

Pharmacutics

1- Which of the following solvent systems is used in preparation of collodions?

Ethanol-Chloroform

Ethanol-Water

Ether-Chloroform

Ethanol-Ether

2- Which of the following suppository bases is used (selective) for rectal delivery of drugs with high water solubility?

Aqueous bases

Fatty bases

Glycerinated gelatin

PEG bases

3- Which of the following system represents a type 1 gel system?

Three-dimemtional network with non-reversible covalent bond

Three-dimemtional network with reversible hydrogen bond

Three-dimemtional network with sol-gel transition capability at specific temperature

Three-dimemtional networkwith sol-gel gel transition capability at specific pH

4- What is happening in rheologic behavior of an emulsion if emulsifying wax is used?

Creation of thixotropy.

Creation of anti-thixotropy.

Creation of viscoelasticity in continuous phase.

Creation of rheopexy in continuous phase.

5- Which of the following instability is reversible in semisolid creams?

Coalescence

Flocculation

Ostwald repening

Breaking

6- An ointment base that is prepared from PEG is classified as:

- Water-soluble base
- Water-miscible base
- Emulsifying base
- Absorption base

7- Which one of the following is highly consumed polymer in preparing polymer-drug-conjugated?

- PEI
- HPMA
- PVA
- PEG

8- In colon drug delivery system, using Eudragit-S, which one is the drug release mechanism?

- Pressure dependent
- Temperature dependent
- Bacterially triggered
- pH dependent

9- Which one is the key factor in converting amphiphile molecules to bilayer vesicles?

- Critical packing parameter (CPP)
- Hydrophile lipophile balance (HLB)
- Critical micelle concentration (CmC)
- Partition coefficient (Log P)

10- In inhalation propellents nomenclature, the first digit from left represents:

- Number of hydrogen atoms plus 1
- Number of chlorine atoms plus fluorine atoms
- Number of carbon atoms minus 1
- Number of carbon atoms plus 1

11- Which of the following inhalation systems are more suitable for delivery of high volume formulations?

Nebulizer

MDI

DPI

Spacer

12- Degree of agitation of dissolution medium affects dissolution rate by changing:

Surface area of undissolved solid

Saturation solubility of solid in the medium

Dissolution rate constant

Thickness of diffusion layer

13- Dimension (Unit) of diffusion coefficient is:

m^2/sec

mol/sec

mol/m^2

m/sec

14- Which of the followings represents mechanism of Andersén pipette in particle size measurement?

Sieve method

Sedimentation method

Microscopic method

Electrical sensing

15- Which of the following diameters is used in particle size measurement by Coulter counter?

d_v

d_h

d_p

d_s

16- Since for a weak acid $PK_a=8$ and $pH=5$, what is the ratio of unionized form to ionized form of drug?

100 to 1

1000 to 1

1 to 1000

1 to 100

17- For a complete wettability of a solid surface by a liquid, the contact angle should be:

0 degree

90 degree

120 degree

180 degree

18- Emulsifier for preparation of W/O emulsion should have HLB of:

9 - 12

8 - 16

15 - 18

3 - 6

19- In a diluted suspension if the size of dispersed phase increasing 3 time in diameter, velocity of sedimentation is going to be:

3 times more

8 times more

9 times more

6 times more

20- In which of the following chemical kinetic reactions, half life is independent from concentration?

Zero order

First order

Second order

False first order

21- Which one is the rheologic behavior of a folucculated suspension with high viscosity?

- Plastic
- Pseduplastic
- Dilatant
- Newtonian

22- Which one of the following is kwon as active balance between drug concentration in blood plasma and drug site of action?

- Absorption
- Release
- Distibution
- Elimination

23- Remaining time in small intestine is important for absorption of the following products:

- Oral sustained release
- Fast dissolving medicines in GIT
- Products with passive diffusion absorption
- Products with colonic absorption

24- Which one of the following causes a decrease in bioavailability of oral medicines?

- Increasing GIT blood circulation
- Increasing viscosity of GIT content
- Inhibition of liver enzyme responsible for drug metabolisem
- Increasing release of liver enzymes

25- When elimination rate of a drug is 15mg/h, and biological half life is 2 hours,what is the plasma concentration of drug in time t?

- 7.5 mg/L
- 30 mg/L
- 43.3 mg/L
- 5.2 mg/L

26- Which one of the following is true?

- Pharmaceutical elixire containing more alcohol than pharmaceutical syrups
- Aromatic waters containing more alcohol than pharmaceutical elixire
- Fore parentral dosage forms there is no need to add preservatives
- Oral solutions will provide faster plasma concentration than other dosage forms

27- Total acceptable aero-microorganism in preparation of vaginal products and non aqueous oral solutions is:

- 10 and 10000
- 1000 and 100
- 200 and 10
- 1000 and 1000

28- Which one of the following plastics are using in blow-fill-seal technology for preparation of plastic bottle for liquids?

- Thermoplastics
- Thermosetting plastics
- Rubber
- Epoxides

29- In which one of the following dosage forms ther is more possibility of dose dumping?

- Effervescent tablets
- Sublingual tablets
- Sustained release tablets
- Chewable tablets

30- The following filler is mostly used in chewable tablets formulation:

- Microcrystalline cellulose
- Anhydrous lactose
- Manitol
- Dextrose

31- In which of the following will have tablet edge formation?

- Sealing
- Polishing
- Grossing
- Subcoating

32- Which of the following describes the granule formation in wet granulation?

- Capillary
- Funicular
- Droplet
- Pendular

33- Miss uniformity in tablet color is calling:

- Capping
- Mottling
- Picking
- Sticking

34- In dissolving a solid in a liquied, stirring causes:

- Increase in thickness of diffusion layer
- Decrease in thickness of diffusion layer
- Decrease in solubility of solid in liquied
- Increase of solution viscosity

35- According to the USP pharmacopeia, maximum friability for tablets is:

- 0.1%
- 0.5%
- 1%
- 1.5%

36- In the USP pharmacopeia rotary paddle is:

- Apparatus I
- Apparatus II
- Apparatus III
- Apparatus IV

37- Which one of the following is NOT used as a plastisizer in thin layer film coating?

