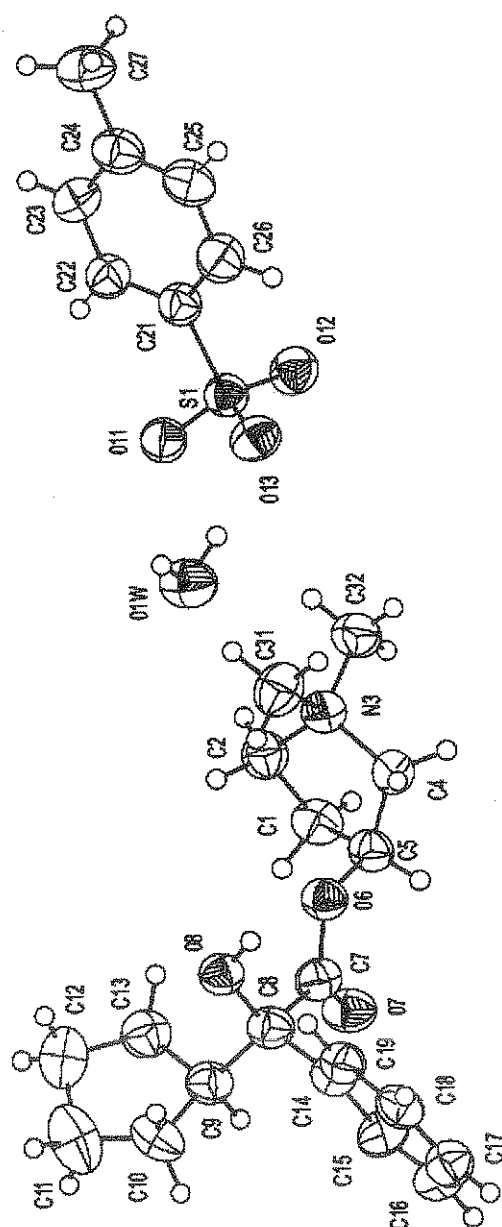


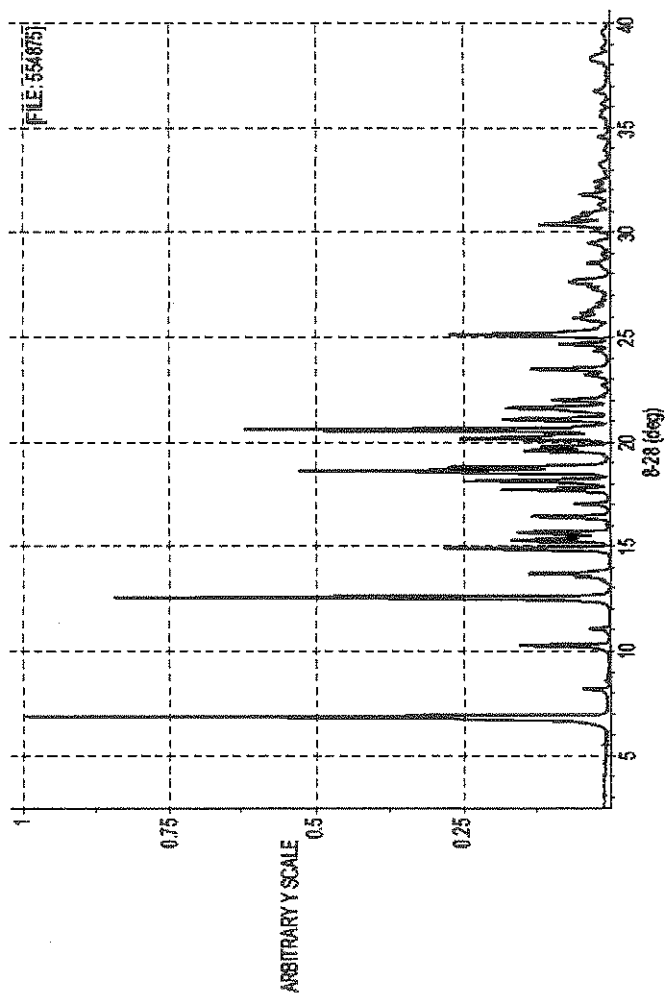
1/45



ORTEP OF FORM D GLYCOPYRROLATE TOSYLATE MONOHYDRATE

FIG. 1

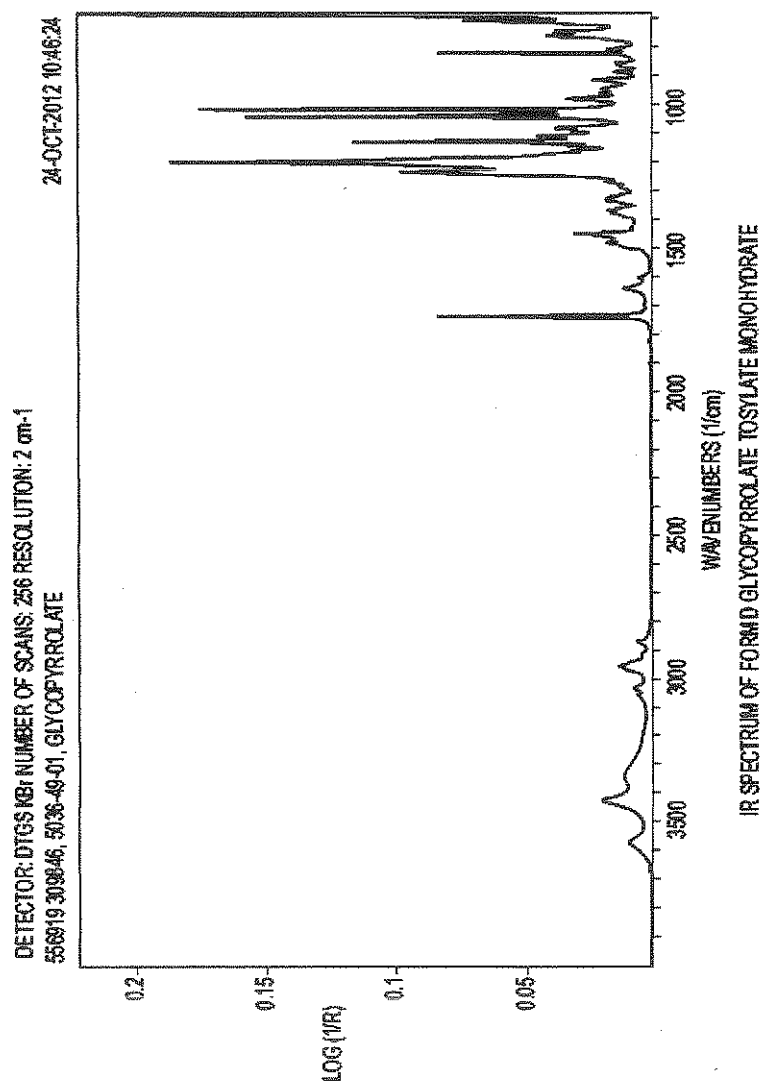
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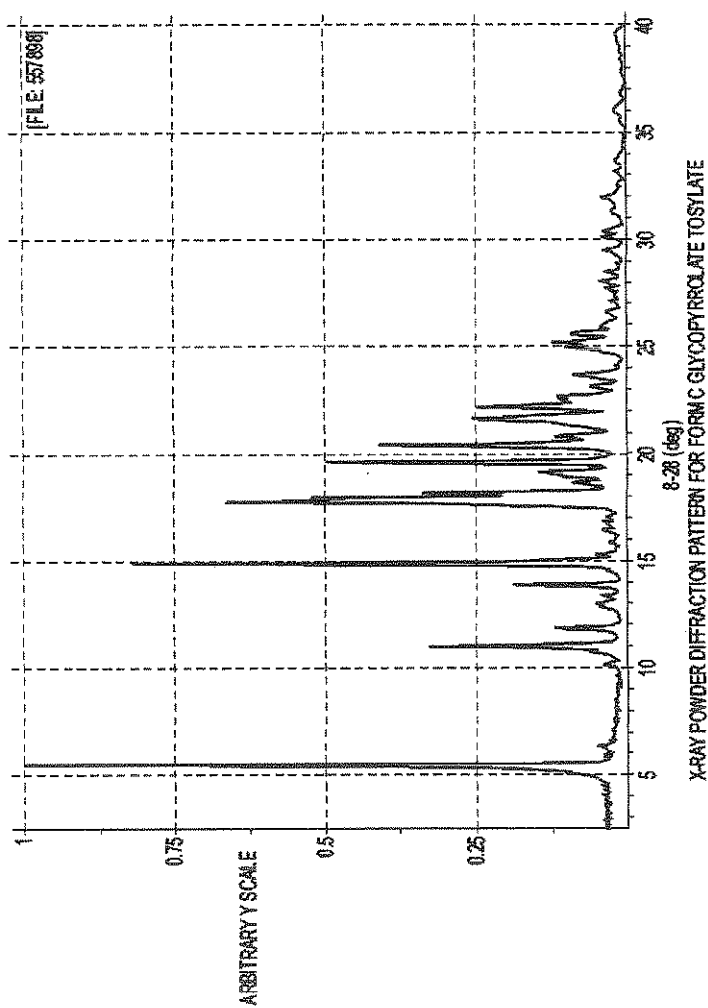
X-RAY POWDER DIFFRACTION PATTERN OF FORM D GLYCOPYRROLATE TOSYLATE MONOHYDRATE

