Pharmacopoeias. In *Eur.* (see p.vii).
Ph. Eur. 6.2 (Calcium Levofolinate Pentahydrate). A white or light yellow, amorphous or crystalline, hygroscopic powder. Slightly soluble in water; practically insoluble in alcohol and in acetone. A 0.8% solution in water has a pH of 7.5 to 8.5. Store in airtight containers. Protect from light.

Sodium Folinate

Disodium folinate *(BANM).*

Натрия Фолинат

$C_{20}H_{21}N_7O_7Na_2$ = 517.4.
CAS — 42476-21-1 (monosodium folinate).
ATC — V03AF06.
ATC Vet — QV03AF06.

Adverse Effects

Occasional hypersensitivity, including anaphylactic reactions, has been reported; pyrexia has occurred rarely after injections. Gastrointestinal disturbances, insomnia, agitation, and depression have been reported rarely, after high doses.

Precautions

As for Folic Acid, p.1940.

Interactions

As for Folic Acid, p.1940.

Folinic acid should not be used with a folic acid antagonist such as methotrexate as this may nullify the effect of the antagonist. Folinic acid enhances the toxicity, as well as the antineoplastic action, of fluorouracil, especially on the gastrointestinal tract.

Pharmacokinetics

Calcium folinate is well absorbed after oral and intramuscular doses and, unlike folic acid (p.1941), is rapidly converted to biologically active folates. Sodium folinate is considered to be bioequivalent to calcium folinate. Folate is concentrated in the liver and CSF although distribution occurs to all body tissues. Folates are mainly excreted in the urine, with small amounts in the faeces.

◊ References.

1. McGuire BW, *et al.* Pharmacokinetics of leucovorin calcium after intravenous, intramuscular, and oral administration. *Clin Pharm* 1988; **7:** 52–8.
2. Wolfrom C, *et al.* Pharmacokinetic study of methotrexate, folinic acid and their serum metabolites in children treated with high-dose methotrexate and leucovorin rescue. *Eur J Clin Pharmacol* 1990; **39:** 377–83.
3. Zittoun J, *et al.* Pharmacokinetic comparison of leucovorin and levoleucovorin. *Eur J Clin Pharmacol* 1993; **44:** 569–73.
4. Mader RM, *et al.* Pharmacokinetics of rac-leucovorin vs [S]-leucovorin in patients with advanced gastrointestinal cancer. *Br J Clin Pharmacol* 1994; **37:** 243–8.
5. Schmitz JC, *et al.* Disposition of folic acid and its metabolites: a comparison with leucovorin. *Clin Pharmacol Ther* 1994; **55:** 501–8.

Uses and Administration

Folinic acid is the 5-formyl derivative of tetrahydrofolic acid, the active form of folic acid. Folinic acid is used principally as an antidote to folic acid antagonists, such as methotrexate (p.747), which block the conversion of folic acid to tetrahydrofolate by binding the enzyme dihydrofolate reductase. It does not block the antimicrobial action of folate antagonists such as trimethoprim or pyrimethamine, but may reduce their haematological toxicities. It is also used as an adjunct to fluorouracil in the treatment of colorectal cancer.

Folinic acid is given as calcium or sodium folinate, although doses are stated in terms of folinic acid. 1.08 mg of anhydrous calcium folinate, 1.27 mg of calcium folinate pentahydrate, or 1.09 mg of sodium folinate are each equivalent to about 1 mg of folinic acid. Calcium folinate can be given orally, by intramuscular injection, or by intravenous injection or infusion. It has been recommended that oral doses should not be greater than 50 mg, since absorption is saturable. Calcium levofolinate, the active laevo-isomer, is used similarly to calcium folinate; it is given in doses half those recommended for the racemic form. Sodium folinate is given by intravenous injection or infusion; sodium levofolinate is used similarly.

In cases of inadvertent **overdosage of a folic acid antagonist**, folinic acid should be given as soon as possible and preferably within the first hour. Doses equal to or greater than the dose of methotrexate have been recommended. Intravenous injections should be given over several minutes because of their calcium content; the maximum recommended rate is equivalent to folinic acid 160 mg/minute. Alternatively it has been stated that for large doses or overdoses of methotrexate, calcium folinate may be given by intravenous infusion in a dose equivalent to 75 mg of folinic acid within 12 hours, followed by 12 mg intramuscularly every 6 hours for 4 doses. Although vincristine is not a folic acid antagonist, folinic acid has also been proposed for some manifestations of vincristine toxicity overdosage—see p.787.