- Diethyl Phthalate
- Triethyl Citrate
- Magnesium Silicate
- Propylene Glycol

38- Which one of the following USP dissolution tester is NOT suitable for measurement of dosage forms which disintegrated to small particles?

- Apparatus I
- Apparatus II
- Apparatus III
- Apparatus IV

39- Regarding granulation, which one of the following is true?

- Hardening Binders is providing solide bridges in dry granulation
- Crystalization of dissolved substances is providing solide bridges in dry granulation
- Partial melting is providing solide bridges in dry granulation
- Partial melting is providing solide bridges in wet granulation

40- Saturation Segregation means:

- Separation of particles in order mix due to size distribution differences
- Separation of particles in order mix due to density differences
- Separation of particles in order mix due to viscosity differences
- Separation of particles in order mix due to insufficient amount of carrier substances.

41- IBC mixer is classified as:

- Tumbling Mixers
- High Shear Mixers
- Agitator Mixers
- Fluid bed mixers

42- Trajectory segregation means segregation of substances in powder mixture due to:

- Movement and displacement of particles
- Kinetic energy of particles
- Dust formation
- Elutiation

43- Dried mixture powder is considering as a:

- Perfect mixture
- Neutral mixture
- Positive mixture
- Negative mixture

44- Which one of the following microorganisms shows Coagulase positive test?

- Acetaphilococcus ureous*
- Salmonella*
- Pseudomonas aerogenosa*
- Candida albicans*

45- Which one of the following sterilization methods are suitable for sterilization of eye products?

- Steam Sterilization
- Radiation Sterilization
- Gaseous Sterilization
- Filtration Sterilization

46- Increasing the following parameters increase filtration rate, EXCEPT:

- Pressure difference in cake filtration
- Viscosity of system
- Surface area of filter
- Permeability of cake

47- Which of the following is used as an antioxidant in oral solutions?

- Thimerosal
- Sodium sulphite
- Methyl paraben
- EDTA

48- Which one of the followings is an advantage of fluidized-bed drier?

- Reduction of electrical charge over the particle surface
- Reduction of surface erosion
- Reduction of solute migration
- Omission of particle segregation

49- Which of the following mills acts through a combination of impact and attrition?

- Runner mill
- Ball mill
- Cutter mill
- Vibration mill

50- Which of the following mills is suitable for size reduction of hard and friable particle to very coarse range?

- Cutter mill
- Fluid energy mill
- Hammer mill
- Roller mill

Pharmacognosy

51- Flowers of which plant, topically indicated for rheumatic pain?

Lavandula angustifolia

Melissa officinalis

Origanum onites

Carum carvi

52- In the following products, which one is a gum resin?

Gamboge

Mastic

Copaiba

Colophony

53- Aldehyde compounds in the essential oil of which of the following plant, is a powerful germicide?

Cinnamomum verum

Thymus vulgaris

Foeniculum vulgare

Juniperus communis

54- Which one is the main compound of *Coriandrum sativum* essential oil?

Alpha pinene

Para cymene

Linalool

Limonene

55- The structure of which of the following compounds, is linear?

Myrthenol

Cadinol

Geraniol

Menthol

56- Which saponin molecule is a suitable starting material for corticosteroid production?

- Diosgenin
- Hecogenin
- Solasodin
- Stigmasterol

57- Sweetness in liquoris extract is pertaining to..... .

- Saccharos
- Glyciritic acid
- Glucoronic acid
- Glyciritenic acid salts

58- Main active component in dried Digital leaf (*Digitalis purpurea*) is..... .

- Purpura glucoside A
- Digitalose
- Digitoxine
- Glucogitaloxine

59- Murrexide test is designed for detection of

- Tropane alkaloids
- Morphinan compounds
- Biological amins
- Purine derivatives

60- Which compound is result of racemization reaction?

- Hyosine
- Atropine
- Papaverine
- Tropic acid

61- Secure Muscular Relaxation effect belongs to the extract of..... .

Cephalis accuminata

Chondrodendron microphyllum

Hydrastis canadensis

Papaver bracteatum

62- Atropin is an antagonist for..... .

Caffeine

pilocarpine

Nuscapine

Ephedrine

63- Ricinoleic acid is a fatty acid.

Straight-chain saturated acid

Straight-chain unsaturated acid

Cyclic saturated acid

Cyclic unsaturated acid

64- Cotton consists of the epidermal trichomes of the seeds of

Linum usitatissimum

Oryza sativa

Gossypium herbaceum

Tritium aestivum

65- The best-known, and the most important pharmaceutically fructan, is

Alginate

Dextrin

Bassorin

Inulin

66- is used in pharmacy as a suspending agent for insoluble powder.

- Tragacant
- Gum arabic
- Alginate
- Agar

67- The leaves of are used almost exclusively for the preparation of the digoxin.

- Digitalis thapsi*
- Digitalis lanata*
- Digitalis purpurea*
- Digitalis lutea*

68- cream is available for the relief of pain in osteoarthritis.

- Hops
- Meadowsweet
- Willow
- Capsicum

69- Hamamelis consists of the deried of *Hamaamelis virginana*.

- Leaves
- Seeds
- Fruits
- Roots

70- The part of the plant and the therapeutic usage of *Harpagophytum procumbens* is:

- Fruit-Rheumatic disorders
- Root-Osteoprosis
- Root- Rheumatic disorders
- Fruit-Osteoprosis

Clinical Pharmacy

71- Which of the following is more sensitive and specific for diagnosis of myocardial injury?

- Creatine kinase
- Myoglobin
- Lactate dehydrogenase
- Troponin

72- Which of the following enzyme is used for diagnosis of biliary obstruction?