FIG. 2

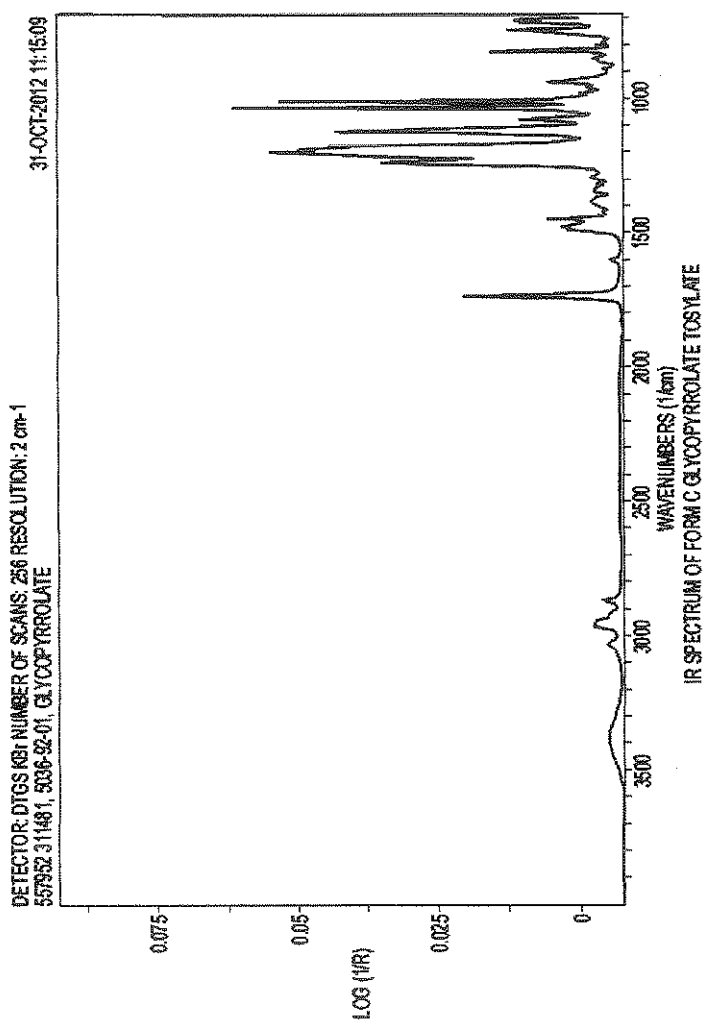
3/45

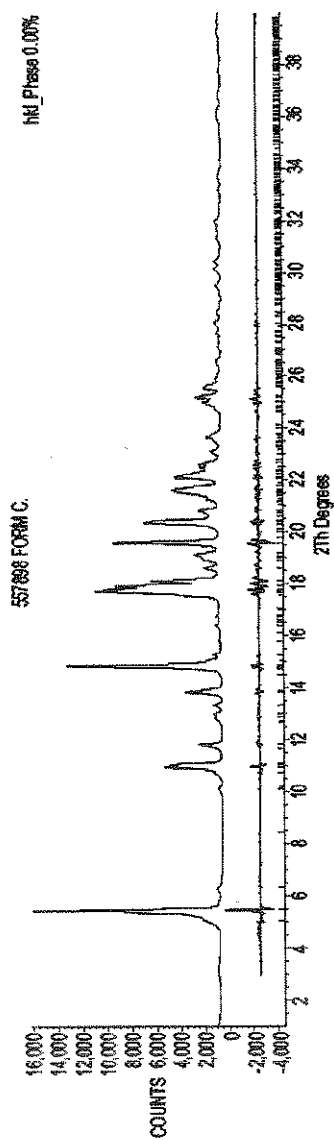
**FIG. 3**

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**FIG. 4**

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**FIG. 5**

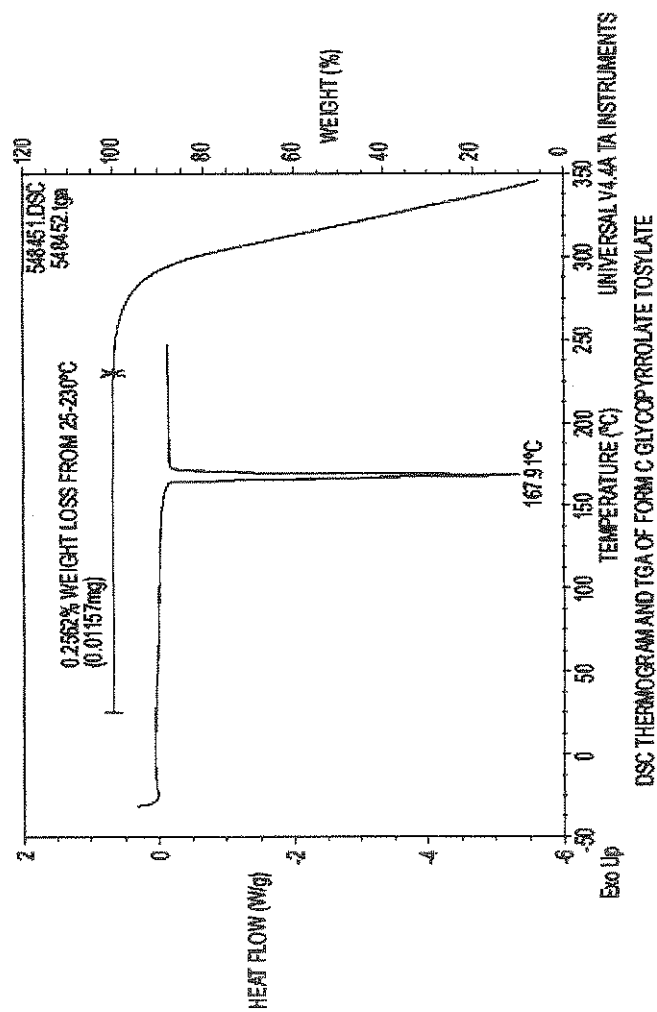


INDEXING SOLUTION FOR FORMIC GLYCOPYRROLATE TOSYLATE WITH PAWLEY REFINEMENT

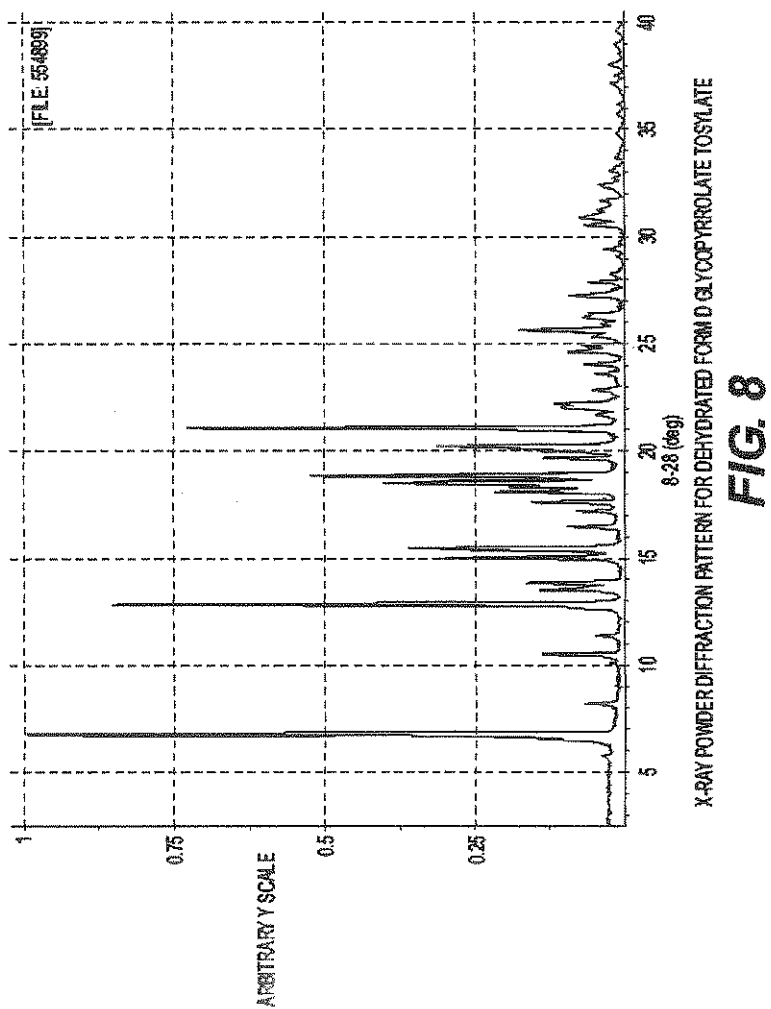
667

Purity refinement Range=7.56%
 space group $P1/P4$
 Volume=2619 Å³
 a=5.55 Å
 b=17.45 Å
 c=18.10 Å
 α=74.31°
 β=69.82°
 γ=105.73°

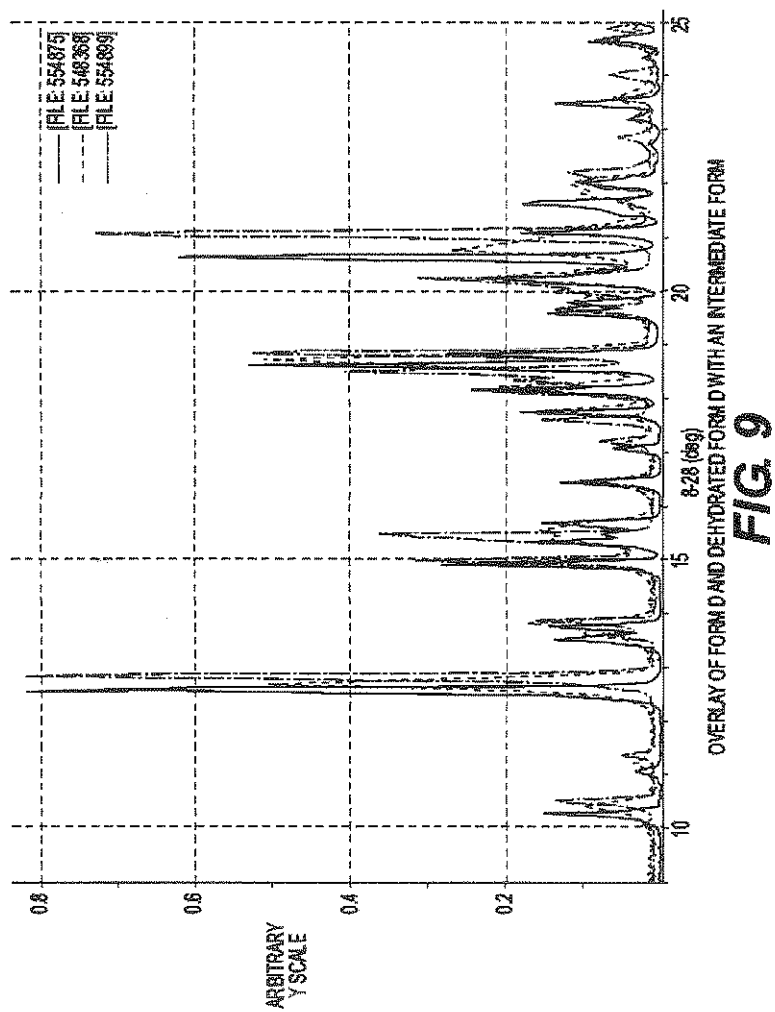
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**FIG. 7**

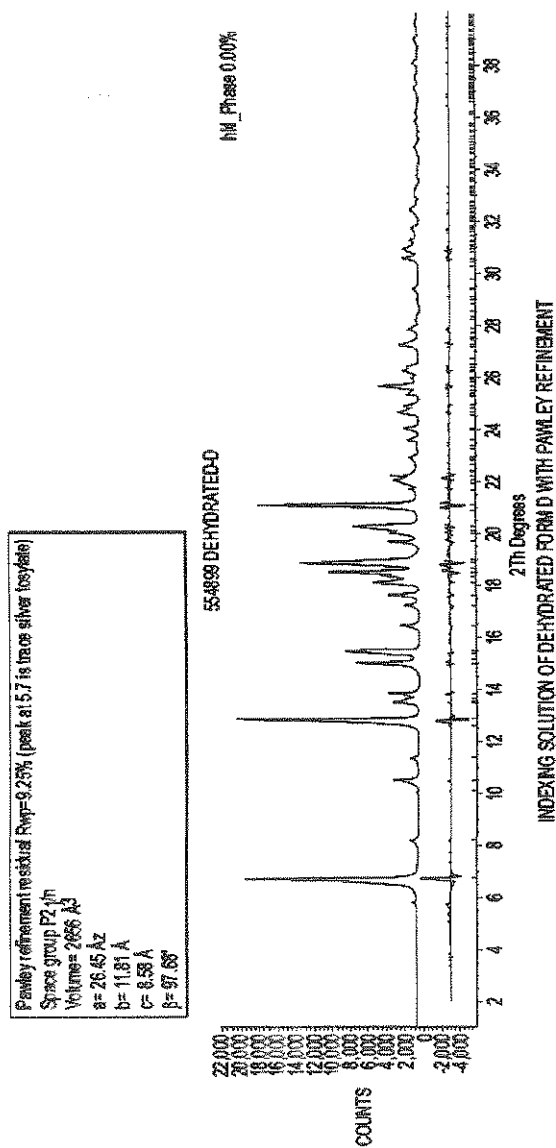
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**FIG. 10**

