



Pharmaceutical Analytical Chemistry I

الأستاذ الدكتور جمعة الزهوري (دكتوراه صيدلة-ألمانيا 1991)

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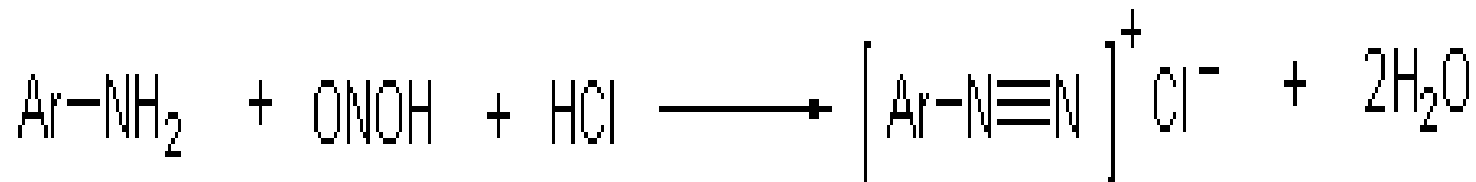
Diazometric Titration of drugs

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Diazometric titration of drugs

Principle :

Primary amine drugs react with Nitrous acid in cold to give diazonium salt according to the following reaction :



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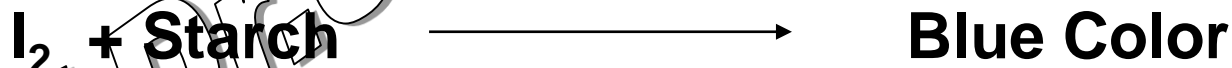
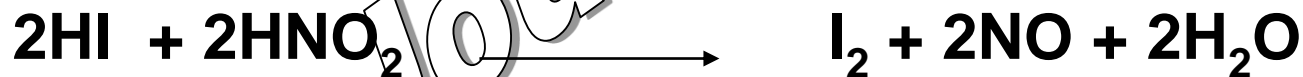
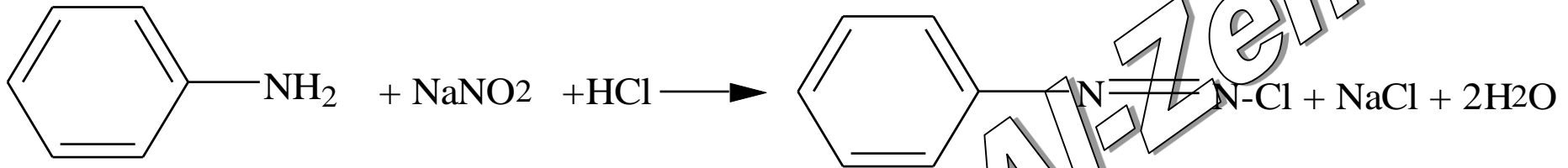
Diazometric titration of drugs

- ***Practical Application :***

In this titration we used Sodium nitrite as primary standard solution after standardization with sulphanic acid ($\text{H}_3\text{NO}_3\text{S}$) and [Starch-KI paste] as indicator to get blue color according to the following reactions.

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Diazometric titration of drugs



تتم المعايرة بإضافة نتريت الصوديوم حتى تمام التفاعل وأول قطرة زائدة من نتريت الصوديوم
حمض الأزوتي (يؤكسد اليودور ليود فيتلون النشاء

Diazometric
titration of drugs

Pharmaceutical

Application

I- Row Material

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Diazometric titration of drugs

Benzocain	0.1 NaNO ₂	0.01652
Dopsone	0.1 NaNO ₂	0.01242
Procainamide,HCl	0.1 NaNO ₂	0.02718
Procaine,HCl	0.1 NaNO ₂	0.02728
Sulphaacetamide Sodium	0.1 NaNO ₂	0.02362
Sulphadiazine	0.1 NaNO ₂	0.025033
Sulphadimidine	0.1 NaNO ₂	0.02783
Sulphamethoxypyridazine	0.1 NaNO ₂	0.02803
Sulphapyridine	0.1 NaNO ₂	0.02493
Sulphadimidine sodium	0.1 NaNO ₂	0.03003
Sulphamethizole	0.1 NaNO ₂	0.02703
Sulphamethoxine	0.1 NaNO ₂	0.03103
Sulphamethoxypyridazine	0.1 NaNO ₂	0.02803
Sulphapyridine	0.1 NaNO ₂	0.02493

