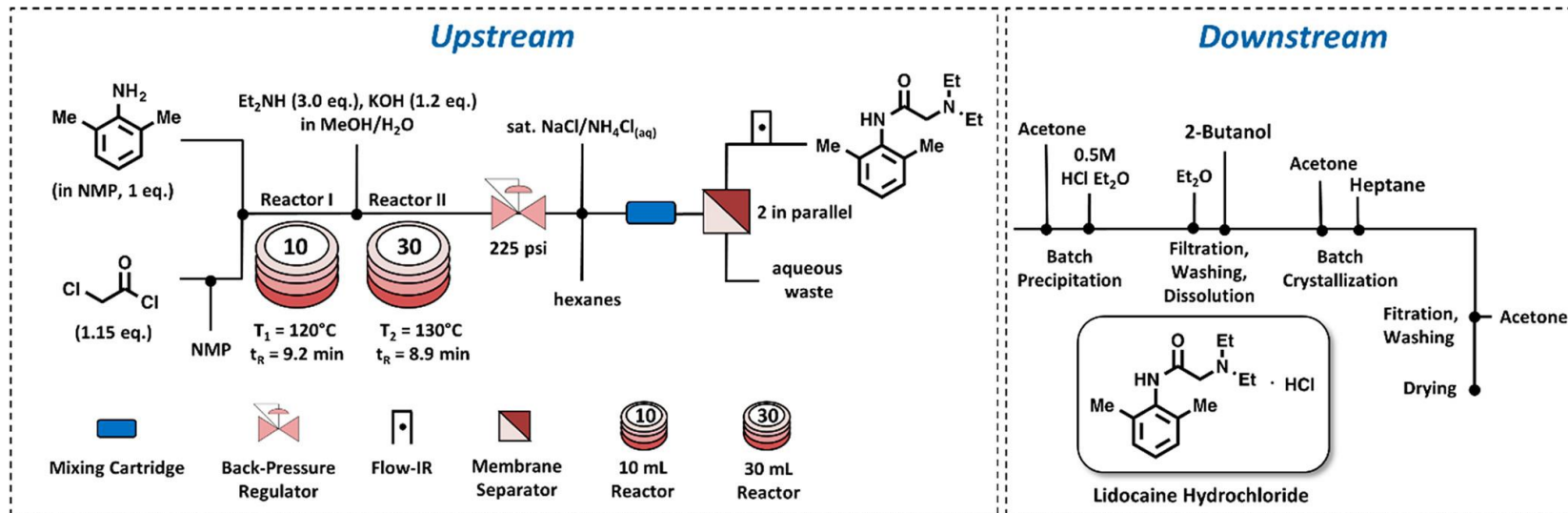
Purification Schematic:



Drug	Dose (mg)	Quantity made (g)	Doses/day
Atropine	0.4	0.66	6465
Ciproflaxacin	250	157	215
Diphenhydramine	25	32.4	4486
Diazepam	5	14.1	6500
Lidocane	50	51.0	1094

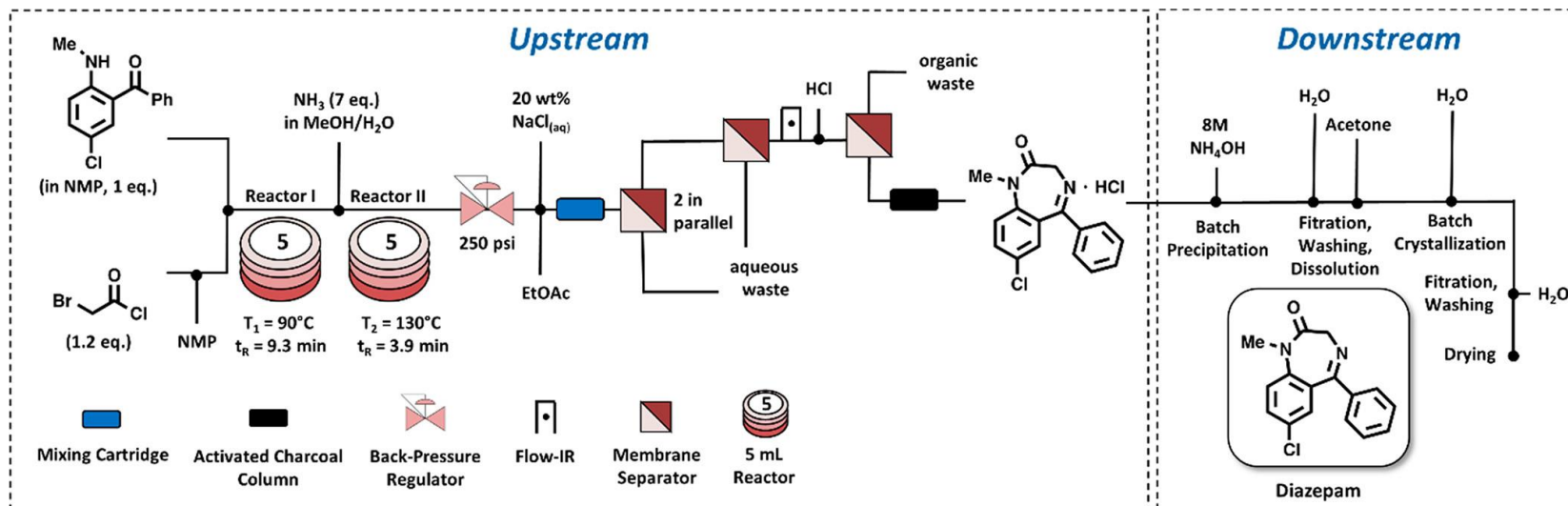


Lidocaine Route:



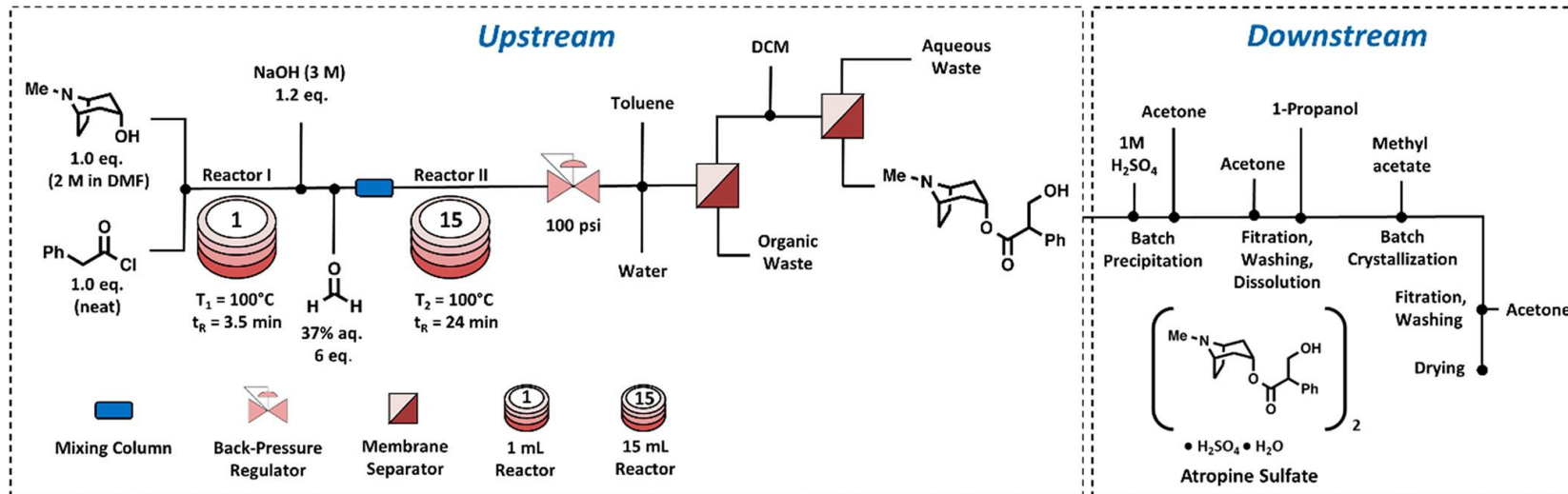
51.0 g of Lidocaine isolated after 19 hours of continuous production (1094 doses/day) and 830 doses were produced as a liquid formation

Diazepam Route:



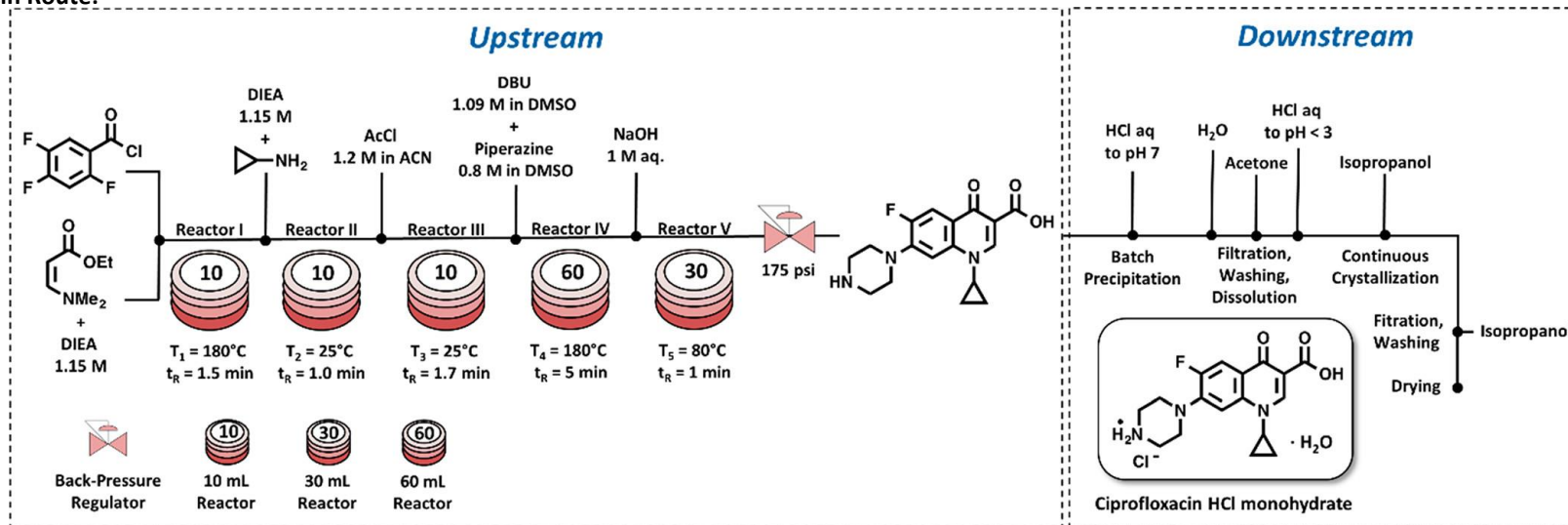
14.1 g of Diazepam isolated after 14 hours of continuous production (6500 doses/day) and 1176 tablets were formulated