- Alanine amino transpherase
- Alkaline phosphates
- Amylase
- Creatine kinase

73- Which of the following statin dose have the most potency in decreasing of LDL-cholesterol?

- Atorvastatin
- Rosuvastatin
- Fluvastatin
- Proavastatin

74- Which of the following medication /medication class can decrease efficacy of ezetimab in co-adminstration?

- Bile-acid sequestrants
- Nicacin
- Statins
- Fibrates

75- All of the following mechanisms have positive effect of Aldostron antagonists in heart failare patients EXCEPT:

- Diuretic effect
- Prevention of reamodelling effect
- Anti-oxidative stress effect
- Inhibition of norepinephrine release effect

76- All of the following mechanisms is related to helicobacter pylori induced peptic ulcer disease EXCEPT:

- Direct mucosal injury
- Change in immunity and inflammatory response
- Increase in gastric acid secretion
- Hypergastrinemia

77- Which of the following anti-epileptic drugs can induce hair loss in patient with tonic clonic seizure?

- Carbamazepine
- Valproic acid
- Topiramate
- Clonazepam

78- Which of the following oral hypoglycemic agents can induce urinary tract infection in a 65 years old woman with diabetes mellitus type 2?

- Empaglifuzin
- Sitagliptin
- Metformin
- Acarbose

79- Which of the followings items can induce pre-renal acute renal failure?

- Acute tubular necrosis
- Renal stones
- Acyclovir
- Glomerular injury

80- Which of the following insulin regimens is recommended for a 10 years old patient with diabetes mellitus type 1?

- Total 20 units: 12 units before breakfast, 8 units before dinner
- Total 10 units: 4 units before breakfast, 6 units before dinner
- Total 10 units: 6 units before breakfast, 4 units before dinner
- Total 20 units: 8 units before breakfast, 12 units before dinner

81- Which of the following lab data can be used for monitoring of erthropoietin therapy in a 65 years old woman with diagnosis of CKD?

- Hematocrit
- RBC number
- Serum iron
- Hemoglobine

82- Which of the following drugs induce less damage to the fetus in a 34 years old pregnant woman with bipolar mood disorder?

- Lamotrigine
- Valproate sodium
- Lithium
- Carbamazepine

83- A 27 years old woman with diagnosis of bipolar mood disorder has been refered to a psychiatrist with chief compliants of weaknes and malaise.

The following lab data:

K= 4meq/L, ALT= 19u/L, Na= 125meqL, AsT= 21u/L

Which of the following drugs must be discontinued?

- buspirone
- Lithium
- Clonazepam
- Oxcarbazine

84- Which of the following antibiotics have the best penetration to the prostate tissue in patients with prostatitis?

- Co-trimoxazole
- Tetracycline
- Amoxacillin
- Ciprofloxacin

85- Which of the following microorganisms most frequently induces community acquired pneumonia?

- Legionella
- Streptococcus Pneumonia
- Hemophilous Influenza
- Mycoplasma

86- All of the following antibiotics could be used in treatment of Legionella Pneumonia, EXCEPT:

- ceftriaxon
- levofloxacin
- azithromycin
- doxycyclin

87- Which of the following benzodiazepine has the most rapid onset of action?

- Clonazepam
- Chlordiazpoxide
- Diazepam
- Oxazepam

88- Which of the following anti-depressant is recommended in a 38 year old breast feeding mother?

- Nortriptylyn
- Serteralin
- Paroxetin
- Doxepin

89- Which of the following biologic DMARDs should not be used in patients with diagnosis of rheumatoid artheritis?

- Adalimumab
- Natalizumab
- Rituximab
- Golimumab

90- Which of the following anti-tuberculosis drugs is the drug of choice for the treatment of latent TB?

- Rifampin
- Ethambutol
- Pyrazinamide
- Isoniazid

91- Is the gold standard for the diagnosis of urinary tract infection.

- Leukocyte esterase test
- Urinary culture
- Urinary analysis
- Urine nitrate test

92- Which of the following drug is not recommended for treatment of cystitis because of its low concentration in urine?

- ciprofloxacin
- Ofloxacin
- Levofloxacin
- Moxifloxacin

93-HPV subtype increase cervical neoplasia.

- 6, 11
- 6, 18
- 11, 18
- 16, 18

94- Which of the following drug is not recommended in 45 year old man with angina pectoris and left ventricular ejection fraction <30%?

- Amlodipine
- Verapamil
- Ranolazin
- Isosorbide dinitrate

95- In a patient with stable COPD. Which of the following drug has the most effect for improving quality of life?

- Salbutamol oral spray
- Ipratropium oral spray
- Formetrol oral spray
- Theophyllin tablet

96- Which of the following drug can be used for the treatment of mild to moderate acne in patient with very sensitized skin?

- Azaleic Acid
- Tretinoin
- Tazarotene
- Salicylic Acid

97- In which of the following condition loop diuretic is not superior to thiazide in the treatment of hypertension ?

- History of renal stone
- Severe edema
- Progressive chronic kidney disease
- Heart failure

98- When using Beta-blockers to control angina pectoris , which of the following heart rate (HR) is desired?

- HR= 80-100 beats/min
- HR= 55-60 beats/min
- HR= 40-50 beats/min
- HR>100 beats/min

99- All of the following drug can induce major depression , EXCEPT:

- Interferon
- Isotretinoin
- levothyroxin
- levetiracetam

100-Which of the following antiepileptic is the best selection for a 27 year old epileptic woman who consume OCP?

- Topiramate
- Carbamazepin
- Phenytoin
- levetiracetam

101-All of the following rout can cuase bacterial pneumonia, EXCEPT:

- Heamatogenous
- Aspiration
- Closed contact
- Inhalation of particles

102-Which antibacterial agent has a fair to poor cerebrospinal fluid (CSF) penetration?