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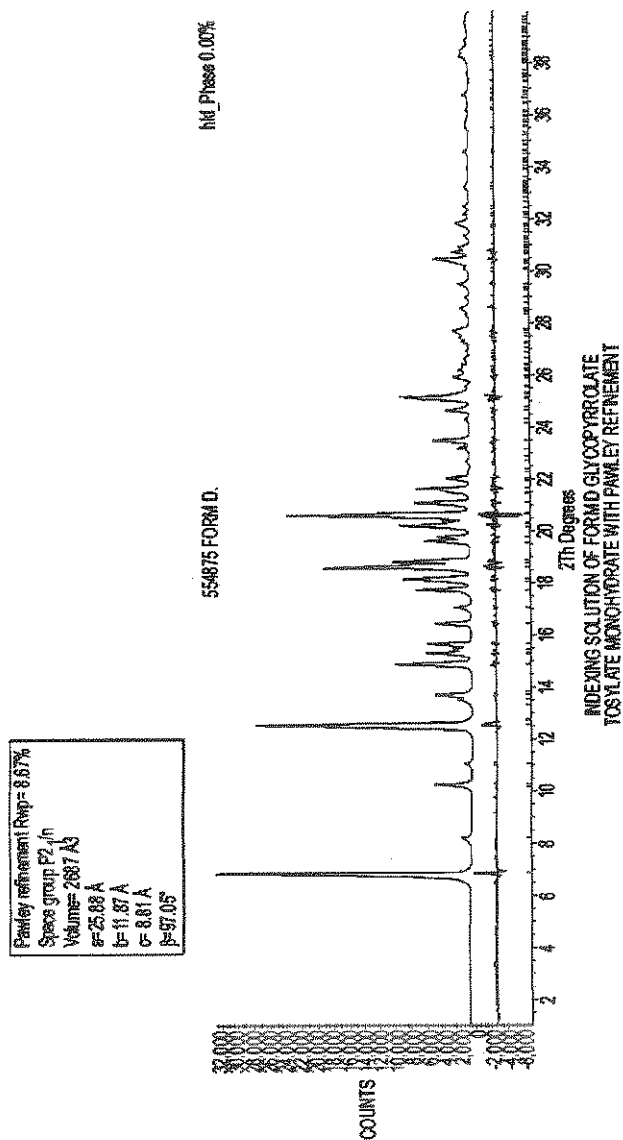


FIG. 11

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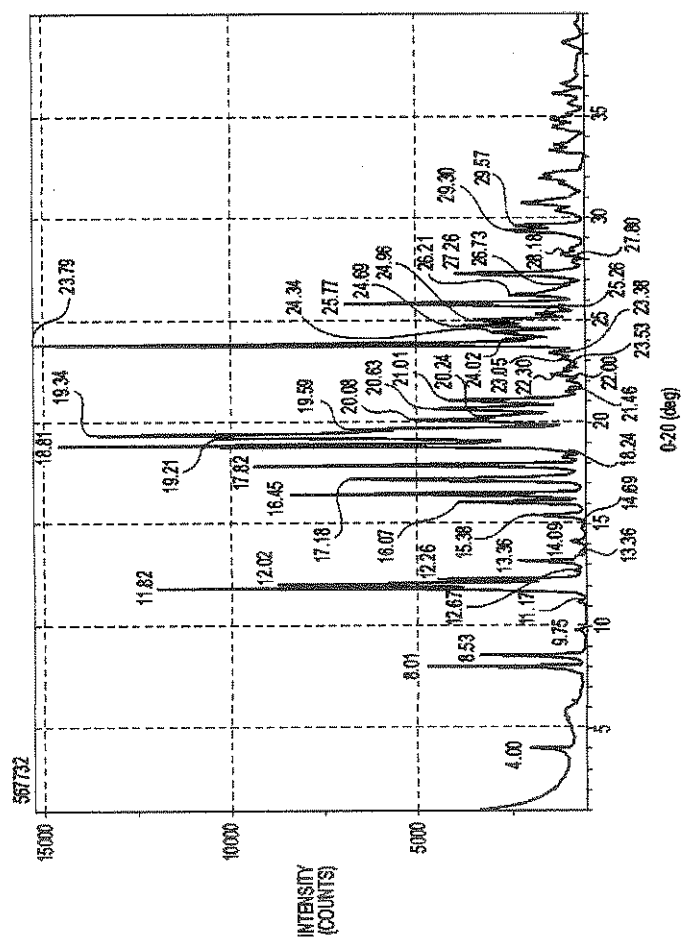
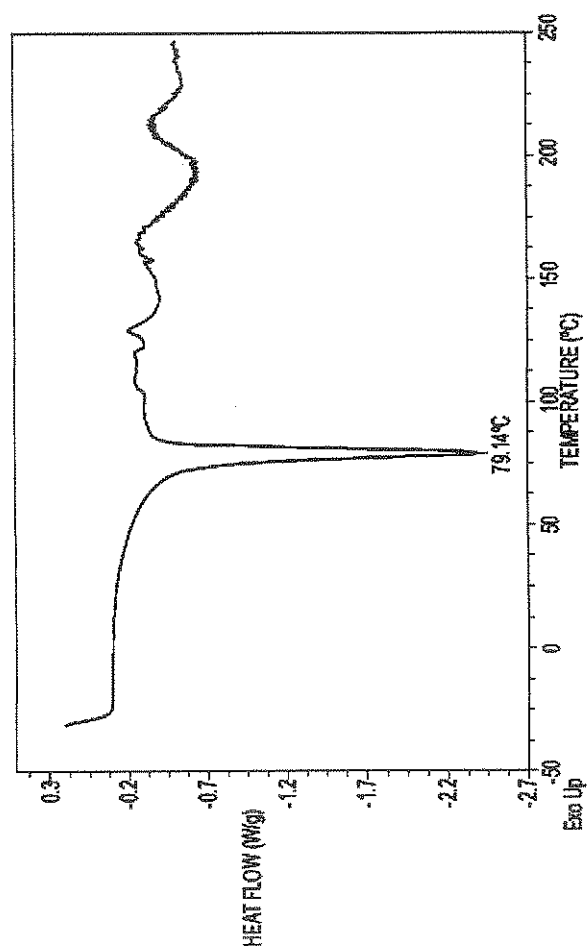


FIG. 12

X-RAY POWDER DIFFRACTION PATTERN FOR CRYSTALLINE GLYCOPYRROLATE BENZOATE WITH PEAK PICKS

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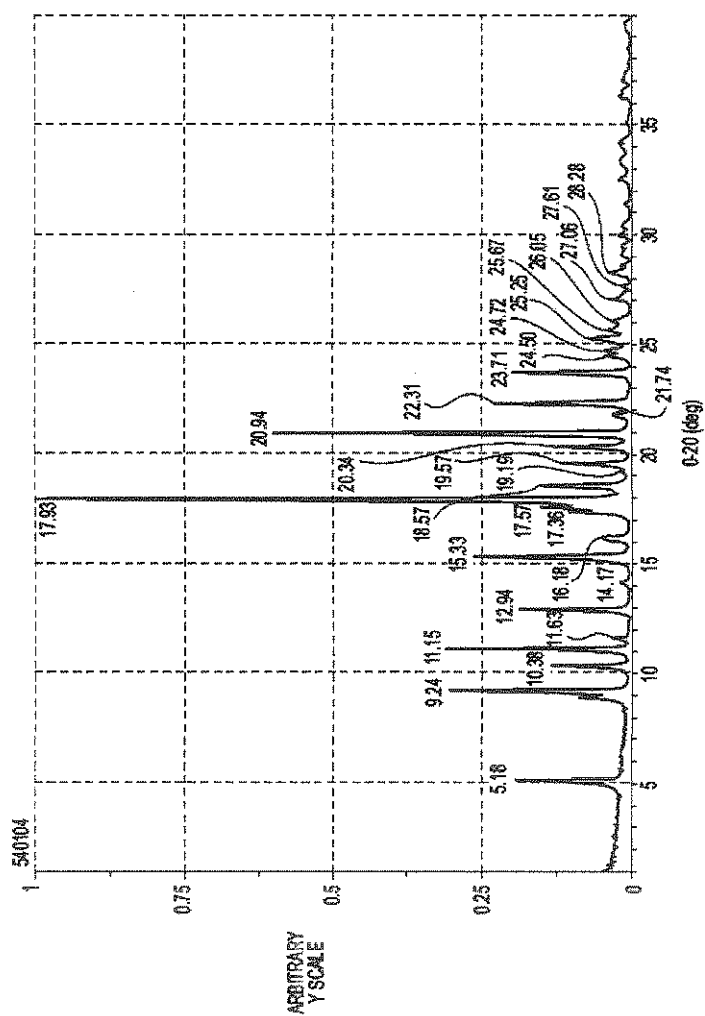
SAMPLE: GLYCOPYRROLATE
SIZE: 1.2200 mg
METHOD: (-30):250:10
COMMENT: 302118, 4943-14-04, 10°C/min, TDC
DSC
FILE: HJMS1EP20120605CS41197.DSC
OPERATOR: KEL
RUN DATE: 18-JUL-2012 15:27
INSTRUMENT: 2920 MDSC V2.6A



DSC THERMOGRAM FOR CRYSTALLINE GLYCOPYRROLATE BENZOATE

FIG. 13

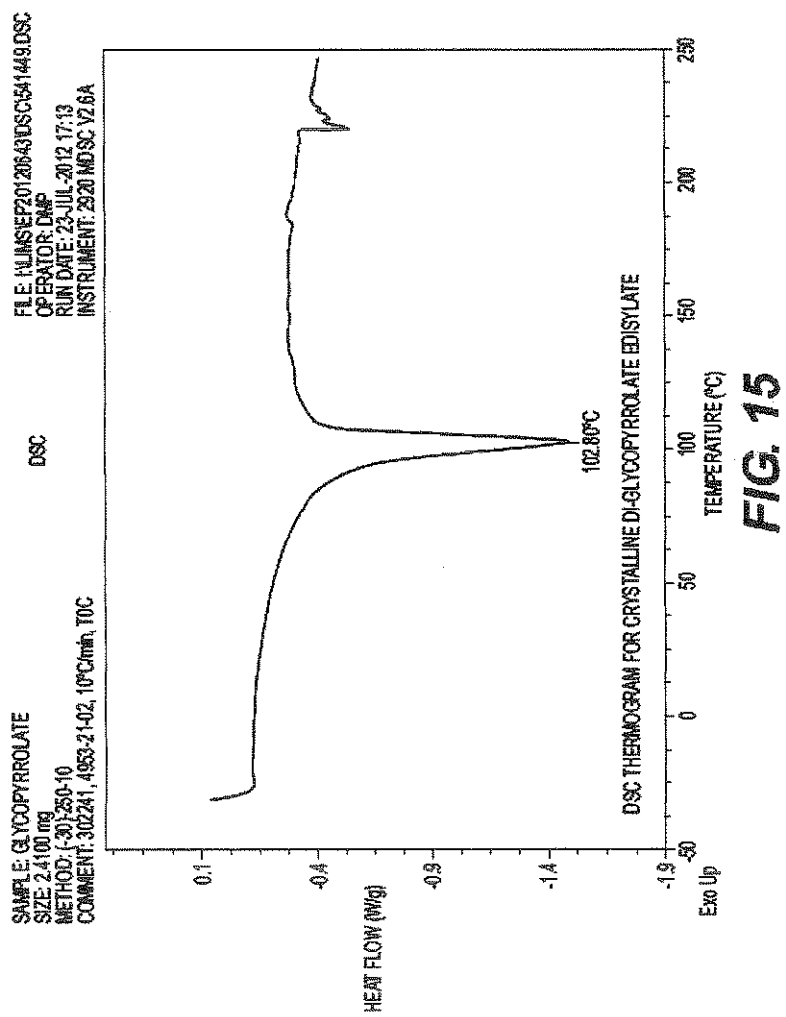
14/45



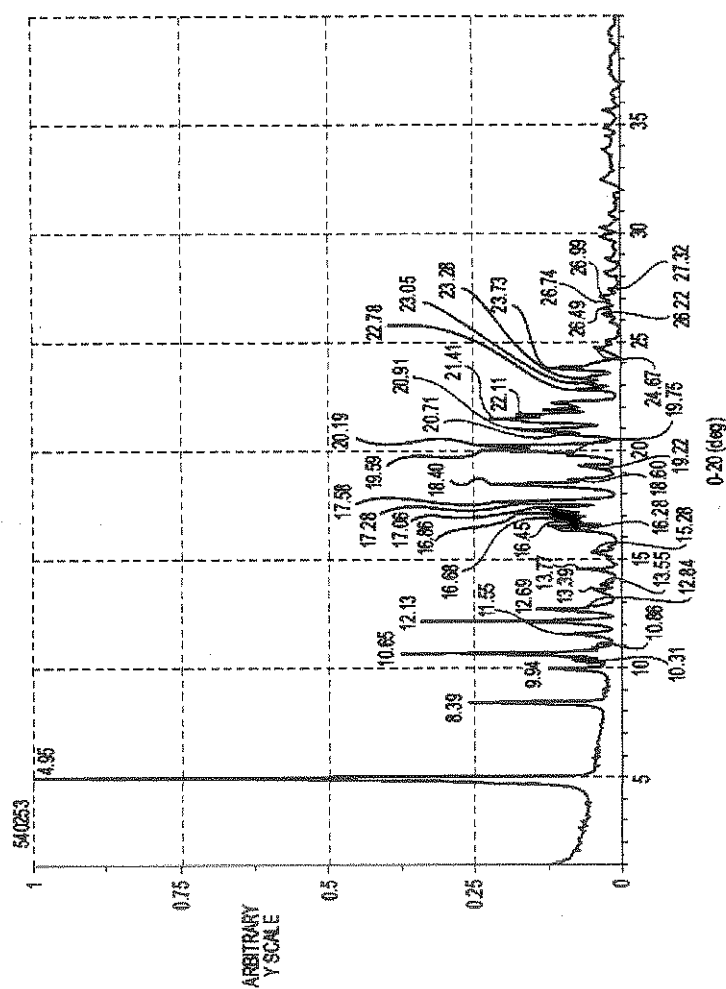
X-RAY POWDER DIFFRACTION PATTERN FOR CRYSTALLINE DI-GLYCOPYRROLATE
EDISYLATE WITH PEAK PICKS

