UNIVERSITÀ DEGLI STUDI DI TORINO

ESAME DI STATO PER L'ABILITAZIONE DELLA PROFESSIONE DI FARMACISTA

SECONDA SESSIONE 2014

PROVA SCRITTA

TEMA N. 1

Le principali forme farmaceutiche per uso pediatrico: tipologie, requisiti, caratteristiche

TEMA N. 2

Varie modalità di dispensazione di medicinali in caso di urgenza

TEMA N. 3

Farmaci ipolipidemizzanti: razionale d'uso, meccanismo d'azione, farmacocinetica, effetti avversi e interazioni

PROVA PRATICA

Prova n.1

Dosamento del farmaco

Ad ogni candidato è stato fornito il risultato sperimentale di una prova di dosamento di un farmaco effettuata attraverso titolazione volumetrica. E' stato quindi posto un problema di calcolo stechiometrico costituito da tre quesiti

ESAME DI STATO PER L'ABILITAZIONE ALL'ESERCIZIO DELLA PROFESSIONE DI FARMACISTA

II sessione anno 2014

Una confezione contiene 28 capsule gastroresistenti di omeprazolo. Il contenuto di tutte le compresse è stato polverizzato e dopo pesatura è risultato essere pari a 5,614 g.

La polvere, contenente principio attivo ed eccipienti inerti, è stata sciolta in un matraccio e portata a volume con 250,0 mL di H_2O distillata ottenendo la soluzione A.

25,00 mL della soluzione A sono stati prelevati e titolati secondo Ph. Eur. 8. La titolazione ha richiesto 3,120 mL di NaOH 0,1000 M.

Si calcoli:

a) Il contenuto medio di omeprazolo per ogni capsula espresso in mg

b) La concentrazione in omeprazolo della sol. A espressa come % p/V.

c) Ogni capsula dovrebbe contenere 40,00 mg di principio attivo con una variabilità nel titolo di principio attivo del 4,5 %. Si identifichi l'intervallo di peso del principio attivo (espresso in mg) che può essere contenuto nella compressa perché questa sia considerata conforme alle specifiche.

Nome _____

Cognome _____

Risposte ai quesiti:

a) _____

b) _____

c) _____

N.B. Insieme alla prova al candidato viene fornita copia della monografia ufficiale di Ph. Eur. 8 dell'omeprazolo.

Prova n.2

Riconoscimento del farmaco

Ad ogni farmaco è stato fornito il profilo sperimentale e due possibili soluzioni (monografie di due farmaci iscritti nella Farmacopea Europea).

Al candidato è stato chiesto di:

- individuare il farmaco meglio rispondente al profilo fornito;
- motivare brevemente la propria scelta;
- proporre un'ulteriore prova sperimentale a conferma della propria scelta.

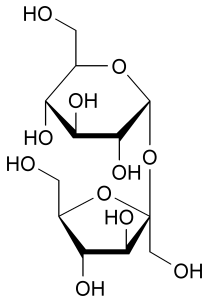
Esame di Stato per l' abilitazione alla Professione di Farmacista - Università di Torino

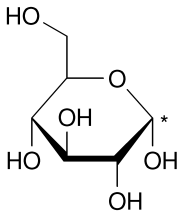
II Sessione 2014

Riconoscimento del Farmaco: **primo riconoscimento**

Il Farmaco in esame si presenta come una polvere bianca e mostra una buona solubilità acquosa (50 mg di composto si dissolvono completamente in 0.050 mL di acqua). La solubilità non sembra discostarsi sensibilmente da tale valore quando viene rilevata in 0,5 M HCl o 0,5 M NaOH. Al contrario, il Farmaco risulta meno solubile in alcool etilico (circa 10 mL/50 mg) ed insolubile in etere dietilico. In termini di reattività, il Farmaco risulta in generale sensibile ad ossidanti forti (per es: $KMnO_4$, $K_2Cr_2O_7$). Se una soluzione basica calda del composto viene acidificata e quindi trattata con soluzioni di Ag(I) o Rame (II) si osserva positività del saggio con formazione di un precipitato scuro nel primo caso e di viraggio al rosso nel secondo.

Nel gruppo di Farmaci a vostra disposizione avete selezionato quali candidati il ***Saccarosio*** e il Glucosio quali possibili candidati.