- Ceftriaxone
- Clidamycin
- Ciprofloxacin
- Meropenem

103-Which of the following antibiotic has a good activity against *pseudomona auroginosa* in the treatment of diabetic foot?

- Cefazoline
- Ampicillin-Sulbactam
- Piperacillin-tazobactam
- Doxycyline

104-In treatment of Iron deficiency anemia what is the recommended daily dose of elemental Iron and is there any association between type of salt of Iron and GI side effects?

- About 100 mg- more GI side effects with ferrous sulfat
- About 100 mg- no association between type of salt and GI side effect
- About 200 mg- more GI side effects with ferrous sulfat
- About 200 mg- no association between type of salt and GI side effect

105-A 23 years old student who referred to psychiatrist with diagnosis to generalized anxiety disorder (GAD). Which of the following drug is recommended for relief of her symptoms?

- Flouxetin 20 mg/d
- Venlataxin 37.5 mg/d
- Diazepam 40 mg BD
- Paroxetine 40 mg/d

106-Which of the following DMARDs is the safest in pregnant woman with diagnosis to Rheumatoid Arthritis?

- Leflonamid
- Methotrexate
- Minocycline
- Sulfasalazine

107-Metformin may be induce..... deteciency.

- Vitamin B12
- Vitamin B6
- Vitamin B1
- Folic acid

108-A 67 years old man with diagnosis of heart failure and atrial fibrillation (AF) who under treated with sprinolacton, digoxin, captopril, furosemide. Amiodaron is started for control of af rhythm which of the following drugs have a significant interaction with amiodarone?

- Captopril
- Furosemide
- sprinolactone
- Digoxin

109-What is the antibiotic regimen of choice for the treatment of community-acquired pnemumonia (CAP) in a patient who needs hospitalization?

- Azithromycin
- Co-amoxiclav
- Azithromycin + ceftriaxone
- Co-amoxiclav + levofloxacin

110-What is the antibiotic regimen of choice for the treatment of a patient diagnosed with gonorrhoea?

- Ceftriaxone 250 mg IM single dose + Doxycycline 100 mg PO BID for 7 day
- Azithromycin 1 g PO single dose
- Ceftriaxone 250 mg IM single dose
- Ceftriaxone 250 mg IM every 3 weeks for 3 dose

111-Which one is recommended for a patient with osteomyelitis and infection agent of MRSA?

- Clindamycin
- Oxacillin
- Vancomycin
- Ceftazidime

112-Which of the following sentences is true regarding use of beta-blockers in heart failure?

- All beta blockers decrease the progression of systolic heart failure.
- Use of beta blockers with digoxin is contraindicated
- Fatigue of patients decreases in the first 24-48 hours following use of beta-blockers
- They can decrease apoptosis and necrosis

113-Choose the right answer reading the acute renal failure (ARF).

- Efficacy of low dose of dopamine has been confirmed in controlled trails.
- Insulin may protect the kidney from ARF critically patients.
- Diuretics improve oxygen use in patients with ARF.
- Renal replacement therapy dose not have any role in the management of ARF

114-Which characteristic is not correct regarding the given antidiabetic agent?

- Alpha-glucosidase inhibitors: good bioavailability
- Thiazolidinediones: decrease resistance to insulli
- Liraglutid: is a GLP-1 agonist
- Sitagliptin: dose should be adjusted in renal insufficiency

115-Which of the following sentence is correct in patient with seasonal asthma?

- Only albuterol is sufficient management of patients.
- Coincidence of allergic rhinitis and seasonal asthma is uncommon
- In allergic rhinitis, intranasal corticosteroids help control of both of allergic rhinitis and asthma
- These patient have intermittent asthma all seasons.

116-Which of the following index is the gold standard to determine, if the airway disease is reversible?

- PEF
- FVC
- FEF
- FEV1

117-Which of the following drugs could cause the least exacerbation of psoriasis?

- Lithium
- Interferon
- hydroxychloroquin
- Valproic acid

118-Which of the following Lab test is not recommended in the first stage of assessment of anemia?

- Serum Iron
- Reticulocyte index
- CBC
- Occult blood

119-What is the main cause of angina pectoris?

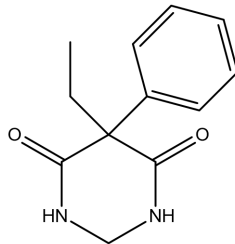
- High blood pressure
- Atherosclerosis
- Diabetes Mellitus type 2
- Heart failure

120-Which of the following class of drug is not used as a first line in therapy of hypertension?

- ACE inhibitors
- Angiotensin receptor antagonists
- Beta blockers
- Diuretics

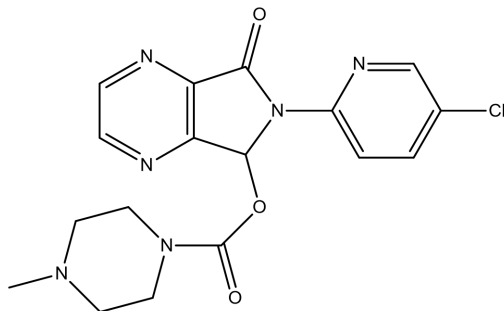
Medicinal Chemistry

121-Considering the following chemical Structure, what is the application of this compound?



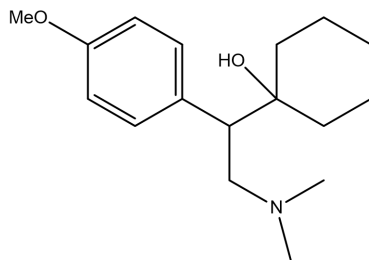
- Antianxiety
- Pain killer
- Anti inflammatory
- Anti Seizure

122-What is the indication of the following compound?