Folinic acid is used with high-dose methotrexate antineoplastic therapy to reduce the toxicity of the methotrexate (‘**folinic acid rescue**’; ‘calcium leucovorin rescue’). Calcium folinate rescue is necessary when methotrexate is given at doses exceeding 500 mg/m^2 and should be considered with methotrexate doses of 100 to 500 mg/m^2. It may sometimes be considered in patients who have received lower doses.

Dosage and duration of folinic acid rescue must be adapted according to the methotrexate regimen and the patient’s ability to clear the antineoplastic; many antineoplastic regimens include appropriate rescue protocols. In general, UK licensed drug information recommends that the first dose of calcium folinate is the equivalent of 15 mg folinic acid (6 to 12 mg/m^2) to be given 12 to 24 hours (usually the latter) after the beginning of methotrexate infusion. The same dose is given every 6 hours for 24 hours, initially by intramuscular injection or intravenous injection or infusion, but switching to the oral form after one or more parenteral doses. At the end of this time (48 hours after the start of the original methotrexate infusion) the residual methotrexate concentration should be measured. If this is *less* than a threshold concentration of 0.5 micromoles/litre, the same dose is continued usually for a further 48 hours. If it is *greater* than this value, further calcium folinate dosages should be adapted according to methotrexate concentration as follows, and given every 6 hours for a further 48 hours or until the serum-methotrexate concentration falls below 0.05 micromoles/litre (i.e. one-tenth of the threshold concentration):

- serum methotrexate > 0.5 micromoles/litre: calcium folinate equivalent to 15 mg/m^2 folinic acid
- serum methotrexate > 1 micromole/litre: calcium folinate equivalent to 100 mg/m^2 folinic acid
- serum methotrexate > 2 micromoles/litre: calcium folinate equivalent to 200 mg/m^2 folinic acid

The dose of sodium folinate in rescue therapy is also based on serum-methotrexate concentrations (as measured 24 to 30 hours after beginning methotrexate):

- serum methotrexate 0.01 to 1.5 micromoles/litre: sodium folinate equivalent to 10 to 15 mg/m^2 folinic acid every 6 hours for 48 hours
- serum methotrexate 1.5 to 5 micromoles/litre: sodium folinate equivalent to 30 mg/m^2 folinic acid every 6 hours until methotrexate concentration is less than 0.05 micromoles/litre
- serum methotrexate > 5 micromoles/litre: sodium folinate equivalent to 60 to 100 mg/m^2 folinic acid every 6 hours until methotrexate concentration is less than 0.05 micromoles/litre

In patients who have received doses of methotrexate below 100 mg, and in whom rescue therapy is considered appropriate, doses of folinic acid 15 mg by mouth every 6 hours for 48 to 72 hours may suffice.

In addition, measures to ensure the prompt excretion of methotrexate (maintenance of high urine output and alkalinisation of urine) are integral parts of rescue treatment. Renal function should be monitored daily.

Folinic acid is also used **with fluorouracil** to enhance the cytotoxic effect in advanced colorectal cancer. Both high-dose regimens (typically doses of folinic acid 200 mg/m^2, followed by fluorouracil) and low-dose regimens (20 mg/m^2) have been used—for details, see Uses and Administration of Fluorouracil, p.723. Sodium folinate has been used in similar doses. It may also be given at a dose equivalent to folinic acid 500 mg/m^2 by intravenous infusion over 2 hours. An intravenous injection of fluorouracil 600 mg/m^2 is given one hour after the start of the folinate infusion. Alternatively, a continuous infusion of fluorouracil 2.6 g/m^2 is given for 24 hours after the sodium folinate dose. Treatment is given weekly for 6 weeks, and may then be repeated after a 2-week interval; the number of cycles depends on the response of the tumour.

Folinic acid, like folic acid, is effective in the treatment of folate-deficient **megaloblastic anaemia** (see p.1982). Doses of 15 mg daily by mouth have been suggested. If given intramuscularly a dose of up to 1 mg daily has been recommended on the grounds that higher doses have not been proven to be any more effective. It is unsuitable for megaloblastic anaemia secondary to vitamin-B_{12} deficiencies.

Cardiovascular disease. For a report of the use of intravenous folinic acid to reduce levels of homocysteine in haemodialysis patients, see Cardiovascular Disease, under Folic Acid, p.1941.