1) Indicare quale fra i due Farmaci risponde meglio al profilo sperimentale fornito, giustificando brevemente i criteri che hanno governato la selezione.
2) Quale passo successivo, proporre alcune ulteriori analisi/test che potrebbero meglio validare la scelta effettuata nel primo punto.

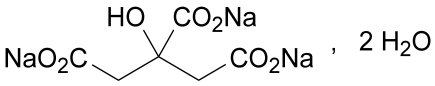
Esame di Stato per l' abilitazione alla Professione di Farmacista - Università di Torino

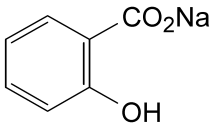
II Sessione 2014

Riconoscimento del Farmaco: **secondo riconoscimento**

Il Farmaco in esame si presenta come una polvere bianca con una buona solubilità acquosa (50 mg di composto si dissolvono completamente in meno di 0,20 mL di acqua). Tale solubilità sembra essere ritenuta quando viene rilevata in 0,5 M NaOH mentre risulta notevolmente inferiore se rilevata in 0,5 M HCl. In termini di reattività, il Farmaco risulta in generale insensibile ad ossidanti forti (per es: $KMnO_4$, $K_2Cr_2O_7$) mentre al contrario sembra sensibile alla presenza di metalli di transizione quali Fe(III).

Nel gruppo di Farmaci a vostra disposizione avete selezionato quali candidati il *Sodio Citrato* e il *Sodio Benzoato* quali possibili candidati.





1) Indicare quale fra i due Farmaci risponde meglio al profilo sperimentale fornito, giustificando brevemente i criteri che hanno governato la selezione.
2) Quale passo successivo, proporre alcune ulteriori analisi/test che potrebbero meglio validare la scelta effettuata nel primo punto.

Esame di Stato per l' abilitazione alla Professione di Farmacista - Università di Torino

II Sessione 2014

Cupri-tartaric solution. *1023300.*

Solution I. Dissolve 34.6 g of *copper sulphate R* in *water R* and dilute to 500 ml with the same solvent.

Solution II. Dissolve 173 g of *sodium potassium tartrate R* and 50 g of *sodium hydroxide R* in 400 ml of *water R*. Heat to boiling, allow to cool and dilute to 500 ml with *carbon dioxide-free water R*.

Mix equal volumes of the 2 solutions immediately before use.

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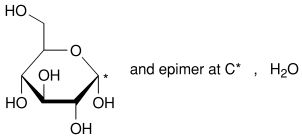
GLUCOSE MONOHYDRATE

Glucosum monohydricum



$C_6H_{12}O_6,H_2O$ M_r 198.2

DEFINITION

Glucose monohydrate is the monohydrate of (+)-D-glucopyranose.

CHARACTERS

A white, crystalline powder, with a sweet taste, freely soluble in water, sparingly soluble in alcohol.

IDENTIFICATION

A. Specific optical rotation (see Tests): + 52.5 to + 53.3.

B. Examine by thin-layer chromatography (*2.2.27*), using *silica gel G R* as the coating substance.

Test solution. Dissolve 10 mg of the substance to be examined in a mixture of 2 volumes of *water R* and 3 volumes of *methanol R* and dilute to 20 ml with the same mixture of solvents.

Reference solution (a). Dissolve 10 mg of *glucose CRS* in a mixture of 2 volumes of *water R* and 3 volumes of *methanol R* and dilute to 20 ml with the same mixture of solvents.

Reference solution (b). Dissolve 10 mg each of *fructose CRS*, *glucose CRS*, *lactose CRS* and *sucrose CRS* in a mixture of 2 volumes of *water R* and 3 volumes of *methanol R* and dilute to 20 ml with the same mixture of solvents.

Apply separately to the plate 2 µl of each solution and thoroughly dry the starting points. Develop over a path of 15 cm using a mixture of 10 volumes of *water R*, 15 volumes of *methanol R*, 25 volumes of *anhydrous acetic acid R* and 50 volumes of *ethylene chloride R*. The solvents should be measured accurately since a slight excess of water produces cloudiness. Dry the plate in a current of warm air. Repeat the development immediately, after renewing the mobile phase. Dry the plate in a current of warm air and spray evenly with a solution of 0.5 g of *thymol R* in a mixture of 5 ml of *sulphuric acid R* and 95 ml of *alcohol R*. Heat at 130 °C for 10 min. The principal spot in the chromatogram obtained with the test solution is similar in position, colour and size to the principal spot in the chromatogram obtained with reference solution (a). The test is not valid unless the chromatogram obtained with reference solution (b) shows 4 clearly separated spots.