Diazometric
titration of drugs

Pharmaceutical

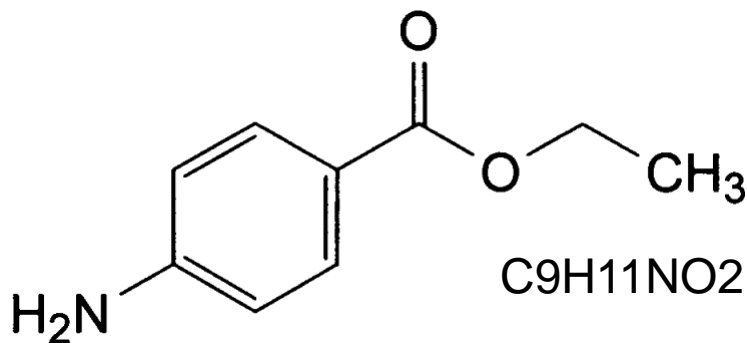
Application

II- Dosage Form

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Chloramphenicol Capsules	0.1 NaNO ₂	0.0327
Co-Trimoxazole (i.v) infusion	0.1 NaNO ₂	0.02533
Dopsone,Tablets	0.1 NaNO ₂	0.01242
Paracetamol Tablets	0.1 NaNO ₂	0.01510
Paediatric Sulphacetamid,Oral	0.1 NaNO ₂	0.02783
Procainamid injection	0.1 NaNO ₂	0.02718
Sulphacetamide,Eye drops	0.1 NaNO ₂	0.02542
Sulphacetamid,Eye Ointiment	0.1 NaNO ₂	0.02542
Sulphadiazine injection	0.1 NaNO ₂	0.02503
Sulphadimidine injection	0.1 NaNO ₂	0.03003
Sulphadimethoxine Tablets	0.1 NaNO ₂	0.03103
Sulphadimidine Tablets	0.1 NaNO ₂	0.02783
Sulphaquanidine ,Tablets	0.1 NaNO ₂	0.0214
Sulphamethizole,Tablets	0.1 NaNO ₂	0.02703
Sulphamethoxy Pyridazine,Tablets	0.1 NaNO ₂	0.02803
Sulphapyridine Tablets	0.1 NaNO ₂	0.02493
Sulphathiazole Tablets	0.1 NaNO ₂	0.02553

Benzocaine



C₉H₁₁NO₂

165.2

Action and use

Local anaesthetic.

ASSAY

Dissolve 0.400 g in a mixture of 25 ml of *hydrochloric acid R* and 50 ml of *water R*. Carry out the determination of primary aromatic amino-nitrogen (2.5.8).

1 ml of 0.1 M *sodium nitrite* is equivalent to 16.52 mg of C₉H₁₁NO₂.

Mercurimetric

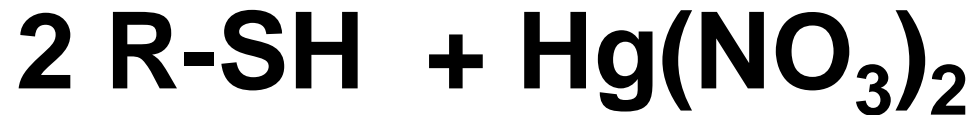
Titration of drugs

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Principle :

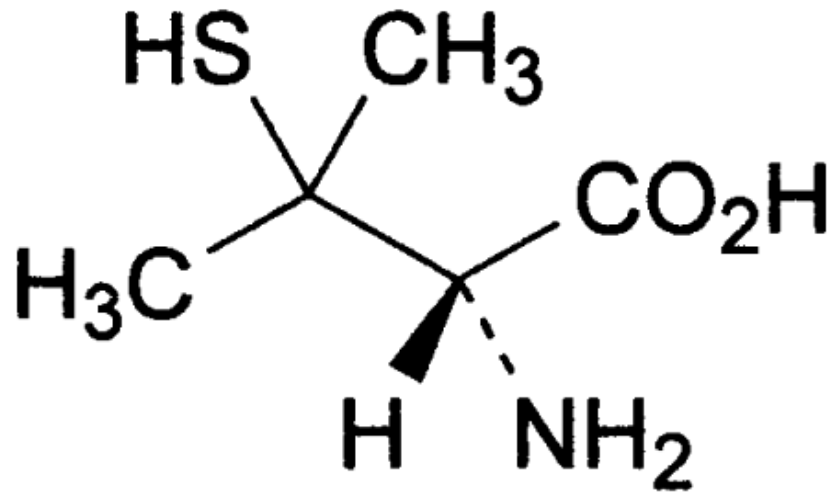
- Mercury (Hg) has the ability to complex two –SH group .
- All drugs which including Sulphadryl compounds react quantitative with Mercuric salts.
- Mercury II nitrate used in Pharmacopia as standard solution which reacted with the sulphadryl drugs according to the following reaction :

Mercurimetric
titration of drugs



- **Diphenylthiocarbazone (dithizone)**
used as indicator

Penicillamine



Action and use

Used in treatment of rheumatoid arthritis and in treatment of lead poisoning.