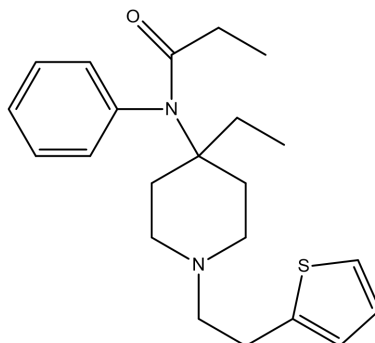
- Hypnotic
- Pain killer
- Anti inflammatory
- Anti hypertension

123-Based on the structure of the following compound, what mechanism of action would you expect for it?



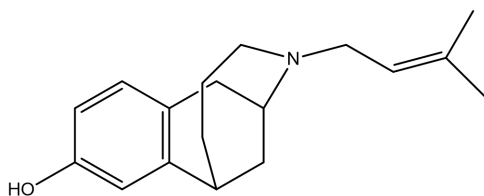
- Serotonin uptake inhibition
- Norepinephrine uptake inhibition
- Dopamine uptake inhibition
- Dopamine receptor antagonist

124-Considering the chemical structure, what is the biological activity of the following compound?



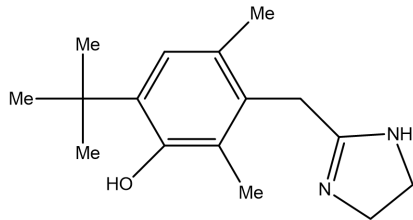
- Kappa Opioid receptor agonist
- Mu (μ) opioid receptor agonist
- Mu (μ) opioid receptor antagonist
- Kappa Opioid receptor antagonist

125-What is the biological activity of the following compound?



- Kappa opioid receptor antagonist
- Mu (μ) opioid receptor agonist
- Kappa receptor agonist / Mu (μ) receptor antagonist
- Kappa receptor antagonist / Mu (μ) receptor agonist

126-What type of activity would you expect for the following compound?



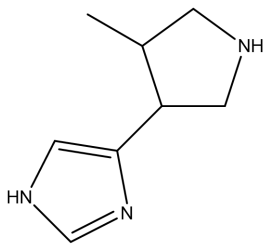
Central alpha-1 receptor agonist

Peripheral alpha-2 agonist

Peripheral alpha-1 agonist

Central alpha-2 antagonist

127-What type of activity would you expect for the following compound?



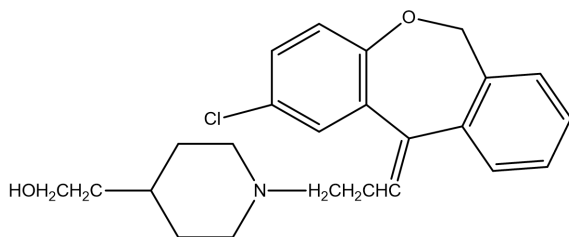
H₁ agonist

H₂ agonist

H₃ agonist

H₁ antagonist

128-What is the activity of the following compound?



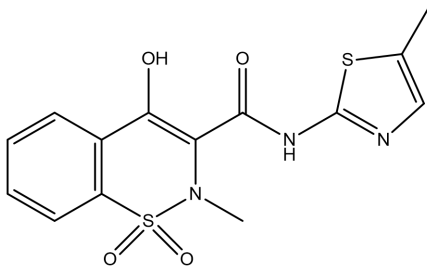
Anti depressant

Anti muscarinic

Anti psychosis

Anti anxiety

129-What is the activity of the following compound?



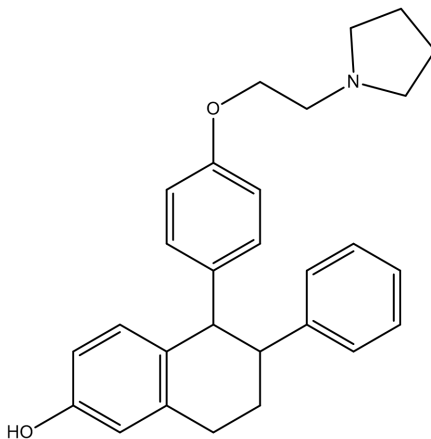
Anti hypertensive

Narcotic pain killer

Nonsteroidal anti inflammatory

Anti seizure

130-What is the biological activity of the following compound?



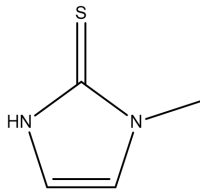
Anti androgenic

Mineralocorticoid

Anti progestin

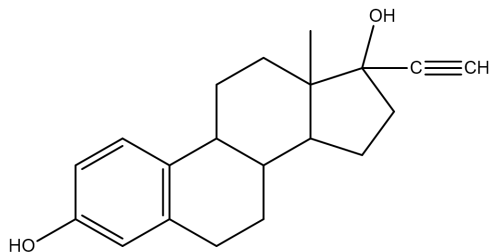
Selective estrogen receptor modulator

131-What activity would you expect for the following compound?



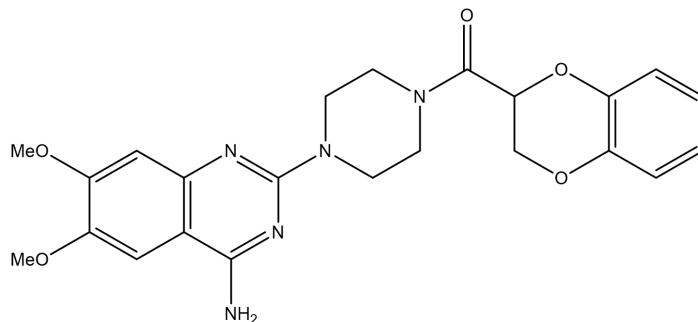
- H₁ agonist
- H₂ agonist
- Anti thyroid
- Thyroid hormone mimetic

132-In what category of steroids will the following compound fit?