Deficiency states. Cerebral folate deficiency has been defined as any neurological syndrome associated with low CSF concentrations of 5-methyltetrahydrofolate, the active metabolite of folic acid.[1,2] Neurodevelopmental disorders have been associated with this deficiency, manifest as irritability, sleep disturbances, cerebellar ataxia, spastic paraplegia, dyskinesia, epileptic seizures, and speech difficulties. Dramatic improvements in some symptoms have been noted with oral folinic acid;[1-3] 0.5 to 1 mg/kg folinic acid daily has been used.[1] Analysis of CSF folate metabolites is recommended for patients presenting with movement disorders, mental retardation, or autism.[2,3]

1. Ramaekers VT, Blau N. Cerebral folate deficiency. *Dev Med Child Neurol* 2004; **46:** 843–51.
2. Hansen FJ, Blau N. Cerebral folate deficiency: life-changing supplementation with folinic acid. *Mol Genet Metab* 2005; **84:** 371–3.
3. Moretti P, *et al.* Cerebral folate deficiency with developmental delay, autism, and response to folinic acid. *Neurology* 2005; **64:** 1088–90.

HIV infection and AIDS. Calcium folinate has been used to reduce the toxicity of pyrimethamine and trimethoprim in patients with HIV infection. However, oral calcium folinate given to patients with AIDS receiving co-trimoxazole for the treatment of pneumocystis pneumonia was associated with a higher rate of therapeutic failure and a decrease in survival and did not reduce the frequency of dose-limiting co-trimoxazole toxicity.[1] Calcium folinate also did not reduce the toxicity of co-trimoxazole being used for the primary prophylaxis of PCP.[2] Vitamin B_{12} and folinic acid supplementation in patients with HIV infection did not prevent or reduce zidovudine-induced myelosuppression.[3]

1. Safrin S, *et al.* Adjunctive folinic acid with trimethoprim-sulfamethoxazole for Pneumocystis carinii pneumonia in AIDS patients is associated with an increased risk of therapeutic failure and death. *J Infect Dis* 1994; **170:** 912–17.
2. Bozzette SA, *et al.* The tolerance for zidovudine plus thrice weekly or daily trimethoprim-sulfamethoxazole with and without leucovorin for primary prophylaxis in advanced HIV disease. *Am J Med* 1995; **98:** 177–82.
3. Falguera M, *et al.* Study of the role of vitamin B and folinic acid supplementation in preventing hematologic toxicity of zidovudine. *Eur J Haematol* 1995; **55:** 97–102.

Preparations

BP 2008: Calcium Folinate Injection; Calcium Folinate Tablets;
USP 31: Leucovorin Calcium Injection; Leucovorin Calcium Tablets.

Proprietary Preparations (details are given in Part 3)

Arg.: Asovorin; Cromatonbic Folinico†; Elvefocal; Estroquin; Folinfabra; Leucocalcin; Novizet; Rontafor; ***Austria:*** FOLI-Cell; Isovorin; Rescuvolin; Sodiofolin; ***Belg.:*** Elvorine; Folina-Cell; Ledervorin; Rescuvolin; VoriNa; ***Braz.:*** Calfolin†; Folicorin; Isovorin†; Legifol CS; Lenovor†; Levorin; Nyrin†; Prevax; Rescuvolin†; Tecnovorin; ***Chile:*** Covorit; ***Cz.:*** Antrex†; Levofolic; Sanficinate†; VoriNa; ***Denm.:*** Isovorin; Rescuvolin†; ***Fin.:*** Antrex; Isovorin; Rescuvolin†; ***Fr.:*** Elvorine; Folinoral; Lederfoline; Osfolate; ***Ger.:*** DeGalin; FOLI-Cell; Lederfolat; Neofolin; O-folin; Oncofolic; Rescuvolin; Ribofolin; VoriNa; ***Gr.:*** Buateron; Calcifolin; Calcivoran; Claro; Durofolin; Esvorin; Fedolen; Folical; Foliment; Folinato; Folivoran; Folmigor; Foxolin; Isovorin; Lizocalcio; Reotan; Rescuvolin; Sanovein; Veravorin; Vivalcid; Zamenit; Zenemia; ***Hong Kong:*** Calciumfolinat; ***Hung.:*** VoriNa; ***India:*** Biovorin; ***Indon.:*** Rescuvolin; ***Irl.:*** Isovorin†; Lederfolin; ***Ital.:*** Calcifolin; Calfolex; Calinat; Citofolin; Divical†; Divifolin; Ecofol; Emovis†; Folanemin; Folaren; Foliben; Folicalgyn†; Folidar; Folinact†; Folinvit†; Foliplus†; Lederfolin; Levofolene; Osfolato; Resfolin†; Sanifolin; Sulton; Tonofolin; ***Jpn:*** Uzel; ***Malaysia:*** Nyrin; Rescu-