C. Dissolve 0.1 g in 10 ml of *water R*. Add 3 ml of *cupri-tartaric solution R* and heat. A red precipitate is formed.

TESTS

Solution S. Dissolve 10.0 g in *distilled water R* and dilute to 100 ml with the same solvent.

Appearance of solution. Dissolve 10.0 g in 15 ml of *water R*. The solution is clear (*2.2.1*), odourless, and not more intensely coloured than reference solution BY_7 (*2.2.2, Method II*).

Acidity or alkalinity. Dissolve 6.0 g in 25 ml of *carbon dioxide-free water R* and add 0.3 ml of *phenolphthalein solution R*. The solution is colourless. Not more than 0.15 ml of *0.1 M sodium hydroxide* is required to change the colour of the indicator to pink.

Specific optical rotation (*2.2.7*). Dissolve 10.0 g in 80 ml of *water R*, add 0.2 ml of *dilute ammonia R1*, allow to stand for 30 min and dilute to 100.0 ml with *water R*. The specific optical rotation is + 52.5 to + 53.3, calculated with reference to the anhydrous substance.

Foreign sugars, soluble starch, dextrins. Dissolve 1.0 g by boiling in 30 ml of *alcohol (90 per cent V/V) R*. Cool; the appearance of the solution shows no change.

Sulphites. Dissolve 5.0 g in 40 ml of *water R*, add 2.0 ml of *0.1 M sodium hydroxide* and dilute to 50.0 ml with *water R*. To 10.0 ml of the solution, add 1 ml of a 310 g/l solution of *hydrochloric acid R*, 2.0 ml of *decolorised fuchsin solution R1* and 2.0 ml of a 0.5 per cent *V/V* solution of *formaldehyde R*. Allow to stand for 30 min and measure the absorbance (*2.2.25*) at the maximum at 583 nm. Prepare a standard as follows. Dissolve 76 mg of *sodium metabisulphite R* in *water R* and dilute to 50.0 ml with the same solvent. Dilute 5.0 ml of this solution to 100.0 ml with *water R*. To 3.0 ml of this solution add 4.0 ml of *0.1 M sodium hydroxide* and dilute to 100.0 ml with *water R*. Immediately add to 10.0 ml of this solution 1 ml of a 310 g/l solution of *hydrochloric acid R*, 2.0 ml of *decolorised fuchsin solution R1* and 2.0 ml of a 0.5 per cent *V/V* solution of *formaldehyde R*. Allow to stand for 30 min and measure the absorbance at the maximum at 583 nm. Use as compensation liquid for both measurements a solution prepared in the same manner using 10.0 ml of *water R*. The absorbance of the test solution is not greater than that of the standard (15 ppm of SO_2).

Chlorides (*2.4.4*). 4 ml of solution S diluted to 15 ml with *water R* complies with the limit test for chlorides (125 ppm).

Sulphates (*2.4.13*). 7.5 ml of solution S diluted to 15 ml with *distilled water R* complies with the limit test for sulphates (200 ppm).

Arsenic (*2.4.2*). 1.0 g complies with limit test A for arsenic (1 ppm).

Barium. To 10 ml of solution S add 1 ml of *dilute sulphuric acid R*. When examined immediately and after 1 h, any opalescence in the solution is not more intense than that in a mixture of 1 ml of *distilled water R* and 10 ml of solution S.

Calcium (*2.4.3*). 5 ml of solution S diluted to 15 ml with *distilled water R* complies with the limit test for calcium (200 ppm).

Lead in sugars (*2.4.10*). It complies with the limit test for lead in sugars (0.5 ppm).

Water (*2.5.12*). 7.0 per cent to 9.5 per cent, determined on 0.50 g by the semi-micro determination of water.

Sulphated ash (*2.4.14*). Not more than 0.1 per cent. Dissolve 5.0 g in 5 ml of *water R*, add 2 ml of *sulphuric acid R*, evaporate to dryness on a water-bath and ignite to constant mass. If necessary, repeat the heating with *sulphuric acid R*.