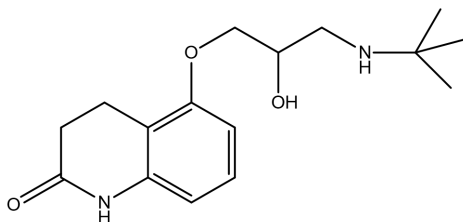
- Oral estrogens
- Non-oral estrogens
- Oral progestins
- Non-oral progestins

133-Considering the following chemical structure, which one is the receptor for this compound?



- Alpha-1 adrenergic
- Alpha-2 adrenergic
- Beta-1 adrenergic
- Beta-2 adrenergic

134-What is the indication of the following compound?

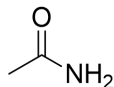


- Anti anxiety
- Anti spasm
- Anti hypertensive
- Anti psychosis

135-Which one is the best bioisoster for carboxylic acid functional group (COOH)?

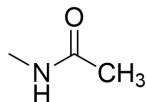
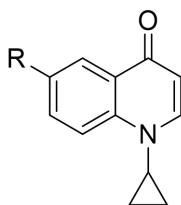
-CH₃

-CF₃

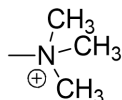


-NO₂

136-Which R group will increase the electronic density of benzene ring in the following structure?



-NO₂



-C≡N

137-Benzathine Penicillin

is a freely water soluble salt of penicillin G and has a long duration of action

is a low water soluble salt of penicillin G and has a short duration of action

is a low water soluble salt of penicillin G and has a log duration of action

is a freely water soluble salt of penicillin G and has a short duration of action

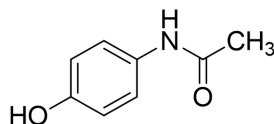
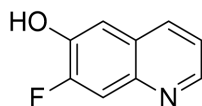
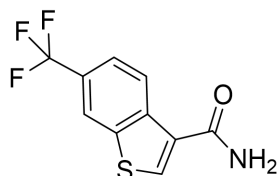
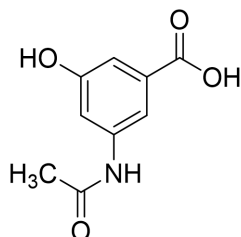
138-Pi (π) parameter in QSAR studies, is related to which one of the following characteristics for a substituent?

Electron withdrawing

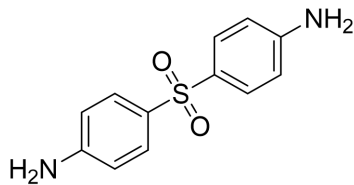
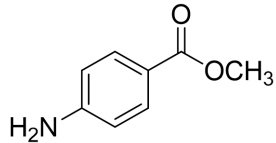
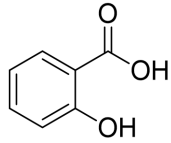
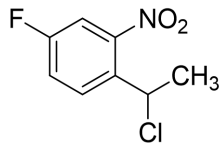
Electron donating

Lipophilicity

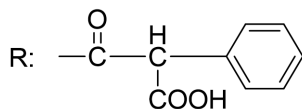
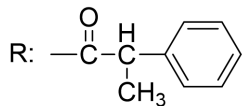
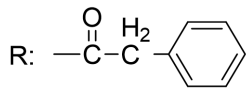
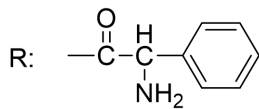
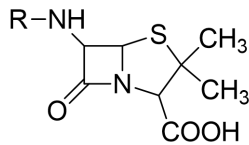
Size

139-Which one of the following compounds is capable for the formation of three (3) hydrogen bonds with its receptor as a hydrogen-donating group?

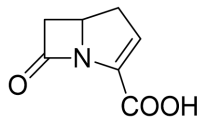
140-For which one of the following compounds, urinary excretion will increase by making the urine alkaline?



141-Which penicillin could be used by oral administration?



142-The following beta-lactam structure belongs to:



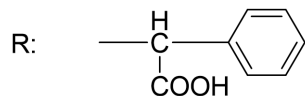
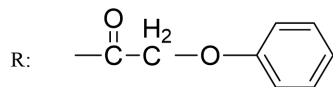
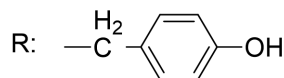
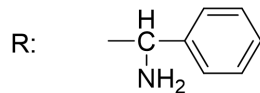
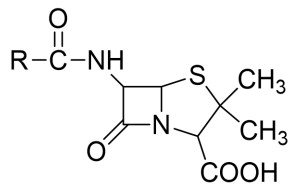
Penicillins

Cephalosporins

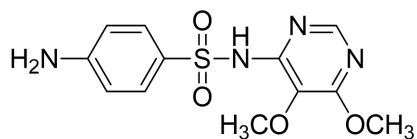
Carbapenems

Monobactams

143-Which compound is effective against *Pseudomonas aeruginosa*?



144-What is the mechanism of action for the following compound?

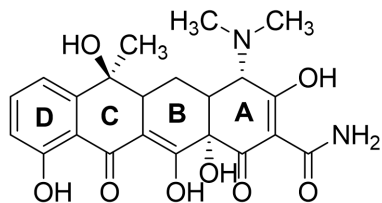


Inhibition of Transpeptidase

Interfering with folic acid synthesis

GABA receptor inhibition

Inhibition of protein synthesis

145-Tetracyclin in alkaline pH ($\text{pH} \geq 8.5$) will

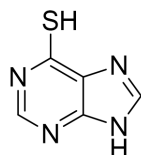
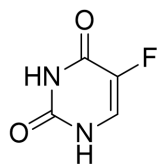
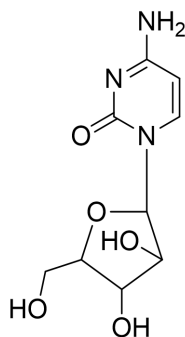
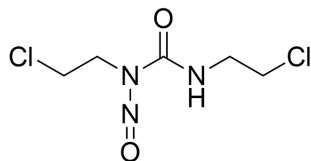
decompose at ring C and form an inactive lactone structure

dehydrate at ring A and it is still active

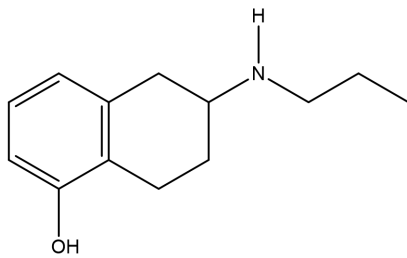
remain intact and it is still active

aromatize at ring C and becomes inactive

146-Which compound is anti cancer with alkylating mechanism of action?