volin; ***Mex.:*** Dalisol; Flynoken A†; Ifavor; Medsavorina; Precileucin; ***Neth.:*** Rescuvolin; VoriNa; ***Norw.:*** Isovorin; Rescuvolin; ***NZ:*** Rescuvolin†; ***Philipp.:*** Folinoxan; Litacor; Lovorin; Rescuvolin; ***Port.:*** Folinovo; Isovorin; Lederfoline; Medifolin; Raycept; Sodiofolin; VoriNa; ***Rus.:*** Dalisol (Далижол)†; ***S.Afr.:*** Isovorin; Rescuvolin; ***Singapore:*** Rescuvolin†; ***Spain:*** Cromatonbic Folinico; Folaxin; Folidan; Isovorin; Lederfolin; ***Swed.:*** Isovorin; Rescuvolin†; ***Thai.:*** Dalisol; Folina; Rescuvolin; ***Turk.:*** Antrex; Rescuvolin; ***UK:*** Isovorin; Lederfolin†; Refolinon; Sodiofolin; ***Venez.:*** Leuconolver.

Multi-ingredient: ***Gr.:*** Fysiofol; ***Ital.:*** Carfosid; Emazian B12†; Emoantitossina†; Emopon; Eparmefolin; Ferritin Complex; Ferrofolin; Hepa-Factor; Idropan B†; Ipavit†; ***NZ:*** Orzel†.

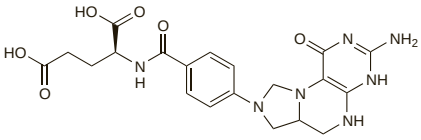
Folitixorin *(pINN)*

Folitixorina; Folitixorine; Folitixorinum; 5,10-Methylenetetrahydrofolate; 5,10-Methylenetetrahydrofolic acid; Tetrahydromethylenefolate. N-{4-[3-Amino-1,2,5,6,6a,7-hexhydro-1-oxoimidazo(1,5-f)pteridin-8(9H)-yl]benzoyl}-L-glutamic acid.

Фолитиксорин

$C_{20}H_{23}N_7O_6$ = 457.4.

CAS — 3432-99-3.



Profile

Folitixorin is an active metabolite of folinic acid. It is under investigation for use with fluorouracil in the treatment of pancreatic cancer and metastatic colorectal cancer.

Fructose

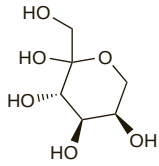
Fructosa; D-Fructose; Fructosum; Fruit Sugar; Fruktoosi; Fruktos; Fruktosa; Fruktóz; Fruktoza; Fruktozė; Laevulose; Laevulosum; Levulose. D-(−)-Fructopyranose.

$C_6H_{12}O_6$ = 180.2.

CAS — 57-48-7.

ATC — V06DC02.

ATC Vet — QV06DC02.



Pharmacopoeias. In *Eur.* (see p.vii), *Jpn*, and *US*.

USNF includes High Fructose Corn Syrup.

Ph. Eur. 6.2 (Fructose). A white or almost white, crystalline powder with a very sweet taste. Very soluble in water; soluble in alcohol.

USP 31 (Fructose). Colourless crystals or a white crystalline powder. Is odourless and has a sweet taste. Freely soluble in water; soluble 1 in 15 of alcohol and 1 in 14 of methyl alcohol.

USNF 26 (High Fructose Corn Syrup). A sweet, nutritive saccharide mixture prepared as a clear, aqueous solution from high-glucose-equivalent corn starch hydrolysate by the partial enzymatic conversion of glucose to fructose, using an insoluble glucose isomerase enzyme preparation. It is available in two types, 42% and 55%, based on fructose content. Store in airtight containers.

Adverse Effects

Large doses of fructose given by mouth may cause flatulence, abdominal pain, and diarrhoea. Lactic acidosis and hyperuricaemia may follow intravenous infusions; fatalities have occurred.