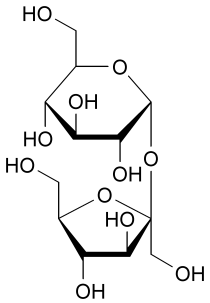
Pyrogens (*2.6.8*). If intended for use in large-volume preparations for parenteral use, the competent authority may require that it comply with the test for pyrogens carried out as follows. Inject per kilogram of the rabbit's mass 10 ml of a solution containing 55 mg per millilitre of the substance to be examined in *water for injections R*.

LABELLING

The label states where applicable, that the substance is apyrogenic.

SUCROSE

Saccharum



$C_{12}H_{22}O_{11}$ M_r 342.3

DEFINITION

Sucrose is β-D-fructofuranosyl α-D-glucopyranoside. It contains no additives.

CHARACTERS

A white, crystalline powder or lustrous, dry, colourless or white crystals, very soluble in water, slightly soluble in alcohol, practically insoluble in ethanol.

IDENTIFICATION

First identification: A.

Second identification: B, C.

A. Examine by infrared absorption spectrophotometry (*2.2.24*), comparing with the spectrum obtained with *sucrose CRS*.

B. Examine by thin-layer chromatography (*2.2.27*), using *silica gel G R* as the coating substance.

Test solution. Dissolve 10 mg of the substance to be examined in a mixture of 2 volumes of *water R* and 3 volumes of *methanol R* and dilute to 20 ml with the same mixture of solvents.

Reference solution (a). Dissolve 10 mg of *sucrose CRS* in a mixture of 2 volumes of *water R* and 3 volumes of *methanol R* and dilute to 20 ml with the same mixture of solvents.

Reference solution (b). Dissolve 10 mg each of *fructose CRS*, *glucose CRS*, *lactose CRS* and *sucrose CRS* in a mixture of 2 volumes of *water R* and 3 volumes of *methanol R* and dilute to 20 ml with the same mixture of solvents.

Apply separately to the plate 2 µl of each solution and thoroughly dry the starting points. Develop over a path of 15 cm using a mixture of 10 volumes of *water R*, 15 volumes of *methanol R*, 25 volumes of *anhydrous acetic acid R* and 50 volumes of *ethylene chloride R*, measured accurately as a slight excess of water causes cloudiness of the solution. Dry the plate in a current of warm air. Repeat the development immediately, after renewing the mobile phase. Dry the plate in a current of warm air and spray evenly with a solution of 0.5 g of *thymol R* in a mixture of 5 ml of *sulphuric acid R* and 95 ml of *alcohol R*. Heat at 130 °C for 10 min. The principal spot in the chromatogram obtained with the test solution is similar in position, colour and size to the principal spot in the chromatogram obtained with reference solution (a). The test is not valid unless the chromatogram obtained with reference solution (b) shows four clearly separated spots.

C. Dilute 1 ml of solution S (see Tests) to 100 ml with *water R*. To 5 ml of the solution add 0.15 ml of freshly prepared *copper sulphate solution R* and 2 ml of freshly prepared *dilute sodium hydroxide solution R*. The solution is blue and clear and remains so after boiling. To the hot solution add 4 ml of *dilute hydrochloric acid R* and boil for 1 min. Add 4 ml of *dilute sodium hydroxide solution R*. An orange precipitate is formed immediately.

TESTS

Solution S. Dissolve 50.0 g in *carbon dioxide-free water R* prepared from *distilled water R* and dilute to 100 ml with the same solvent.

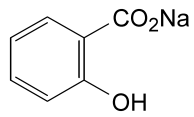
Appearance of solution. Solution S is clear (*2.2.1*) and not more intensely coloured than reference solution Y_6 (*2.2.2, Method II*).

Acidity or alkalinity. To 10 ml of solution S add 0.3 ml of *phenolphthalein solution R*. The solution is colourless. Not more than 0.3 ml of *0.01 M sodium hydroxide* is required to change the colour of the indicator to pink.

Specific optical rotation (*2.2.7*). Dissolve 26.0 g in *water R* and dilute to 100.0 ml with the same solvent. The specific optical rotation is + 66.3 to + 67.0.

SODIUM SALICYLATE

Natrii salicylas



$C_7H_5NaO_3$ M_r 160.1

DEFINITION

Sodium salicylate contains not less than 99.0 per cent and not more than the equivalent of 101.0 per cent of sodium 2-hydroxybenzenecarboxylate, calculated with reference to the dried substance.

CHARACTERS

A white, crystalline powder or small, colourless crystals or shiny flakes, freely soluble in water, sparingly soluble in alcohol.