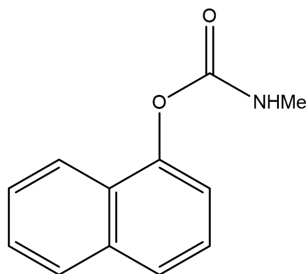


147-Which one is the receptor for the following compound?



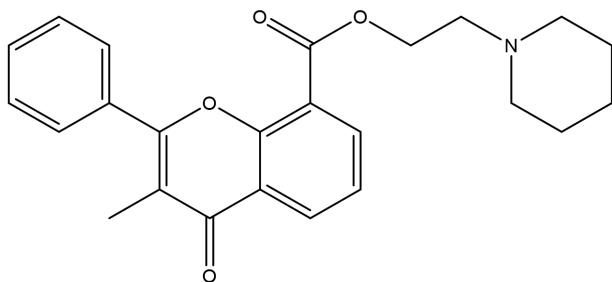
- Dopamine D1 receptor
- Dopamine D2 receptor
- Alpha-1 adrenergic receptor
- Alpha-2 adrenergic receptor

148-What activity would you expect for the following structure?



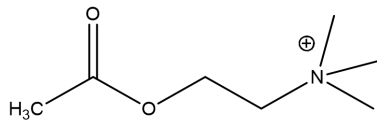
- Reversible cholinesterase inhibitor
- Irreversible cholinesterase inhibitor
- Muscarinic receptor agonist
- Muscarinic receptor antagonist

149-What is the activity of the following structure?



- Anti muscarinic
- Anti nicotinic
- Anti anxiety
- Anti psychosis

150-Which one is False about the acetylcholine interaction with its muscarinic receptor?



- The quaternary ammonium is involved in an ionic bond
- The oxygen with sp^3 hybridization forms a hydrogen bond with receptor
- The carbonyl group is involved in a hydrogen bond
- The methyl group attached to the carbonyl group is involved in a hydrophobic bond

Toxicology and Pharmacology

151-Which receptor is ionotropic?

- Muscarinic M_1
- Beta₂
- Nicotinic N_N
- Alpha₁

152-Which of the Cytochrome P450 enzymes is more abundant in human liver?

- CYP1A2
- CYP2A6
- CYP2C9
- CYP3A4

153-Which one is not an effect of Atropine?

- Urine retention
- Bronchospasm
- Mydriasis
- Prolongation of gastric emptying time

154-Which of the alpha2 agonists is mostly used as muscle relaxant?

- Tizanidine
- Clonidine
- Methyldopa
- Moxonidine

155-Which of the following drugs is a selective alpha antagonist?

- Carvedilol
- Prazosin
- Labetalol
- Bucindolol

156-The main mechanism of action of which antihypertensive drug is mediated by opening of potassium channels?

- Minoxidil
- Hydralazine
- Verapamil
- Valsartan

157-What is the mechanism of vascular smooth muscle relaxant effect of anti-angina drugs?

- Increase of intracellular calcium
- Inhibition of potassium channels
- Increase of cGMP
- Decrease of cAMP

158-Which one is used in heart failure induces hyperkalemia?

- Isosorbide dinitrate
- Hydralazine
- Furosemide
- Spironolactone

159-Which anti-arrhythmia drug has adverse effects on thyroid gland and lungs?

- Adenosine
- Amiodarone
- Flecainide
- Procainamide

160-Which one is not an effect of theophylline?

- Positive inotropic effect
- Stimulation of gastric acid secretion
- Tremor
- Skeletal muscle relaxation

161-Which of the following drug is a zolpidem antagonist?

- Muscimol
- Flumazenil
- Pentylentetrazole
- Fomepizole

162-Which one of the antiepileptic drugs has a high protein-binding and its half life is increased in high doses?

- Carbamazepine
- Primidone
- Phenytoin
- Lamotrigine

163-Which one of anti-Parkinson drugs is a pro-drug and has a higher incidence of on-off phenomenon?

- Levodopa
- Pramipixole
- Amantadine
- Selegiline

164-Which antipsychotic drug has a lower extrapyramidal side effects?

- Haloperidol
- Clozapine
- Thiotixene
- Fluphenazine

165-Agonists of which opioid receptor may cause respiratory depression?

- Mu
- Delta
- Kappa
- Sigma

166-Mechanism of action of which one of oral anticoagulant drugs is mediated by inhibition of Xa factor?

- Hirudine
- Dipyridamole
- Rivaroxaban
- Clopidogrel

167-Which one of drugs used in dyslipidemia inhibits sterol reabsorption?

- Ezetimibe
- Gemfibrozil
- Niacin
- Atorvastatin

168-Which one has a more COX-II inhibitory effect?

- Meloxicam
- Ketoprofen
- Ketorolac
- Naproxen

169-Which one of somatostatin receptor agonists is used to treat acromegaly?

Somatropin

Octreotide

Leuprolide

Goserelin

170-Which glucocorticoid has a shorter duration of action?

Triamcinolone

Betamethasone

Dexamethasone

Hydrocortisone

171-Which one of antiandrogen drugs has 5-alpha reductase inhibitory effect?

Cyproterone

Flutamide

Gossypol

Finasteride

172-Incidence of lactic acidosis with which one of antidiabetic drugs is more probable?