FIG. 14

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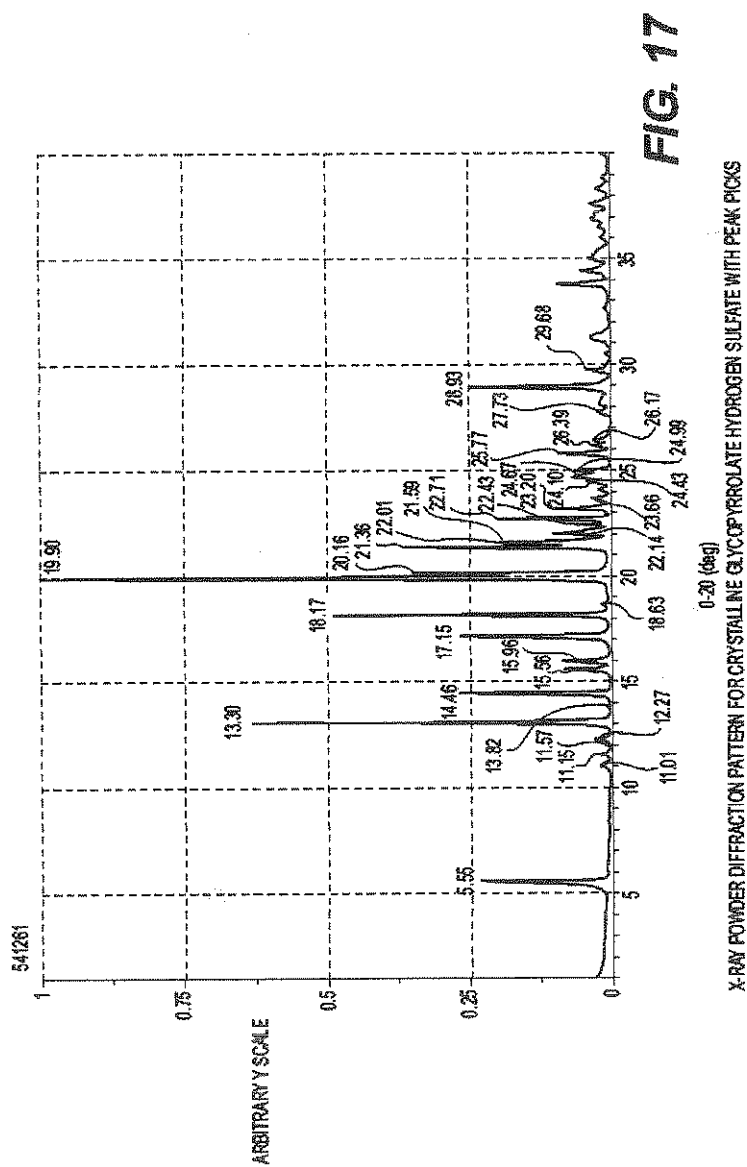
**FIG. 15**

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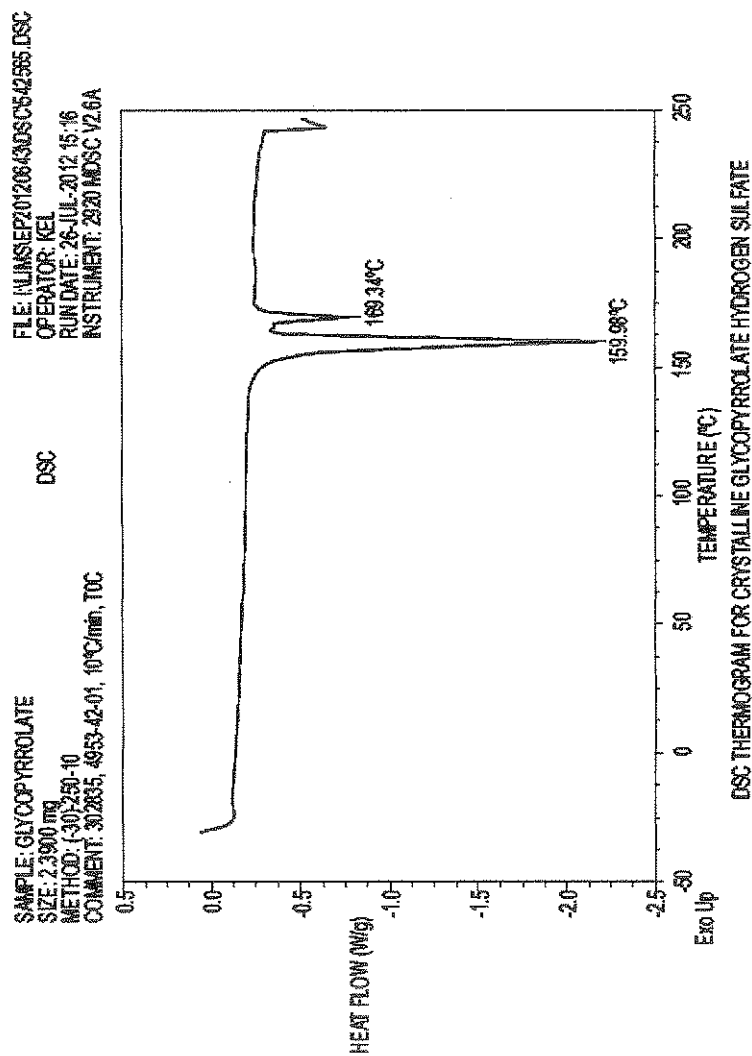
**FIG. 16**

X-RAY POWDER DIFFRACTION PATTERN FOR CRYSTALLINE GLYCOPYRROLATE OXALATE WITH PEAK PICKS

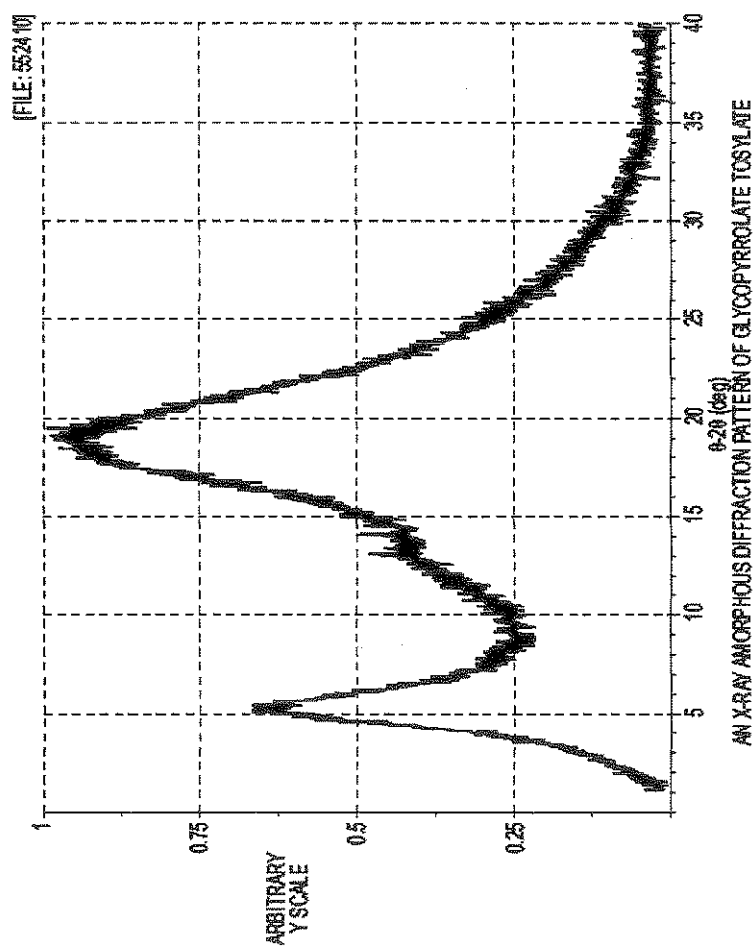
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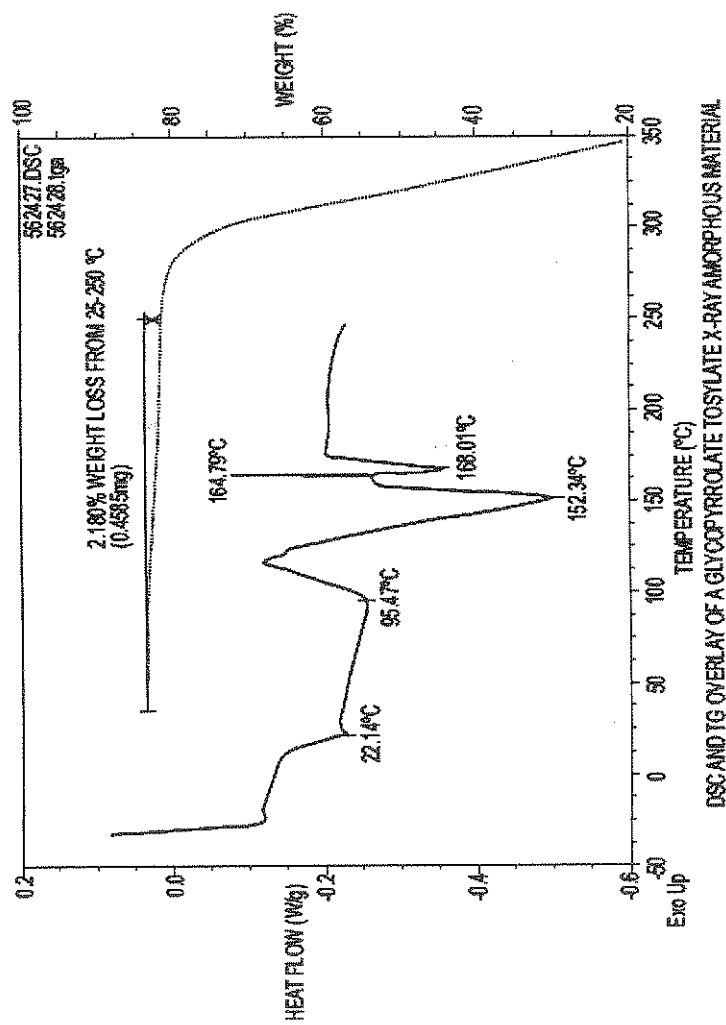
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**FIG. 18**