Gout. Fructose may increase serum concentrations of uric acid, especially in those with existing hyperuricaemia or gout. A large cohort study found that consumption of fructose was associated with an increased risk of gout in men. Fructose-rich fruits or fruit juice may also increase the risk.[1] It has been pointed out that fructose intake has increased in the USA, where soft drinks are usually sweetened with high fructose corn syrup (also known as isoglucose), whereas elsewhere they tend to be sweetened with sucrose.[2]

1. Choi HK, Curhan G. Soft drinks, fructose consumption, and the risk of gout in men: prospective cohort study. *BMJ* 2008; **336:** 309–12.
2. Underwood M. Sugary drinks, fruit, and increased risk of gout. *BMJ* 2008; **336:** 285–6.

Hypersensitivity. Urticaria associated with the ingestion of certain foods by a patient was found to be caused by D-psicose, a minor constituent of high-fructose syrup, which is used as a sweetening agent.[1]

1. Nishioka K, *et al*. Urticaria induced by -psicose. *Lancet* 1983; **ii:** 1417–18.

Precautions

Fructose should not be given to patients with hereditary fructose intolerance.

It should be given with caution to patients with impaired kidney function or severe liver damage.

Intravenous administration. Reiterations of the view that the use of intravenous infusions containing fructose and sorbitol, which remained popular in some countries, should be abandoned.[1,2] Not only can they lead to life-threatening build-up of lactic acid, they have led to fatalities in patients with undiagnosed hereditary fructose intolerance.

1. Collins J. Time for fructose solutions to go. *Lancet* 1993; **341:** 600.
2. Committee on Safety of Medicines/Medicines Control Agency. Reminder: fructose and sorbitol containing parenteral solutions should not be used. *Current Problems* 2001; **27:** 13. Also available at: http://www.mhra.gov.uk/home/idcplg?IdcService=GET_FILE&dDocName=CON007456&RevisionSelectionMethod=LatestReleased (accessed 21/07/08)

Pharmacokinetics

Fructose is absorbed from the gastrointestinal tract but more slowly than glucose. It is metabolised more rapidly than glucose, mainly in the liver where it is phosphorylated and a part is converted to glucose; other metabolites include lactic acid and pyruvic acid. Although the metabolism of fructose is not dependent on insulin, and insulin is not considered necessary for its removal from the blood, glucose is a metabolic product of fructose and requires the presence of insulin for its further metabolism.

Uses and Administration

Fructose is sweeter than sucrose or sorbitol. It is used as a sweetener in foods for diabetics (although it is not clear it offers any advantage over sucrose); in the UK it has been advised that the intake of fructose be limited to 25 g daily in persons with diabetes mellitus.

Fructose has been used as an alternative to glucose in parenteral nutrition but its use is not recommended because of the risk of lactic acidosis. Use by intravenous infusion in the treatment of severe alcohol poisoning is also no longer recommended.

Solutions of fructose with glucose have been used in the treatment of nausea and vomiting (p.1700) including vomiting of pregnancy. Fructose is also used as a dissolution enhancer and tablet diluent in pharmaceuticals.

Pain. Oral fructose solution was considered to be as effective as oral glucose solution (p.1946) in alleviating mild pain in neonates.[1]

1. Akçam M. Oral fructose solution as an analgesic in the newborn: a randomized, placebo-controlled and masked study. *Pediatr Int* 2004; **46:** 459–62.

Preparations

BP 2008: Fructose Intravenous Infusion;
USP 31: Fructose and Sodium Chloride Injection; Fructose Injection.

Proprietary Preparations (details are given in Part 3)
Hung.: Fructosol; ***Ital.:*** Fructal†; Fructan; Fructofin; Fructopiran†; Fructosil; Laevosan†; ***Spain:*** Levulosado†.

Multi-ingredient: ***Arg.:*** High Energy; ***Austral.:*** Emetrol†; ***Braz.:*** Biofrut†; Dramin B-6 DL; ***Fr.:*** Filigel; ***Hung.:*** Fructosol E†; ***Indon.:*** Gastro-Ad; ***Israel:*** Peptical; ***Ital.:*** Eparema-Levul; Giflorex; Liozim; ***USA:*** Emetrol; Formula EM; Nausetrol.

Gleptoferron *(BAN, USAN, rINN)*

Gleptoferrón; Gleptoferronum; Iron Heptonate.

Γλεπτοφερρον

$C_7H_{14}O_8.(C_6H_{10}O_5)_n.FeOOH$.

