Detectione Interaction acidic drugs and amino acid

done by
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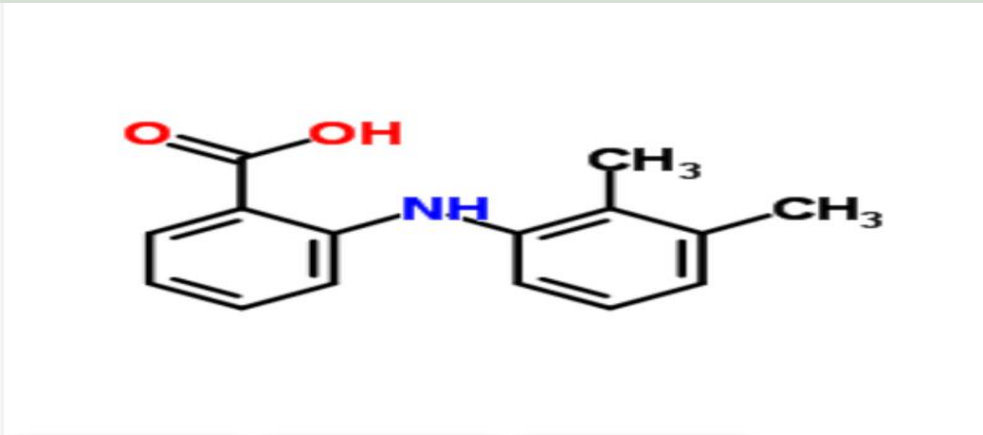
INTRODUCTION

- PONSTAN:
- Ponstan or what is so called mefenamic acid is a member of anthranilic acid derivatives (or fenamate) its name derives from its systematic name dimethylphenylaminobenzoic acid. It was discovered and brought to the market by Parke Davis in the 1960s . It became generic in the 1980s and available worldwide under many brand name including Ponstan . It's a class of NSAIDS and is used to treat mild to moderate pain.

INTRODUCTION cont.

- It's a solid white to off _ white crystalline powder ,it is soluble in acetone , chloroform , dichloromethane , methanol , but insoluble in water .
- Melting point=230_231 c
- Molecular Weight=241.29 g/mol
- Molecular formula=C15H15No2

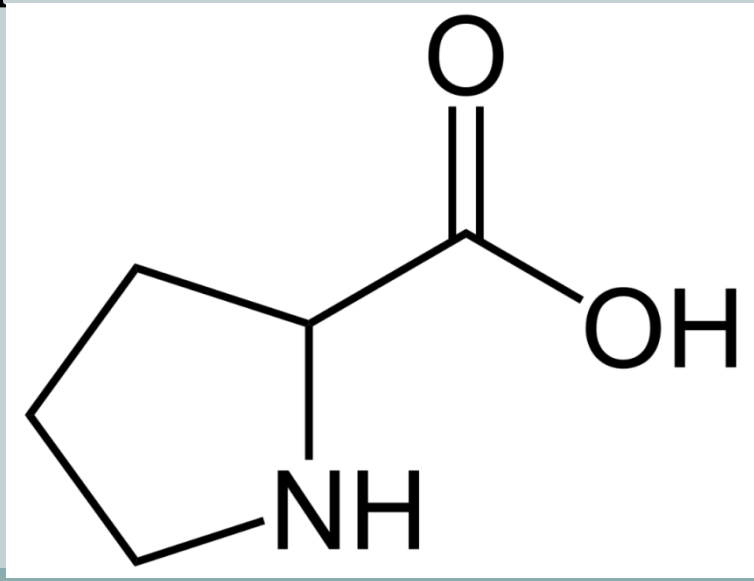


INTRODUCTION:

- PROLINE:
- Proline is formally not an amino acid , but an imino acid. Nonetheless , it is called an amino acid. The primary amine on the α carbon of glutamate semialdehyde forms a Schiff base with the aldehyde which is the reduced , yielding proline.
- When proline is in a peptide bond , it does not have a hydrogen on the α amino group , so it cannot donate a hydrogen bond to stabilize an α helix or a β sheet. It is often said , inaccurately , that proline cannot exist in a helix , the helix will have a slight bend due to the lack of the hydrogen bond .