IDENTIFICATION

First identification: A, C.

Second identification: B, C.

A. Examine by infrared absorption spectrophotometry (*2.2.24*), comparing with the spectrum obtained with *sodium salicylate CRS*.

B. Solution S (see Tests) gives the reactions of salicylates (*2.3.1*).

C. It gives reaction (b) of sodium (*2.3.1*).

TESTS

Solution S. Dissolve 5.0 g in *carbon dioxide-free water R* prepared from *distilled water R* and dilute to 50 ml with the same solvent.

Appearance of solution. Solution S is clear (*2.2.1*) and not more intensely coloured than reference solution BY_6 (*2.2.2, Method II*).

Acidity. To 20 ml of solution S add 0.1 ml of *phenol red solution R*. The solution is yellow. Not more than 2.0 ml of *0.01 M sodium hydroxide* is required to change the colour of the indicator to reddish-violet.

Chlorides (*2.4.4*). To 5 ml of solution S add 5 ml of *water R* and 10 ml of *dilute nitric acid R* and filter. 10 ml of the filtrate diluted to 15 ml with *water R* complies with the limit test for chlorides (200 ppm).

Sulphates (*2.4.13*). 2.5 ml of solution S diluted to 15 ml with *distilled water R* complies with the limit test for sulphates (600 ppm).

Heavy metals (*2.4.8*). Dissolve 1.6 g in 16 ml of a mixture of 5 volumes of *water R* and 10 volumes of *alcohol R*. 12 ml of the solution complies with limit test B for heavy metals (20 ppm). Prepare the standard using lead standard solution (2 ppm Pb) prepared by diluting *lead standard solution (100 ppm Pb) R* with a mixture of 5 volumes of *water R* and 10 volumes of *alcohol R*.

Loss on drying (*2.2.32*). Not more than 0.5 per cent, determined on 1.00 g by drying in an oven at 100 °C to 105 °C.

ASSAY

Dissolve 0.130 g in 30 ml of *anhydrous acetic acid R*. Titrate with *0.1 M perchloric acid,* determining the end-point potentiometrically (*2.2.20*).

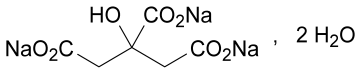
1 ml of *0.1 M perchloric acid* is equivalent to 16.01 mg of $C_7H_5NaO_3$.

STORAGE

Store in an airtight container, protected from light.

SODIUM CITRATE

Natrii citras



$C_6H_5Na_3O_7,2H_2O$ M_r 294.1

DEFINITION

Sodium citrate contains not less than 99.0 per cent and not more than the equivalent of 101.0 per cent of trisodium 2-hydroxypropane-1,2,3-tricarboxylate, calculated with reference to the anhydrous substance.

CHARACTERS

A white, crystalline powder or white, granular crystals, slightly deliquescent in moist air, freely soluble in water, practically insoluble in alcohol.

IDENTIFICATION

A. To 1 ml of solution S (see Tests) add 4 ml of *water R*. The solution gives the reaction of citrates (*2.3.1*).

B. 1 ml of solution S gives reaction (a) of sodium (*2.3.1*).

TESTS

Solution S. Dissolve 10.0 g in *carbon dioxide-free water R* prepared from *distilled water R* and dilute to 100 ml with the same solvent.

Appearance of solution. Solution S is clear (*2.2.1*) and colourless (*2.2.2, Method II*).

Acidity or alkalinity. To 10 ml of solution S add 0.1 ml of *phenolphthalein solution R*. Not more than 0.2 ml of *0.1 M hydrochloric acid* or *0.1 M sodium hydroxide* is required to change the colour of the indicator.

Readily carbonisable substances. To 0.20 g of the powdered substance to be examined add 10 ml of *sulphuric acid R* and heat in a water-bath at 90 ± 1 °C for 60 min. Cool rapidly. The solution is not more intensely coloured than reference solution Y_2 or GY_2 (*2.2.2, Method II*).

Chlorides (*2.4.4*). Dilute 10 ml of solution S to 15 ml with *water R*. The solution complies with the limit test for chlorides (50 ppm).

