Exhibit 2015

Description	Page

Dat

12

D

Date/Initials	Experiment 1
12 MAY 16 DVK	

12 MAY 16 DVK

Calibration for project AM1630 T: 145, 160 and 190 oC
QCS (ID)
NAME/Date

Reactor content: 1.5 mL Acetic Acid 20 bar Air/N2

Stirring rate=750rpm

chemicals	supplier	Lot No	CAS Nr	Avantium Nr	MW	purity
HMF	Epochem	[illegible]	67-47-0	[illegible]	126.11	99%
AMF	Aldrich	[illegible]	10551-58-3	[illegible]	165.15	99%
DMSO	Biosolve	[illegible]	67-68-5	[illegible]		99.80%
$Co(OAc)_2\ 4H_2O$	Sigma-Aldrich	[illegible]	6147-53-1	[illegible]	249.08	
$Mn(OAc)_2\ 4H_2O$	Aldrich	[illegible]	6156-78-1	[illegible]	245.09	99%
NaBr	Sigma	[illegible]	7647-15-6	[illegible]	102.89	
Acetic Acid	Biosolve	[illegible]	64-19-7	[illegible]	60.05	99.80%

SOLUTIONS:	HMF needed (g)	HMF actual	AMF needed (g)	AMF actual	Acetic Acid (mL) needed	Acetic Acid (mL) actual
A	2.5	5.09965	0		25	50
B	1.5	2.04856	1.333	2.65379	25	50
C	1	1.96407	2.000	3.95063	25	50

CAT	Co(AcO)2 4H2O needed (mg)	Co(AcO)2 4H2O actual	Mn(AcO)2 4H2O needed (mg)	Mn(AcO)2 4H2O actual	NaBr needed (g)	NaBr actual	AcOH mL to mark
	226.643	226.7715	223.012	225.0715	187.243	187.612	85
	266.64	266.79	262.37	264.78	220.29	220.72	100

conditions: Air 20 bar, T = 195 oC, 0.5 hr reaction time

	QCS (ID)	amount (ml)	Cat (ml)	pressure	empty (mg)	Solution (mg)	Cat (mg)
AM1633-R1-13	A	0.5	1	20	43016	553.8	1048.09
AM1633-R1-14	B	0.5	1	20	44209.6	533.34	1049.32
AM1633-R1-15	C	0.5	1	20	43499.4	534.32	1048.03
AM1633-R1-16	C	0.5	1	20	43262	534.14	1047.92
AM1633-R1-17	B	0.5	1	20	43064	533.67	1046.79
AM1633-R1-18	C	0.5	1	20	42636.7	534.37	1048.2
AM1633-R1-19	A	0.5	1	20	43184.9	534.16	1048.36
AM1633-R1-20	A	0.5	1	20	43368.4	534.09	1047.89
AM1633-R1-21	C	0.5	1	20	43675.9	536.99	1048.07
AM1633-R1-22	A	0.5	1	20	43396	534.56	1048.21
AM1633-R1-23	B	0.5	1	20	43487.8	534.66	1048.05
AM1633-R1-24	B	0.5	1	20	43358	533.54	1048.19

QCS block: location as last time please! -->>

A	B	C	C
B	C	A	A
C	A	B	B

reactors:

1	2	3
5	6	7
9	10	11

clean blocks with sleeves
add stirrer and and weigh blocks
close and pressurize
place in pre-heated block according to settings
fill in log book
place immediately after reaction time (1Hr) in ice (30 minutes)
decompress and open in fumehood
if possible weigh reactors
make ES 70 mg/mL solution (350 mL) — 0 mg/mL — 24.5 gram
add saccharine stock solution and stirr until dissolved —>>> step 1: add 5 mL ES — 24500 mg saccharine in 350 mL (to mark 350)
step 2: take 10uL and add to 3 mL water

take solutions and add them to sample vials containing H2O

calculations:							
sample work up:						step 2	add to:
reactor content:	1.5 mL	step 1: Add ES	new concentrations:	mg/mL	use	H2O (mL)	final concentration
ES concentration:	70 mg/mL	mL added	sacharin	53.84615385	0.01	3	0.176890877
estimated furanics in rea	61.88644854 mg	5	fdca	9.520992052			0.031631203

recipe:
step 1: Add ES (5 mL) directly to the reactor

ES	70 mg/mL	35 g	35.1365 gram
amount:	5 mL	500 mL	70.273 mg/mL

step 2: stir until all is dissolved:
step 3: dilute
take 10 uL of solution
add to 3 mL of water in a vial

step 4: take 1 mL of the resulting solution and submit for UPLC analysis

12 MAY 16 DVK

12 MAY 16 DVK

Date/Initials	Experiment