Repaglinide

Acarbose

Metformin

Sitagliptin

173-Which class of antimicrobial agents are mainly bactericide?

Tetracyclines

Fluoroquinolones

Macrolides

Licosamides

174-Which cephalosporine causes a disulfiram-like reaction if used with alcohol-containing medications?

Cefoprazone

Cefazoline

Cefepime

Ceftriaxone

175-Which macrolide has a lower inhibitory effect on CYP450 system?

Erythromycin

Clarithromycin

Telithromycin

Azithromycin

176-Which of the following drugs has a dihydrofolate reductase inhibitory effect?

Sulfamethoxazole

Spiramycine

Trimethoprim

Vancomycin

177-Which one of antidepressant drugs has a hypnotic indication with 5HT2 receptor antagonistic effect?

Trazodone

Clomipramine

Paroxetine

Doxepin

178-Which one of the following agents act as a peptide in CNS?

Histamine

NMDA

Substance P

Glycine

179-Which of the following drugs is not usually used against influenza disease?

- Zanamivir
- Ribavirin
- Oseltamivir
- Amantadine

180-Metabolite of which anticancer drug has a MAO inhibitory effect?

- Cyclophosphamide
- Cisplatin
- Dacarbazine
- Procarbazine

181-Which of the following drugs is mainly classified as a IL-6 mediated signaling inhibitor?

- Natalizumab
- Rituximab
- Adalimumab
- Tocilizumab

182-What is the laxative class of psyllium?

- Bulk-forming
- Osmotic
- Stimulant
- Softener

183-Which of antituberculosis agents is a RNA polymerase inhibitor?

- Isoniazid
- Ethambutol
- Rifampin
- Pyrazinamide

184-Exposure to high level of which compound causes AML cancer?

- Styrene
- Toluene
- Benzene
- Xylenes

185-Nephrotoxicity due to Acetaminophen intoxication is observed in which area of kidney?

- Distal with increase in uric acid
- Proximal without potassium eliminatan
- Distal without sodium eliminatim
- Proximal with BUN increase

186-Which one is the metabolite of CYP2E1 in ethanol oxidation?

- Formaldehyde
- Acetaldehyde
- Acetic acid
- Formic acid

187-Which is the major cause of centrilobular liver toxicity after over dose of Acetaminophen?

- High level of P450 enzymes and increase of glutathione storage
- High level of glutathione storage and reduction of P450 enzymes
- High level of P450 enzymes and glutathione depletion
- Low level of P450 enzymes and gultathione depletion

188-Which of the following agents do not produce none-immunological idiosyncrathic liver toxicity?

- Diclofenac
- Nitrofuration
- Sodium valproate
- Isoniazide

189-Which one is the toxicological pathway of superoxide anion?

- Conversion of HOOH to $O_2^{\cdot-}$ with SOD catalysis
- Conversion of O_3 to O_2
- Conversion of (ONOO $^{\cdot-}$, HOOH) to (NO_2 , $CO_3^{\cdot-}$, $HO^{\cdot-}$) Radicals
- Redoction of $CO_3^{\cdot-}$ to CO_2

190-Which compound does not initiate lipid peroxidation?

- α and β unsaturated Aldehyde
- Ethane
- Hydryxyl Radical
- Ethanol

191-Which one is the best description of Detoxification?

- The process which fully eliminates toxicants or prevent their production
- The process which partially eliminates toxic materials and decreases their metabolites
- The process which eliminates toxic compounds
- The process which prevents production of toxic metabolites

192-Based one LD₅₀ which one is the most dangerous compound?

- Nicotine
- Botulinum toxin
- Digoxine
- Ethyl alcohol

193-Which one of following compounds produce nephrotoxicity assoaiated with tubular obstruction?

- Cadmium
- Acyclovir
- Lead
- Cisplatin

194-Which one is associated with Nephrotoxicity from high dose of amphotericin B?

- Nephrotoxicity with polyurea resistant to ADH
- Proximal toxicity with BUN increase
- Cytotoxicity with hyperkalemia
- Distal toxicity with sodium decrease

195-Does metylaxtion of Arsenic (AS) decrease its toxicity?

- Yes, decrease pentavalent Arsenic toxicity
- Yes, decrease teivalent Arsenic toxicity
- No, increase pentavalent Arsenic toxicity
- No, increase teivalent Arsenic toxicity

196-Which one requires assessment?

- Danger
- Hazaed
- Risk
- Toxin

197-Which statement is the best description of anemia related to lead toxicity?

- Inhibition of conjugation of glycine to succinyl COA
- Inhibition of ALA dehydrogenase and conversion of ALA to porphobilinogen
- Inhibitin of haemoxidase and inhibitin of haem production
- Inhibition of delta amino levolorinic acid and decrease of protoporphyrin IX production

198-Which one is not correct in relation to neurological aspect of lead poisoning?

- Increase of each $\mu\text{g/dL}$ of BLL decreases 2-4 of HQ points in the range of 5-35 $\mu\text{g/dL}$
- The major goal of lead toxicity in children is to decrease level of BLL below 10 $\mu\text{g/dL}$
- Acadcdical and Congenital sequalee is observed in BLL of above 5 $\mu\text{g/dL}$
- BLL below 5 $\mu\text{g/dL}$ is safe in children

199-Which pathway is not involved in enzymatic conversion of ethanol to acetaldehyde?

ADH-catalyzed oxidation

Catalase in presence of H_2O_2 and NADPH

NADPH in presence of SOD

CYP2E1

200-Which following sentence is the best description of methanol toxicity in human and mouse?

Presence of formase and high level of tetrahydrofolate in mouse and its absence in human

Presence of catalase in mouse and alcohol dehydrogenase in human and less conversion of methanol to formaldehyde in human

Presence of formaldehyde dehydrogenase and high level of NADPH in mouse and low level of NADPH in human

Presence of SOD in mouse and its absence in human