INTRODUCTION:

- Proline is used to support joint and skin health , which is why we take L-proline supplements . It may also support muscle growth and injury recover .
- Melting point=205_228 c
- Molecular weight=115.13 g/mol
- Molecular formula=C5H9NO2



THE ACTION

1- take 0.1728g of proline and dissolve it in 50ml of methanol with heating then calculate the molarity :

$M=wt/m.wt \times 1000/50$

$M=0.03M$

After dilution:

$M1 \times V1=M2 \times V2$

$0.03 \times 2=M2 \times 50$

$M2=0.0012M$

2- take 0.2160g of mefenamic acid and dissolve it in 50ml of methanol with heating and calculate the molarity :

$M=wt/M.wt \times 1000/50$

$M=0.2160/241.284 \times 1000/50$

$M=0.0179M$

THE ACTION :

And after dilution:

$M_1 \times V_1 = M_2 \times V_2$

$0.0179 \times 2 = M_2 \times 50$

$M_2 = 0.000719M$

THE ACTION:

- We take a very small amount of proline and to which we add kBr which is a salt that is added for dilution then we grind the mixture then we put the sample (after converting it into tablet) within the IR Affinity device to measure the sample(proline only) then we repeat the process with adding ponstan to see how the waves changes after addition ponstan .
- Note: we used KBr salt because it is not absorbed within the IR .