Penicillamine Tablets

BP2007

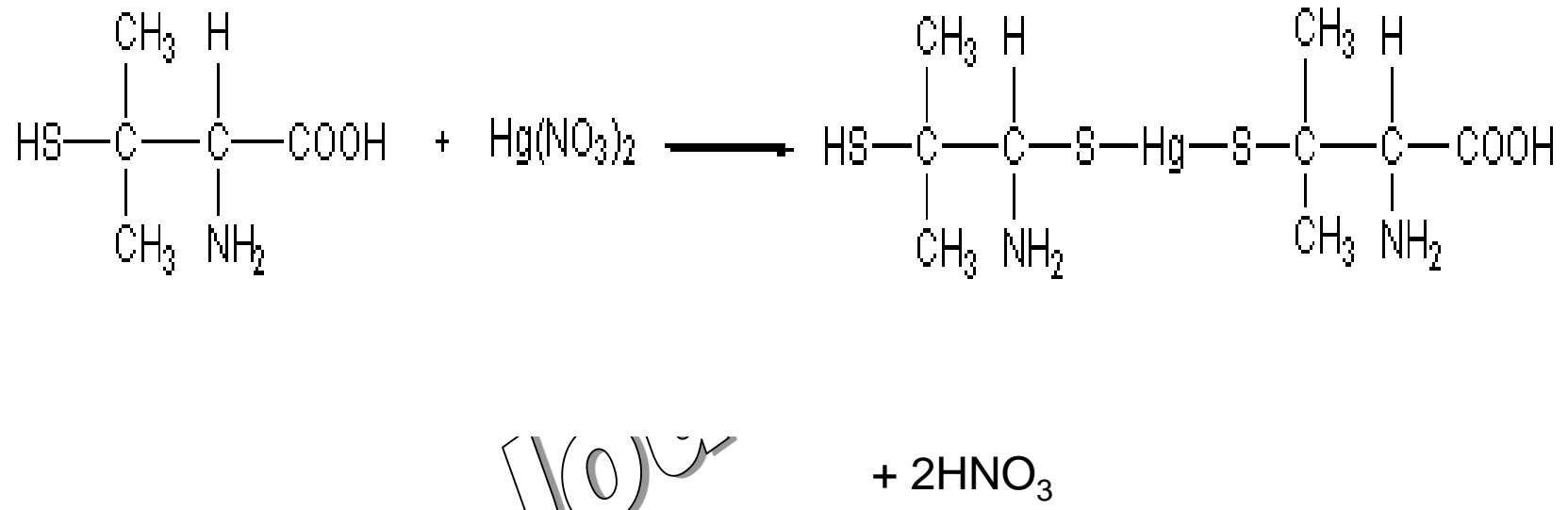
Content of penicillamine, $C_5H_{11}NO_2S$

95.0 to 105.0% of the stated amount.

ASSAY

Weigh and powder 20 tablets. Dissolve a quantity of the powder containing 0.1 g of Penicillamine as completely as possible in 50 ml of water and filter. Add to the filtrate 5 ml of 1M sodium hydroxide and 0.2 ml of a 0.1% w/v solution of dithizone in ethanol (96%) and titrate with 0.02M mercury(II) nitrate VS. Each ml of 0.02M mercury(II) nitrate VS is equivalent to 5.968 mg of $C_5H_{11}NO_2S$.

hourri



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anti

Amoxycilline trihydrate	0.02 M Hg(NO ₃) ₂	0.007308
Ampicillin trihydrate	0.02 M Hg(NO ₃) ₂	0.006988
Benzathine Penicillin	0.02 M Hg(NO ₃) ₂	0.00909
Benzympenicillin Potassium	0.02 M Hg(NO ₃) ₂	0.00745
Benzyll Penicelline	0.02 M Hg(NO ₃) ₂	0.007128
Penicillamine	0.02 M Hg(NO ₃) ₂	0.00596
Procaine Penicellen	0.02 M Hg(NO ₃) ₂	0.01141

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Zehouri

Penicillamine, Tablets & Capsules	0.02 M Hg(NO ₃) ₂	0.05968
Propylthiouracil Tablets	0.02 M Hg(NO ₃) ₂	0.006808

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Thank you

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Q&A