CAS — 57680-55-4.

ATC Vet — QB03AC91.

Profile

Gleptoferron is a macromolecular complex of ferric hydroxide and dextran-glucoheptonic acid. It has been used for iron-deficiency anaemia in veterinary medicine. It is given by intramuscular injection.

Glucose

Dekstoz Monohidrat; Glucosa; Glukoz; Glukoza; Gukoz.

ATC — B05CX01; V04CA02; V06DC01.

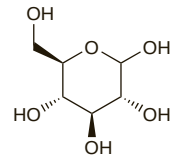
ATC Vet — QB05CX01; QV04CA02; QV06DC01.

Anhydrous Glucose

Anhydrous Dextrose; Anhydrous Glucose; Dextrosum Anhydricum; Gliukozė, bevandenė; Glucosa anhidra; D-Glucose; Glucose anhydre; Glucosum; Glucosum anhydricum; Glukoosi, vedetön; Glukos, vattenfri; Glukosa; Glukoza bezwodna; Vízmentes glükóz. D-(+)-Glucopyranose.

$C_6H_{12}O_6$ = 180.2.

CAS — 50-99-7.



Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Int.*, *Jpn*, *US*,and *Viet.*

Some pharmacopoeias include anhydrous glucose and/or glucose monohydrate as separate monographs whereas others permit the anhydrous and/or monohydrate under a single monograph.

Ph. Eur. 6.2 (Glucose, Anhydrous). A white or almost white, crystalline powder with a sweet taste. Freely soluble in water; sparingly soluble in alcohol.

The BP 2008 directs that when Glucose Intravenous Infusion is required as a diluent for official injections or intravenous infusions, Glucose Intravenous Infusion 5% should be used.

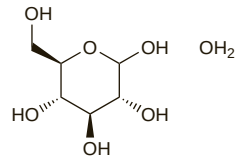
USP 31 (Dextrose). It contains one molecule of water of hydration or is anhydrous. Colourless crystals or white, crystalline or granular powder. It is odourless and has a sweet taste. Soluble 1 in 1 of water and 1 in 100 of alcohol; very soluble in boiling water; soluble in boiling alcohol.

Glucose Monohydrate

Dextrosum Monohydridicum; Gliukozė monohidratas; Glucosa monohidrato; Glucose monohydraté; D-Glucose Monohydrate; Glucosum monohydricum; Glukoosimonohydraatti; Glukosa monohydrát; Glukosmonohydrat; Glükóz-monohidrát; Glycosum; Grape Sugar. D-(+)-Glucopyranose monohydrate.

$C_6H_{12}O_6.H_2O$ = 198.2.

CAS — 5996-10-1.



Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Int.*, *US*, and *Viet.*

Some pharmacopoeias include anhydrous glucose and/or glucose monohydrate as separate monographs whereas others permit the anhydrous and/or monohydrate under a single monograph.

Eur. includes Glucose, Liquid and Glucose, Liquid, Spray-dried. *USNF* includes Dextrose Excipient, Liquid Glucose, and Corn Syrup Solids.

Ph. Eur. 6.2 (Glucose Monohydrate; Glucose BP 2008). A white or almost white crystalline powder with a sweet taste. Freely soluble in water; sparingly soluble in alcohol.

Ph. Eur. 6.2 (Glucose, Liquid). A clear, colourless, or brown viscous liquid containing a mixture of glucose, oligosaccharides, and polysaccharides obtained by hydrolysis of starch, in aqueous solution. It contains not less than 70.0% of dry matter. Miscible with water. It may partly or totally solidify at room temperature, liquefying again on heating to 50°.

Ph. Eur. 6.2 (Glucose, Liquid, Spray-dried). A white or almost white, slightly hygroscopic powder or granules. Freely soluble in water.

USP 31 (Dextrose). It contains one molecule of water of hydration or is anhydrous. Colourless crystals or white, crystalline or granular powder. It is odourless and has a sweet taste. Soluble 1 in 1 of water and 1 in 100 of alcohol; very soluble in boiling water; soluble in boiling alcohol.

USNF 26 (Dextrose Excipient). A sugar usually obtained by hydrolysis of starch. It contains one molecule of water of hydration. Colourless crystals or white, crystalline or granular powder. Freely soluble in water; very soluble in boiling water; slightly soluble in alcohol; sparingly soluble in boiling alcohol.

USNF 26 (Liquid Glucose). It is obtained by incomplete hydrol-