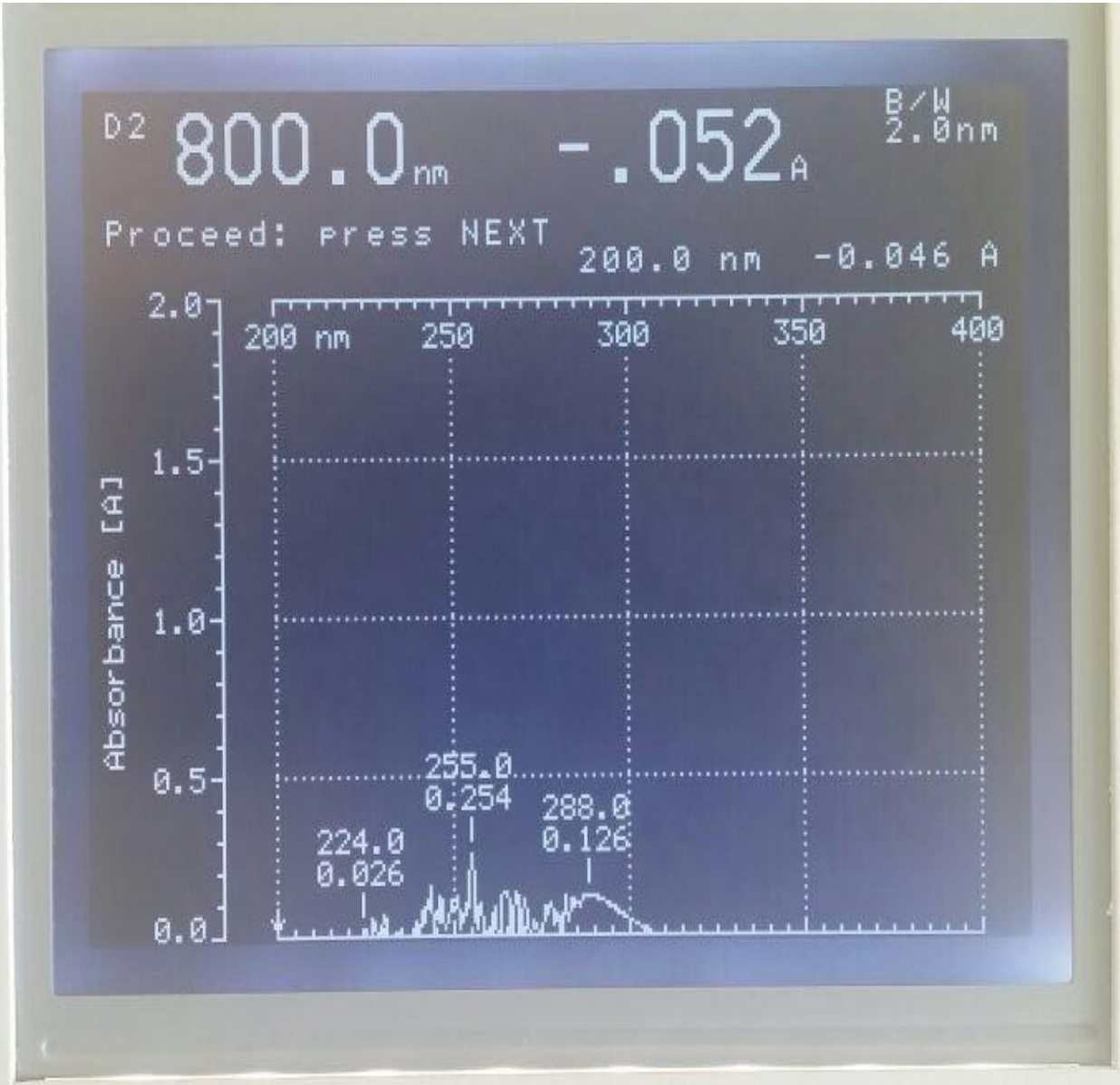
DISCUSSION

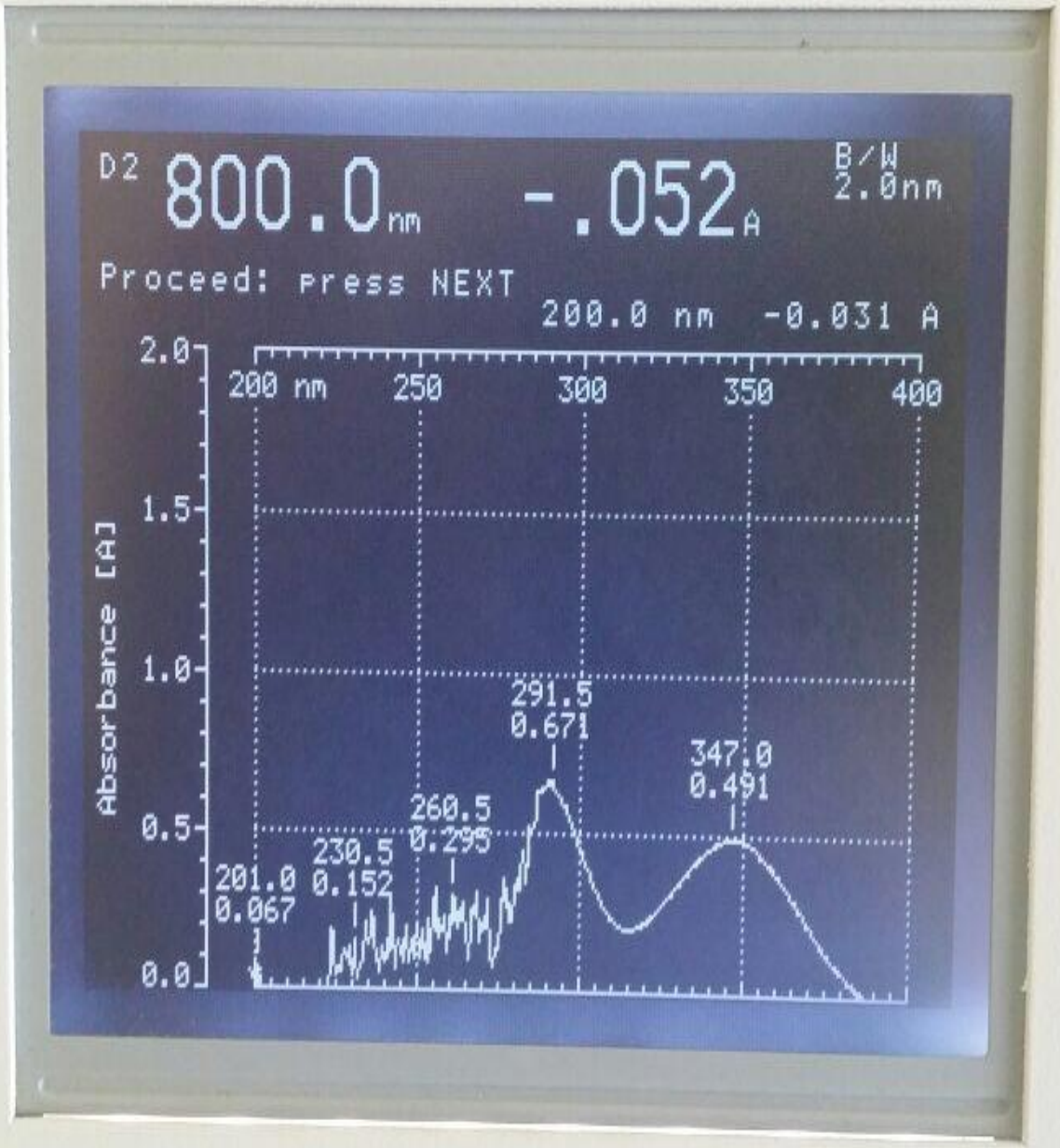
1-we add 1ml of 0.00012M of proline in a sample of spectrophotometer then wd add the solvent (methanol) to the cuvette blank , through the diagram the absorbance of proline when measured in the spectrophotometer is 0.026 at a the wave length 224nm , 0.254 at the peak wave length 288nm , therefore the peak wave for proline at the absorbance 0.254 is 255nm .