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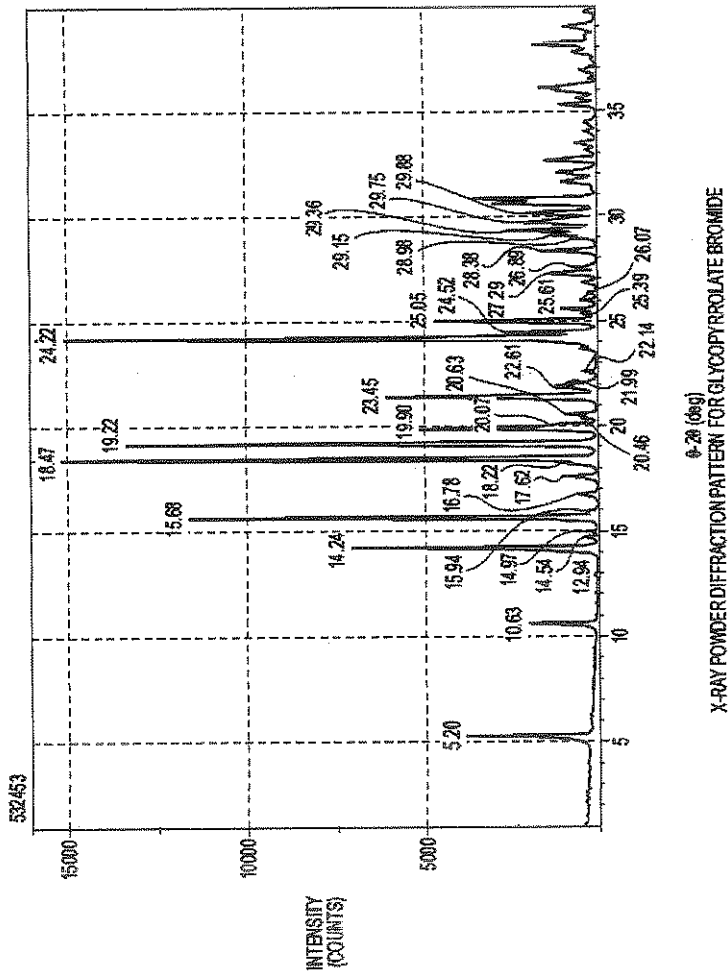
**FIG. 19**

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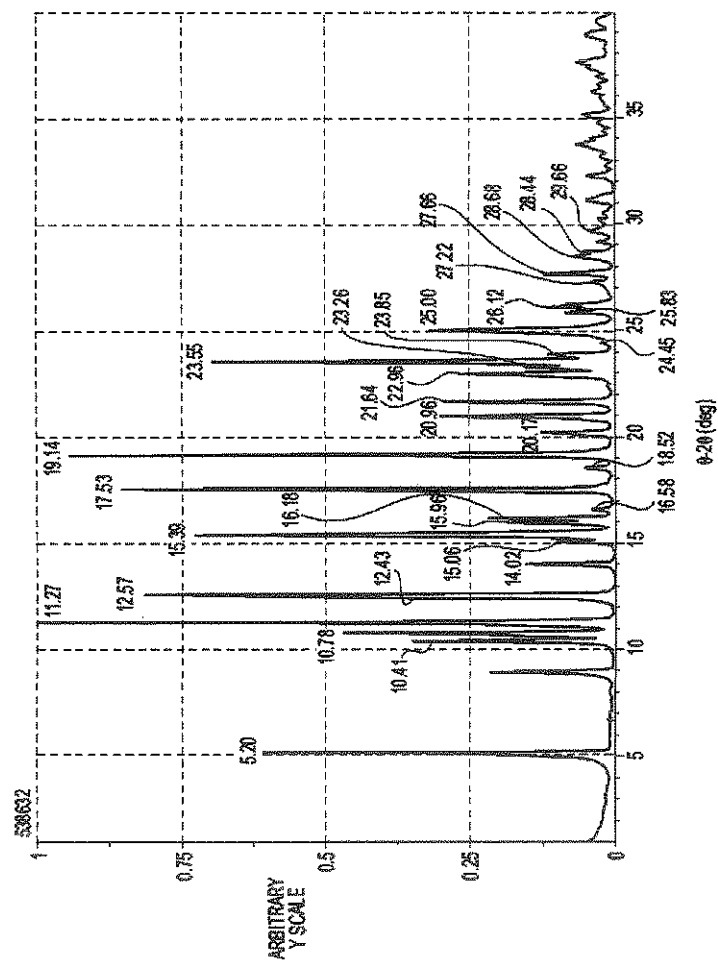
**FIG. 20**

DSC AND TG OVERLAY OF A GLYCOPYRROLATE TOSYLATE X-RAY AMORPHOUS MATERIAL

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**FIG. 22**

X-RAY POWDER DIFFRACTION PATTERN FOR GLYCOPYRROLATE ACETATE

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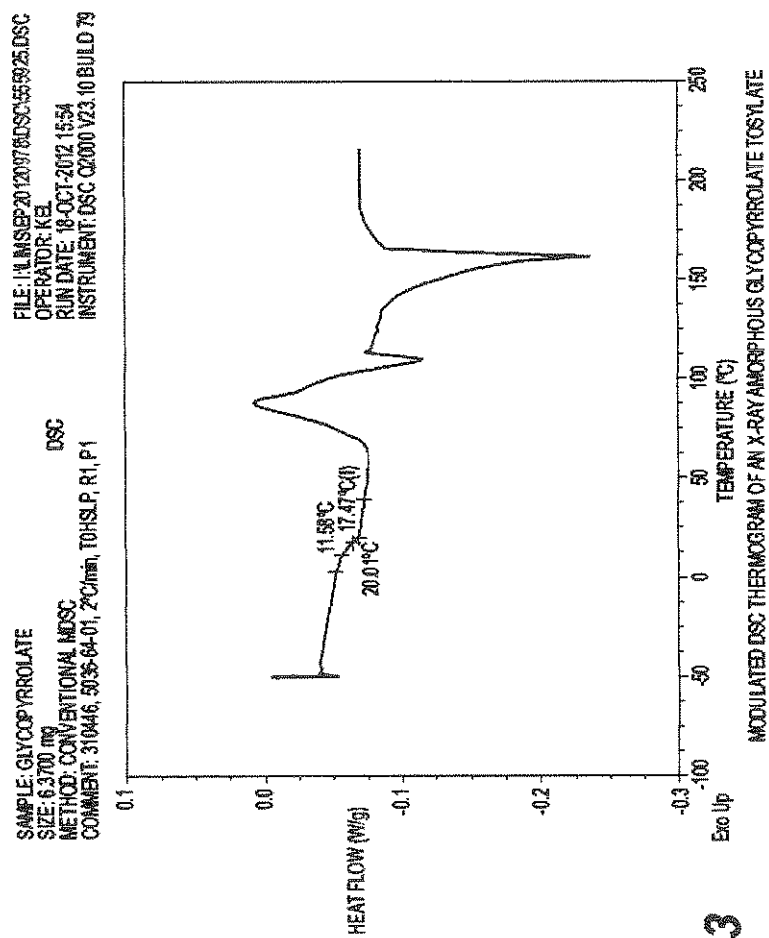


FIG. 23

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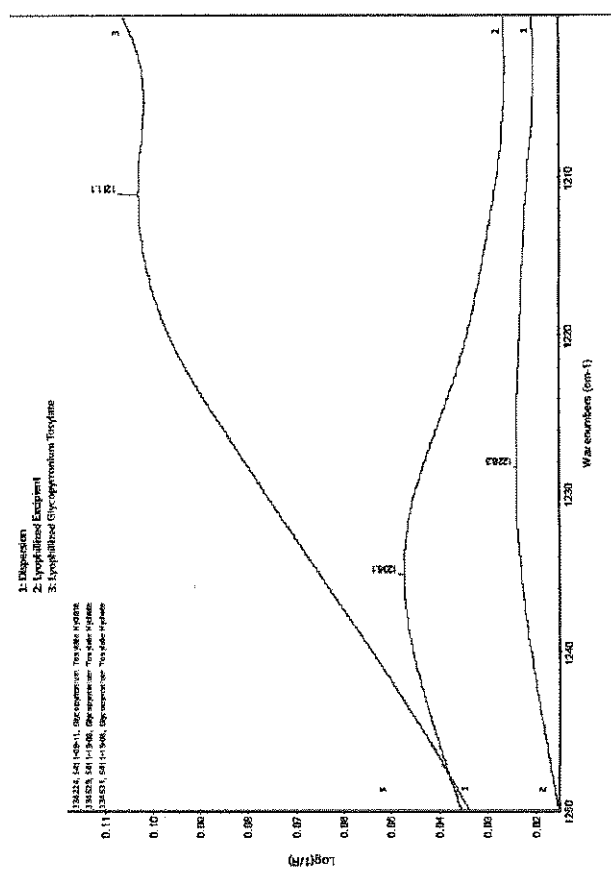


FIG. 24

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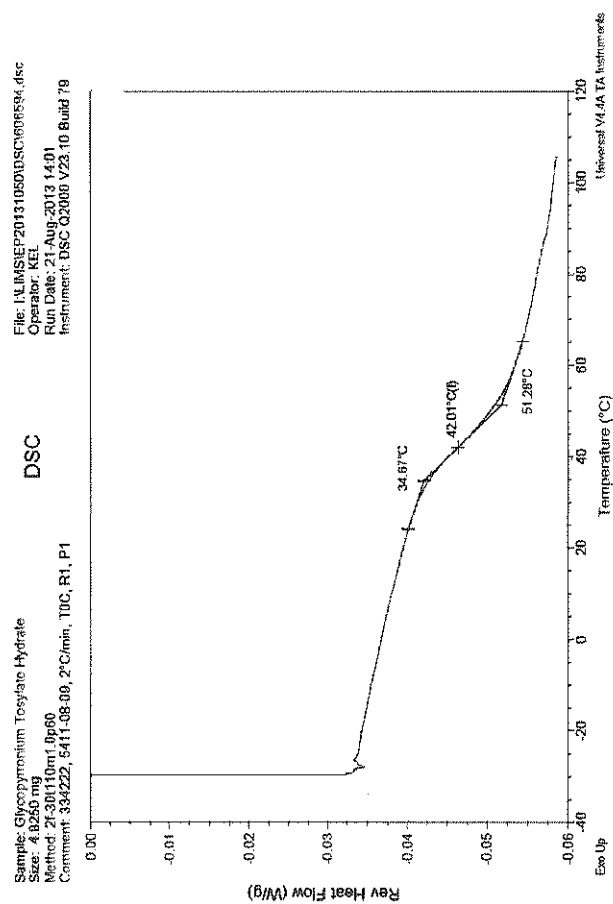


FIG. 25

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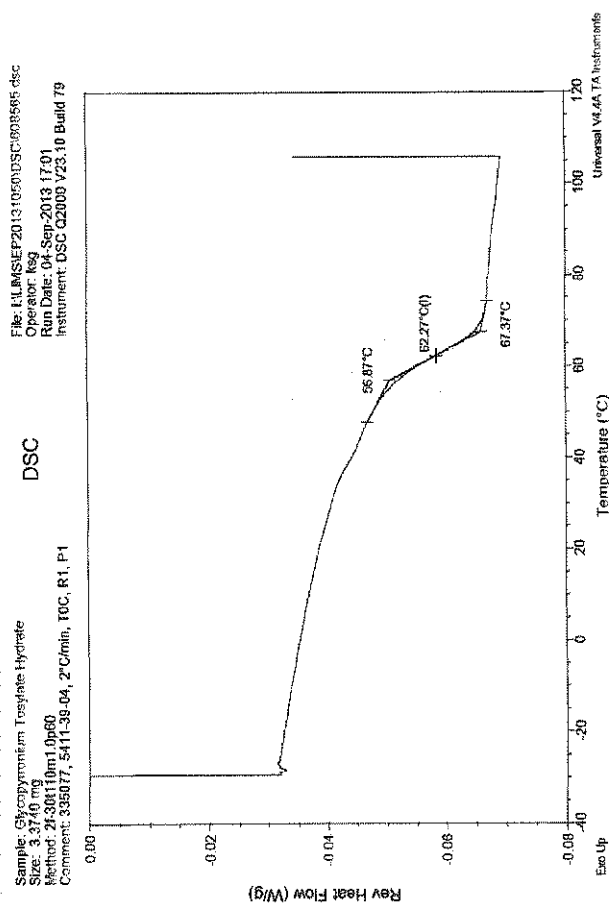