Oxalates. Dissolve 0.50 g in 4 ml of *water R*, add 3 ml of *hydrochloric acid R* and 1 g of granulated *zinc R* and heat on a water-bath for 1 min. Allow to stand for 2 min, decant the liquid into a test-tube containing 0.25 ml of a 10 g/l solution of *phenylhydrazine hydrochloride R* and heat to boiling. Cool rapidly, transfer to a graduated cylinder and add an equal volume of *hydrochloric acid R* and 0.25 ml of *potassium ferricyanide solution R*. Shake and allow to stand for 30 min. Any pink colour in the solution is not more intense than that in a standard prepared at the same time in the same manner using 4 ml of a 50 mg/l solution of *oxalic acid R* (300 ppm).

Sulphates (*2.4.13*). To 10 ml of solution S add 2 ml of *hydrochloric acid R1* and dilute to 15 ml with *distilled water R*. The solution complies with the limit test for sulphates (150 ppm).

Heavy metals (*2.4.8*). 12 ml of solution S complies with limit test A for heavy metals (10 ppm). Prepare the standard using *lead standard solution (1 ppm Pb) R*.

Water (*2.5.12*): 11.0 per cent to 13.0 per cent, determined on 0.300 g by the semi-micro determination of water. After adding the substance to be examined, stir for 15 min before titrating.

Pyrogens (*2.6.8*). If intended for use in large-volume preparations for parenteral use, the competent authority may require that it comply with the test for pyrogens. Inject per kilogram of the rabbit's mass 10 ml of a freshly prepared solution in *water for injections R* containing per millilitre 10.0 mg of the substance to be examined and 7.5 mg of pyrogen-free *calcium chloride R*.

ASSAY

Dissolve 0.150 g in 20 ml of *anhydrous acetic acid R*, heating to about 50 °C. Allow to cool. Using 0.25 ml of *naphtholbenzein solution R* as indicator, titrate with *0.1 M perchloric acid* until a green colour is obtained.

1 ml of *0.1 M perchloric acid* is equivalent to 8.602 mg of $C_6H_5Na_3O_7$.

STORAGE

Store in an airtight container.

Esame di Stato per l' abilitazione alla Professione di Farmacista - Università di Torino

II Sessione 2014

Descriptive term	Approximate volume of solvent (in millilitres for 50 mg of solute)			
Very soluble	less than	50 µl	///	///
Freely soluble	from	50 µl	to	500 µl
Soluble	from	500 µl	to	1.5 ml
Sparingly soluble	from	1.5 ml	to	5 ml
Slightly soluble	from	5 ml	to	50 ml
Very slightly soluble	from	50 ml	to	500 ml
Practically insoluble	more than			500 ml

Prova n.3

Spedizione della ricetta

Tariffazione, compilazione dell'etichetta e della scheda di preparazione di una formula magistrale di cui il candidato riceverà un fac-simile di ricetta. Compilazione di un breve questionario a risposta multipla inerente alla tipologia di ricetta, la sua spedibilità, le modalità di conservazione e gli eventuali obblighi di registrazione.

Dott. XXXXXXXXX

Via XXXXXXXXX
Torino
Tel. XXXXXXX

XXXXXXXXXXXXXX (anni 4)

Ambroxol cloridrato 300 mg
Metile *p*-idrossibenzoato 100 mg
Saccarosio sciroppo q.b. 100 g