2-

DISCUSSION cont.

- 3- when we added 25ml of 0.000716M of mefenamic acid to proline and measured the absorbance we noticed an increase in the absorbance , we used the spectrophotometer in this semester for a several times to quantify the absorbance present , so we continued the addition of mefenamic acid for nine times and we also noticed an increase in the absorbance at every addition .
- 4- the wave length also becomes longer at every addition of the drug to the proline .


D2 800.0nm -.052A
B/W
2.0nm
Proceed: press NEXT
200.0 nm -0.046 A
2.0
1.5
1.0
0.5
0.0
Absorbance [A]
200 nm
250
300
350
400
255.0
0.254
288.0
0.126
224.0
0.026


D2 800.0nm -.052A
B/W
2.0nm
Proceed: press NEXT
200.0 nm -0.031 A
Absorbance [A]
2.0
1.5
1.0
0.5
0.0
200 nm
250
300
350
400
291.5
0.671
347.0
0.491
260.5
0.295
230.5
0.152
201.0
0.067

DRUG INTERACTION:

- Drug interaction may change how the medication work where it can be a synergistic effect or antagonistic effect or a new effect can be produced that neither produced on its on , it can increases the risk of a serious side effect .
- Some product that may interact with this drug include : aliskiren , ACE inhibitors (such as captopril , lisinopril) , angiotensin II receptor blockers (such as valsartan , losartan) , cidofovir , corticosteroids (e.g. prednisone) , fluconazole , ketorolac , lithium , methotrexate , diuretics such as furosemide .

DRUG INTERACTION:

- This medication may increase the risk of bleeding when taken with other drug that also causes bleeding . Example include anti-platelet drug such as clopidogrel , blood thinners such as dabigatran enoxaparin , warfarin , among others .

References Edit

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- ^ "Proline". Archived from the original on 2015-11-27.
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