FIG. 26

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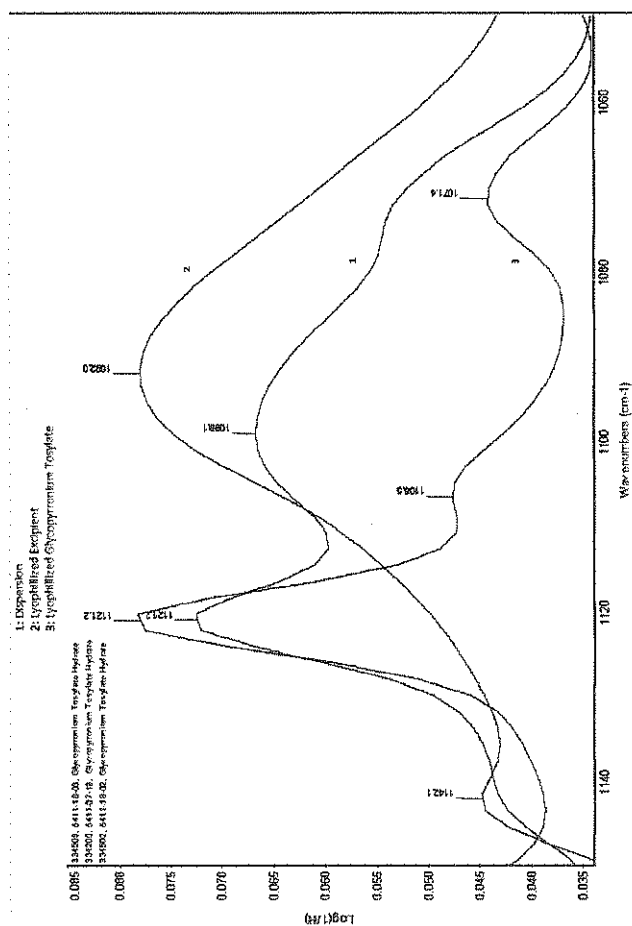


FIG. 27a

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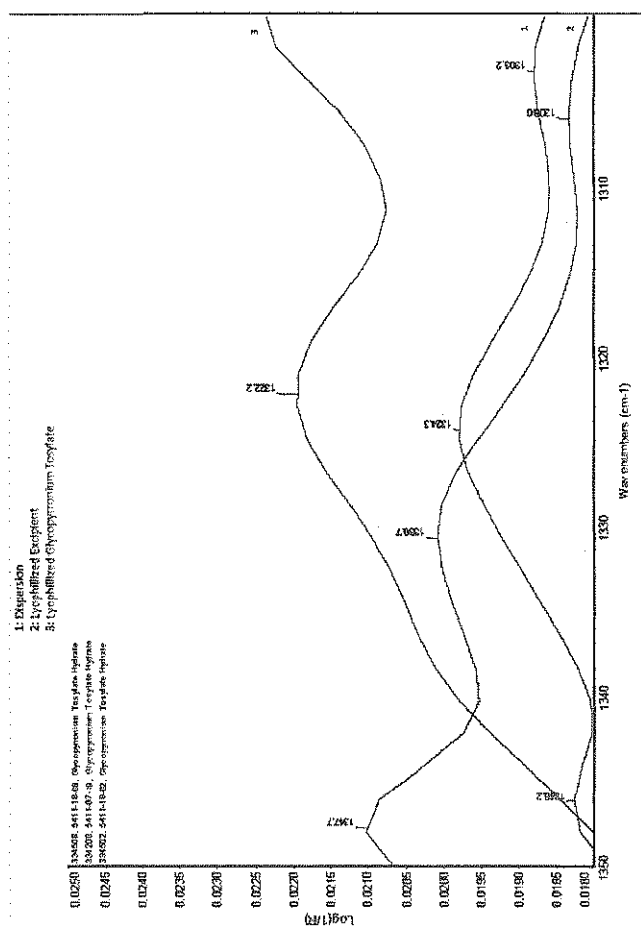
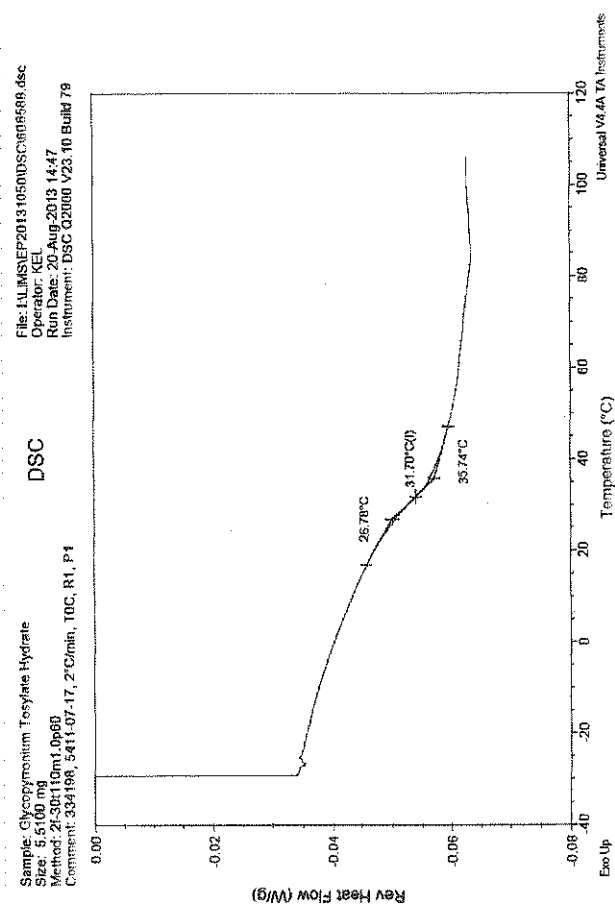


FIG. 27b

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**FIG. 28**

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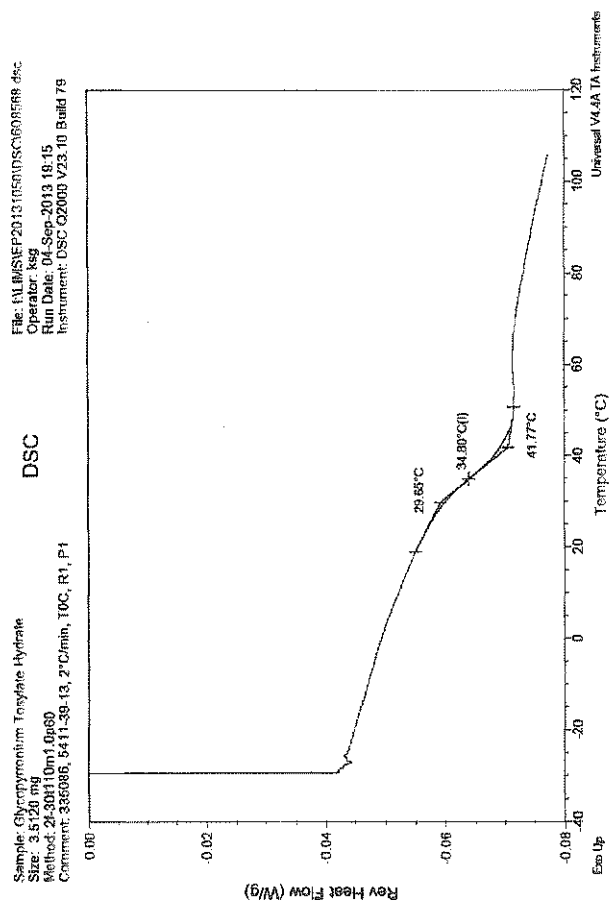


FIG. 29

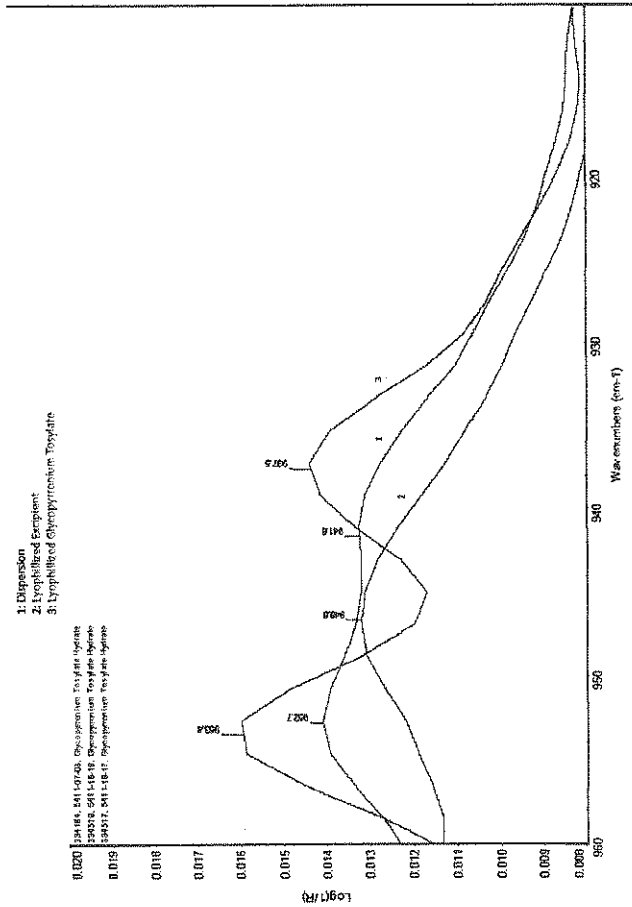


FIG. 30a

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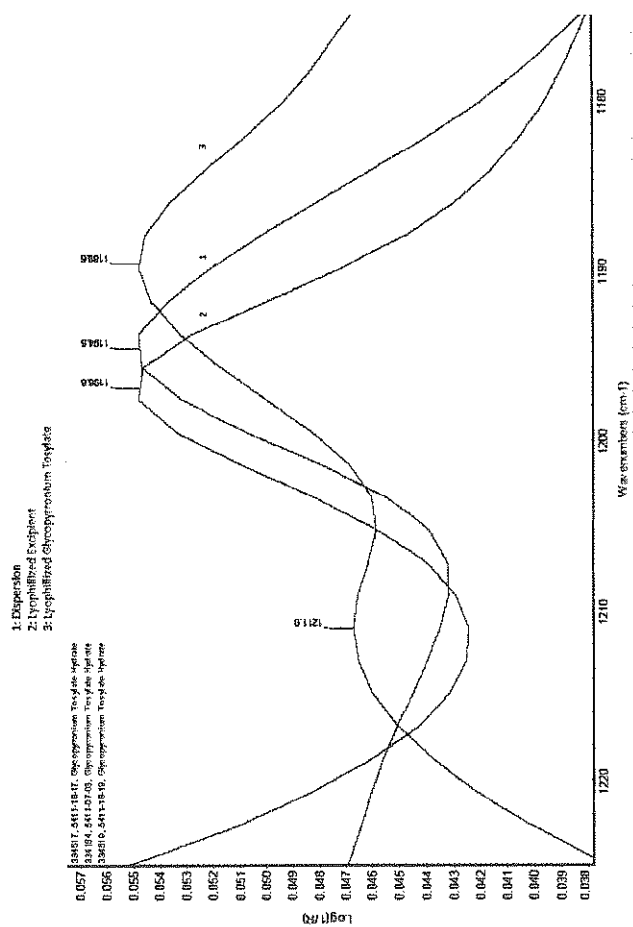