Preparare 80 g

1 misurino (4 g) 3 volte al dì

Firma

Data

UTILIZZARE IL FOGLIO PROTOCOLLO A QUADRETTI **UNICAMENTE** PER I CALCOLI

Segue: **TABELLA N. 8**

Sostanza	Vie di somministrazione	Dosi abituali		Dosi massime	
		Per ogni dose grammi	Nelle 24 ore grammi	Per ogni dose grammi	Nelle 24 ore grammi
Alluminio ossido, idrato *	per os	–	–	0,200	10
Alofantrina idrocloruro	per os	–	–	0,5	2
Aloe	per os	0,10	0,20	0,20	0,30
Aloperidolo	per os o i.m. o e.v.	0,0005-0,005	0,001-0,015	–	0,10
Aloperidolo decanoato *	i.m. profonda	–	–	0,1	0,3
Alotano	inal.	In conc. 0,5-2% con ossigeno o protossido d'azoto			
Alprazolam	per os	0,00025-0,0005	0,00075-0,0015	–	0,004-0,001
Alprenololo benzoato	per os	0,06-0,12	0,24-1	–	–
Alprenololo cloridrato	per os	0,05-0,1	0,2-0,4	0,1-0,2	0,8
Alprostadil	e.v. continua intracavernosa	–	–	50×10^{-9}/kg/min 0,000060	100×10^{-9}/kg/min 0,000060
Alteplase per preparazione iniettabile *	e.v.	–	–	0,1	0,1
Amantadina cloridrato *	per os	0,1	0,2	0,2	0,4
Ambroxolo cloridrato	per os per os ped. scir. i.m. o e.v.	0,03-0,75 (rit.)● 0,00375-0,0075 0,015	0,09-1,5 (rit.)● 0,0075-0,015 0,03	0,06 0,0075 0,03	0,09 0,015 0,045
Amfepramone	per os per os rit.	0,025 0,075	0,075 0,075-0,15	0,05 0,075	0,15 0,15
Amfetamina solfato	per os i.m. o e.v.	0,0025 0,005	0,01 0,01	0,01 0,01	0,02 0,02
Amfotericina B *	e.v. i.t. per os top.	– – – –	– – – –	0,000250/kg 0,00025 0,2 3%	0,0015/kg 0,015 0,8
Amikacina *	i.m. e.v. lenta	–	–	0,015/kg 0,500	1,5 0,500
Amikacina solfato	i.m. e.v. lenta	– –	– –	0,020/kg 0,7	2,0 0,7
Amile nitrito	inalaz.	0,10	0,30	0,20	0,50
Amiloride cloridrato	per os	0,005-0,01	0,02	0,03	0,03
Aminofenazone	per os	0,30	1	0,50	2
Aminofillina	Vedi teofillina-etilendiammina				
Aminoglutetimide	per os	–	–	0,25	1
Aminosidina solfato	per os i.m.	0,25 0,50	1-2 1-1,50	– –	– –
Amiodarone cloridrato *	per os e.v. o fleboclisi	0,2 0,005/kg	0,6 0,01-0,015/kg	0,4 –	1,6 1,2
Amisulpride	per os i.m.	– –	– –	– –	1,2 0,4
Amitriptilina cloridrato *	per os i.m.	0,025 (22) 0,02-0,03	0,05-0,10 0,08-0,12	– –	0,15-0,30 0,12
Amlodipina besilato	per os	–	–	–	0,0138

●RIT = RITARDO

AMBROXOL CLORIDRATO	costo d’acquisto 0,95 €/g

Scadenza materie prime

AMBROXOL CLORIDRATO	1° dicembre 2015
SACCAROSIO	1° dicembre 2018
METILE*p*-IDROSSIBENZOATO	1° dicembre 2017

Cognome e Nome _____ **Prova n°**_____

SCHEDA DI PREPARAZIONE

Fonte di legittimazione: O Farmacopea_____

M Prescrizione medica del _____N°_____

Forma farmaceutica:_____

Riferimento alla procedura tecnologica_____

Avvertenze e precauzioni:_____

Componenti	*Cod.Interno*	*Lotto**	*Quantità unitarie*	**

** Compilare se preparazione allestita un'unica volta e che dunque non richiede foglio di allestimento.*
*** Barrare se impiegato per motivi tecnici*

Controlli previsti _____

Contenitore _____

Periodo di validità _____

Disciplina di vendita (senza ricetta, RR, RNR, RRM) _____

Metodo di preparazione

OBBLIGO DI REGISTRAZIONE IN USCITA **SÌ** **NO**

Cognome e Nome _____**Prova n°**_____

SCHEDA RICETTA

Tipologia

□ RR □ RNR □ RNR (tab 3) □ RRM □ SSN

La ricetta risulta spedibile?
□ sì
□ no perché?

Validità temporale ed eventuale ripetibilità della ricetta in oggetto:

Formalismi obbligatori per il **medico** per la ricetta in oggetto:

Formalismi obbligatori per il **farmacista** per la ricetta in oggetto:

Presenza di:
□ veleni, sostanze molto tossiche
□ sost. stupefacenti e psicotrope □ registrazione registro EU
□ coloranti o corrosivi
□ sostanze vietate per doping

Modalità e tempo di conservazione della ricetta

Data limite di utilizzo della preparazione

Uso
□ UI □ UE

Forma farmaceutica

Controllo di qualità obbligatori per le NBP:

Attività terapeutica della preparazione

n°……**li**……**Dott.**…… …… …… …… …… …… …… …… …… **Avvertenze**…… …… …… **Precauzioni**…… …… …… **Posologia**…… …… …… **Data limite di utilizzo**…… **Sig.**……	