Atropine Route:



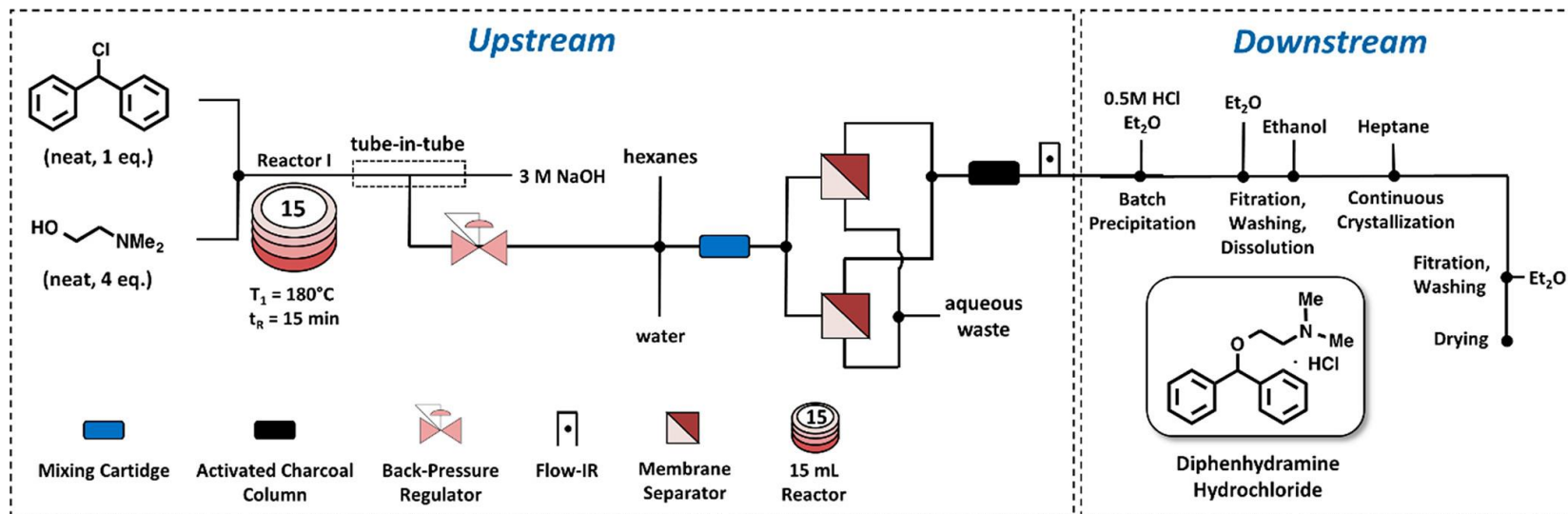
0.66 g of Atropine isolated after 18 hours of continuous production (6465 doses/day) and 1330 doses were produced as a liquid formation.

Ciprofloxacin Route:

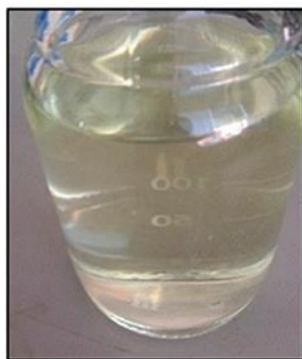


Due to issues with clogging and poor solubility on scale up only 157 g of ciprofloxacin were isolated after 48 hours of production (215 doses /day) and 133 tablets were formulated

Diphenhydramine Route:



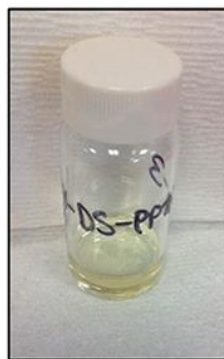
32.4 g of Diphenhydramine isolated after 14 hours of continuous production (4486 doses/day) and 886 tablets were formulated



Crude in hexanes



Crude HCl salt
after precipitation



HCl salt solution in
EtOH



Purified solid HCl salt



HCl salt tablets