FIG. 30b

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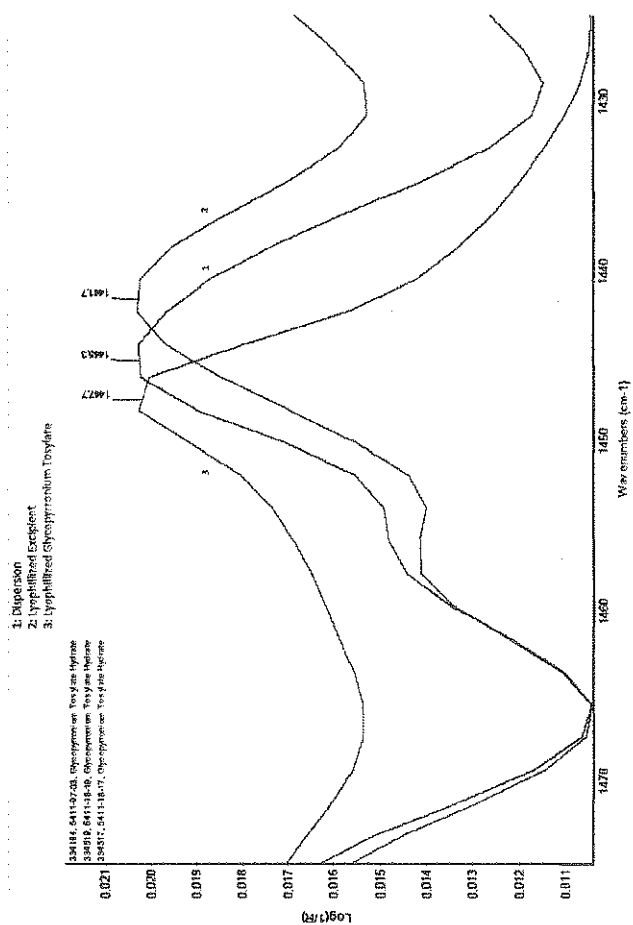


FIG. 30c

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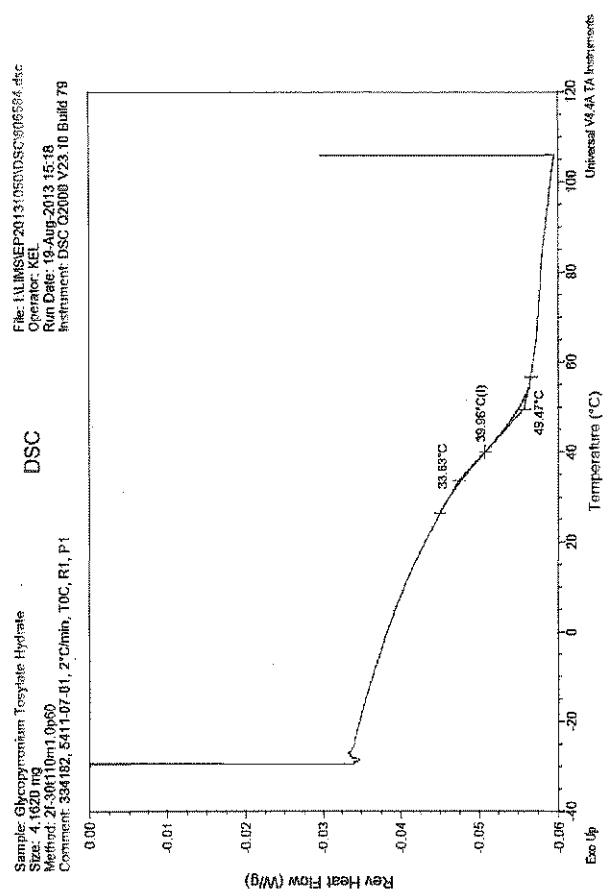


FIG. 31

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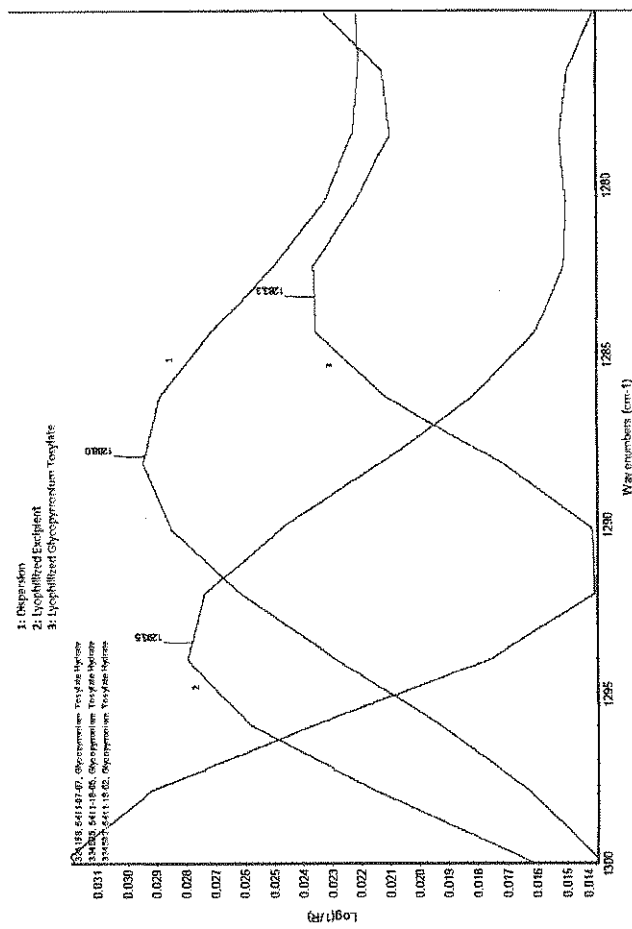


FIG. 32a

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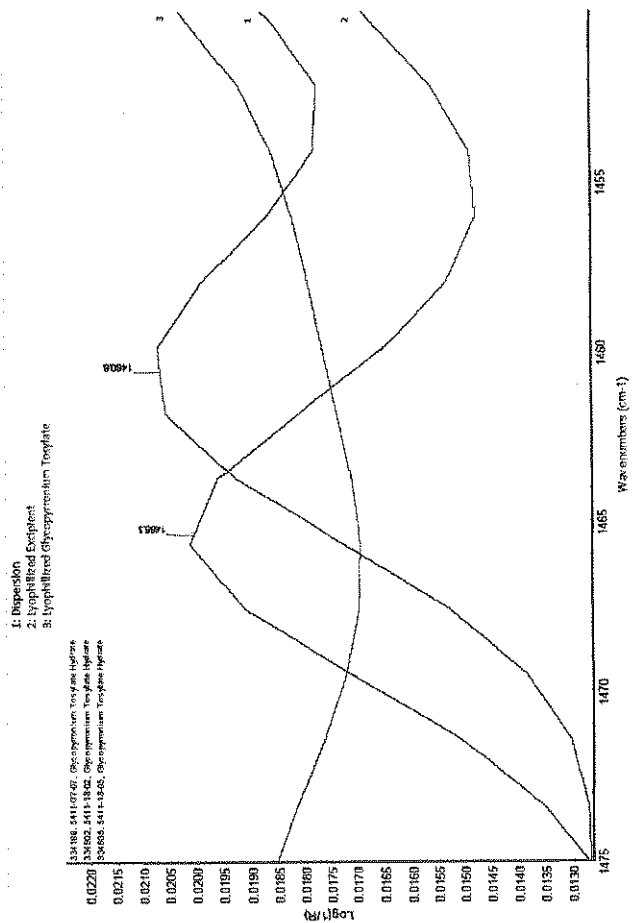


FIG. 32b

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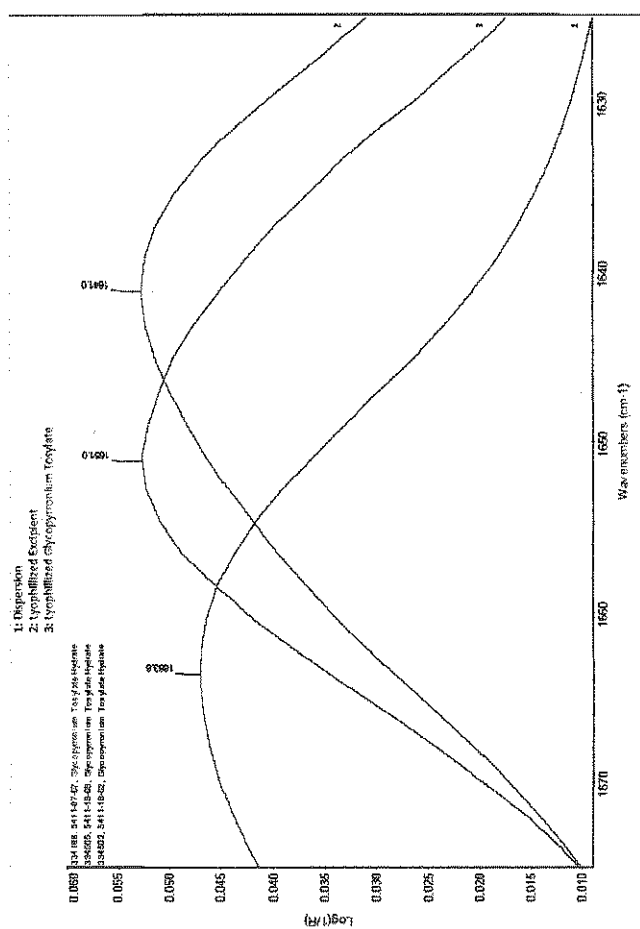


FIG. 32C

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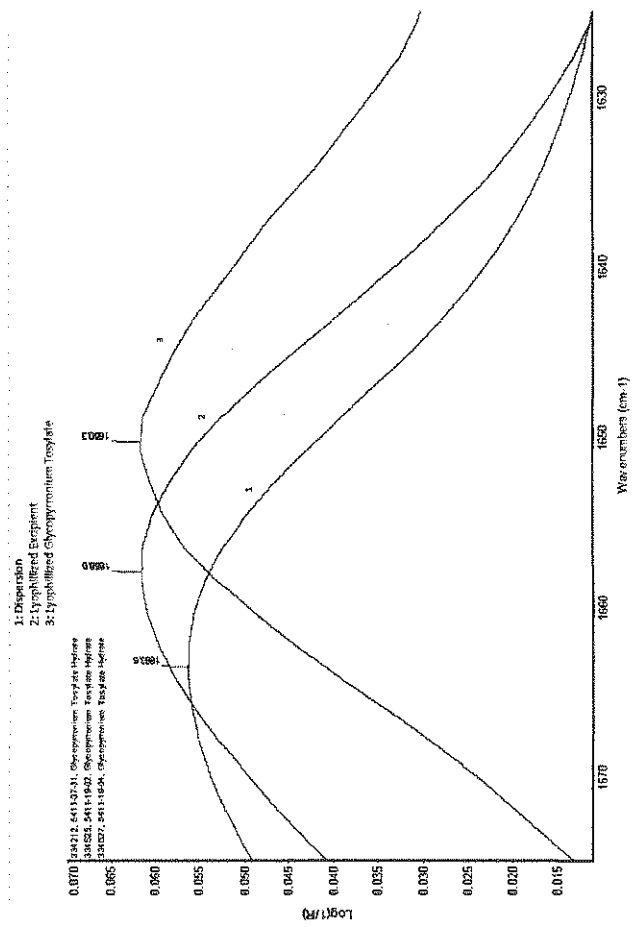


FIG. 32d

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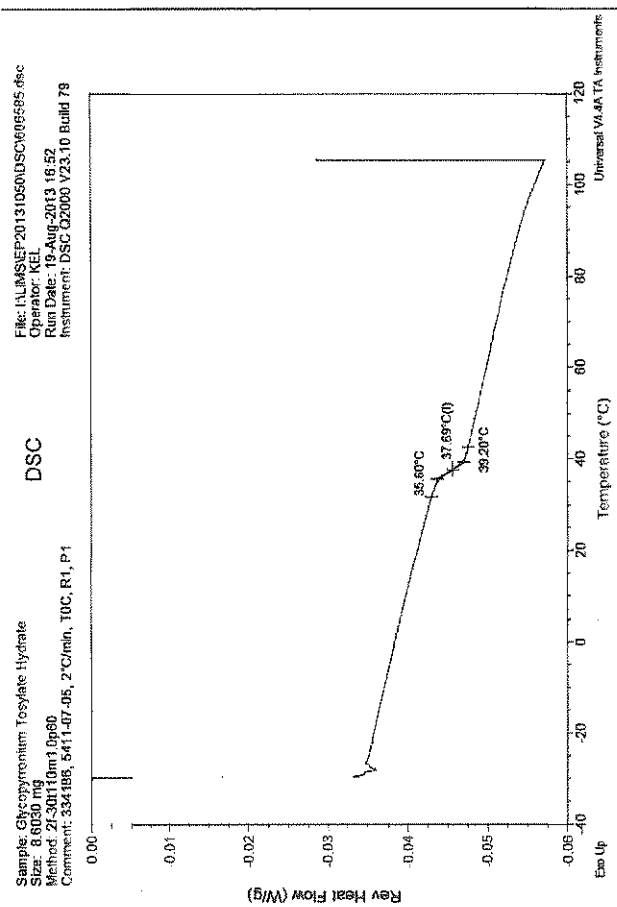


FIG. 33

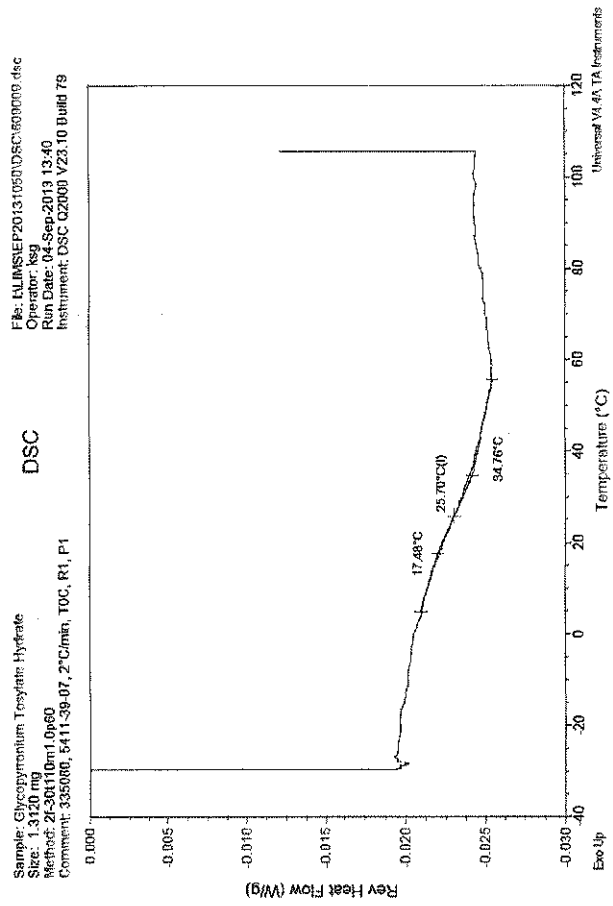


FIG. 34

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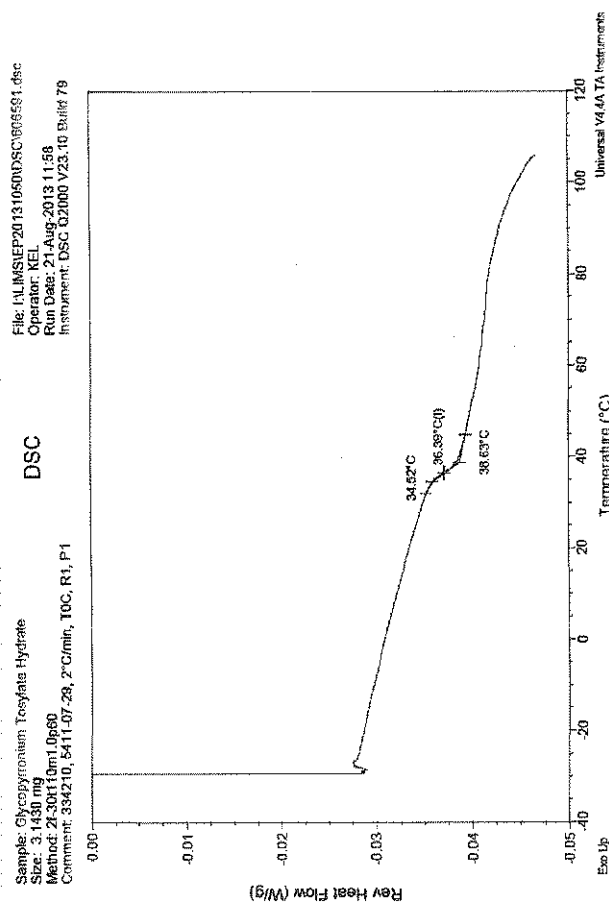


FIG. 35

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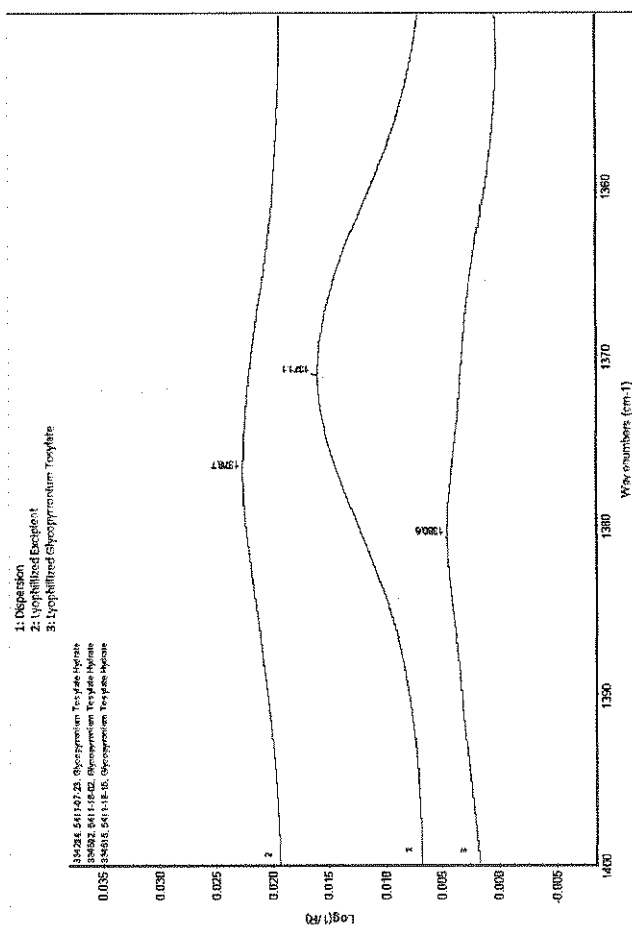


FIG. 36a

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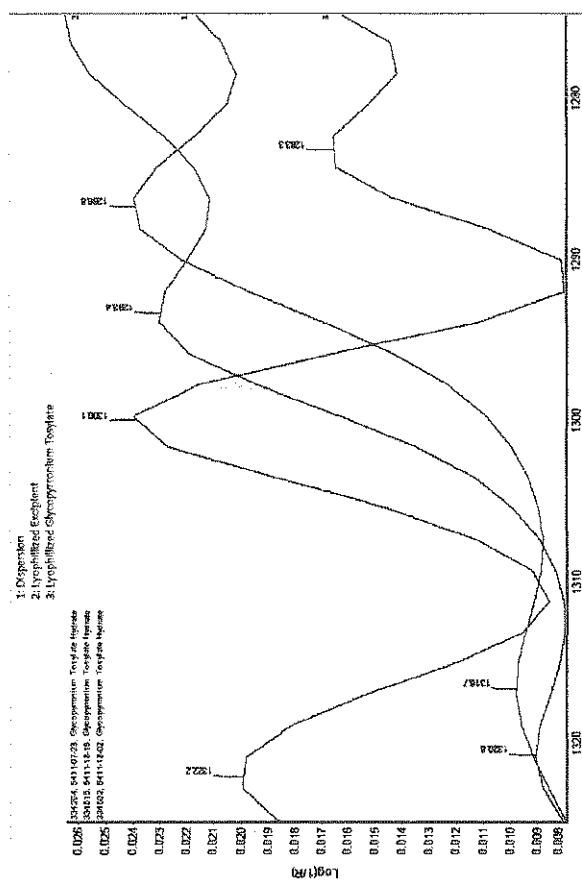


FIG. 36b

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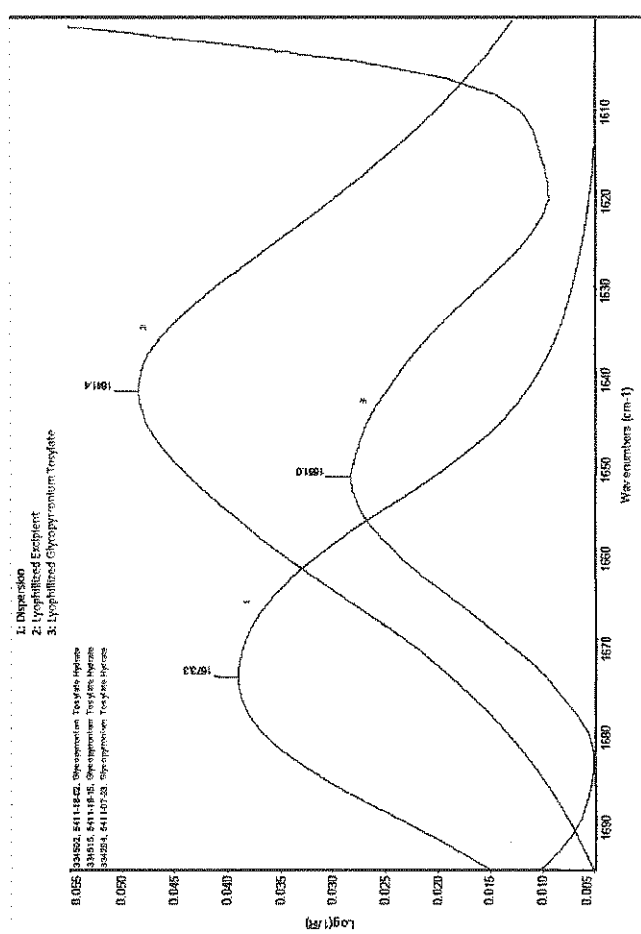


FIG. 36C

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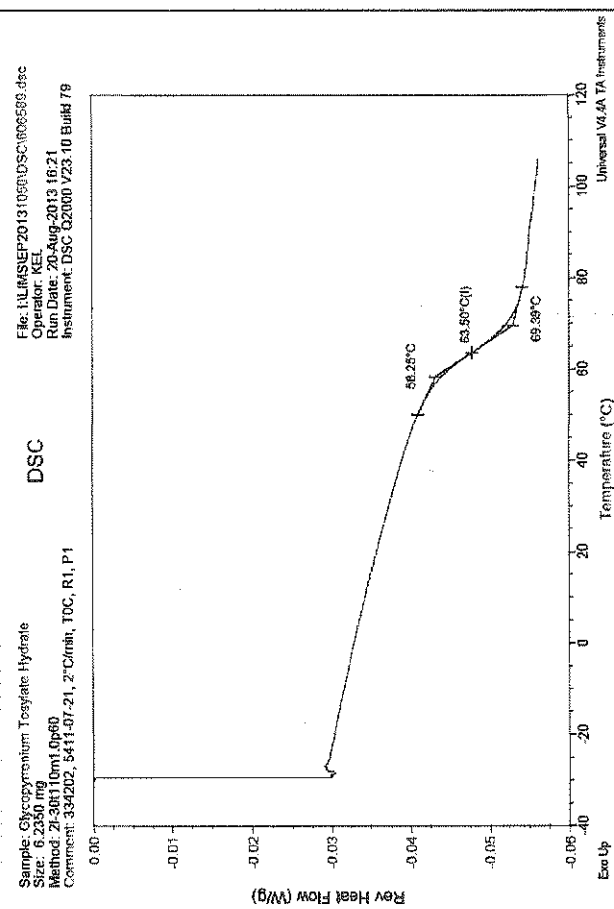


FIG. 37