

**Tardive dyskinesia.** In a double-blind, controlled, crossover study, daily oral doses of vitamin B<sub>6</sub> 1.2 g effectively reduced the symptoms of tardive dyskinesia (see Extrapyramidal Disorders, p.971).

1. Lerner V, et al. Vitamin B treatment for tardive dyskinesia: a randomized, double-blind, placebo-controlled, crossover study. *J Clin Psychiatry* 2007; **68**: 1648–54.

## Preparations

**BP 2008:** Pyridoxine Tablets; Vitamins B and C Injection;

**BPC 1973:** Strong Compound Vitamin B Tablets;

**USP 31:** Pyridoxine Hydrochloride Injection; Pyridoxine Hydrochloride Tablets.

**Proprietary Preparations** (details are given in Part 3)

**Arg.:** Benadon; **Austral.:** Pyroxin; **Austria:** Diclo-B; **Belg.:** Bedoxine; **Braz.:** Dimedril†; Finto-Vit B6; Neuri B6; Seis-B; **Canad.:** Carthamec; **Chile:** Metadoxil†; Vitabe; **Fin.:** Heksavit; Vita-B6; **Fr.:** Becilan; Dermo 6; **Ger.:** B6-ASmedic; B. Vicotrat; Bonasanit; Hexobion; **Gr.:** Besix; **Hung.:** Beres B6; Metadoxil; **India:** Pyricontin; **Indon.:** Liconam; Stopmun; **Irl.:** Comploment Continus; **Israel:** Anacrodine; B-Six; **Ital.:** Benadon; Memosprint†; Metadoxil; Xanturensia; **Mex.:** Abrinoxine; Fortical; Metasin; Valparina; **Philipp.:** Drexabion; Hybutin; Jaga; Lixtress; Magenerv; Nervafil; Nervilan; Neuro-B's; Neuroboxol; Neurobion; Neurolink; Polynerv; Supraneuron; Vineuron; **Port.:** Benadon; Metadoxil†; **Rus.:** Metadoxil (Метадоксил); **S.Afr.:** Beesix; Lactosec; **Spain:** Benadon; Conductas; Godabion B6†; **Swed.:** Benadon; **Switz.:** Comploment Continus†; **Thai.:** B-6; Metadoxil; **Turk.:** B Vigen; Libavit B; Postadoxine; **USA:** Vitelle Nestrest†; **Venez.:** Benadon†; Beplus; Biprin; Clodoxin; Suprabion; Vibrant†.

**Multi-ingredient. Arg.:** 6 Copin; Algio Nervomax; Algio Nervomax Fuerte; Blastop; Butineuron; Cadencial Plus; Calcimac Magnesium; Centella Incaico; Cobenexol Forte; Cobenexol Fuerte; CVP B1 B6 B12; Dexamion; Dolo Nervobion; Dolo Nervobion 10000; Dorixina B1 B6 B12; Flexicam B12; Flogiatrin B12; Holomagnesio B6; KLB6 Fruit Diet; Klosidol B1 B6 B12; Lohp; Magnebe; Megacistin; Megapuls; Nervobion Fuerte; Nervomax TB12; Neuronal Vasculat; Plenovit Melatonina; Presterin; QX 10; Sindrolen†; Total Magnesiano B6; **Austral.:** Bio Magnesium; Extralife Flow-Care; Extralife Fluid-Care; Extralife PMS-Care; Extralife Uric-Care; Liv-Detox†; Mag-Oro; Medinat PMT-Ezet†; Zinc Zenith; **Austria:** Arca-Be; Aslavital; Astronauta; Beneruan compositum; Beneruan Vit B-Komplex†; Contravert B; Diclovit; Dolo-Neurobion; Echnatol B; Neurobion; Neuromerck; Neuromultivit; Pronerv; Signalin B; Signalin B forte; Signalin B ohne Coffein; Vertrosan Vitamin B; **Belg.:** Betapyr; Neurobion; Vioneurin†; **Braz.:** Alergo Filinal; Aminocid†; Aminotox†; Anekron; Benistina†; Betaliver†; Bicavine; Biohepax; Bronquitos; Cianotrat-Dexa; Citoneurin; Dexa-Citoneurin; Dexa-Cronob; Dexa-Neuriber†; Dexamobal; Dexamor; Dexamoz; Dexamag; Dexamneurin; Dexamneur†; Diagrinf; Doxal; Dramavit B6†; Dramin B-6; Dramin B-6 DL; Emetrol†; Enjool†; Epativan; Epocler; Estact†; Gabax; Hepactron†; Hepatobest†; Hepatox; Hormo Hepatico†; Levordiol; Megestran†; Montrean B6; Nausicalm; Nausilon B6; Negro B-6; Nicopaverina B6†; Pantevit; Piagon; Triubrin†; Vitonus; Vominit†; Xantion Complex; **Canad.:** Dialectin; Penta-3B; Penta-3B + C; ProstGard†; **Chile:** Activator; Benovit†; Dololet 12; Ferro Vitaminico; Gamalate B6; Glutacyl Vitaminado; Hexalectol; Nefersil B; Neurobion†; Neurobion; Tol 12; Tol 12 Plus; **Cz.:** Magne-B; Milgamma N; Neuromultivit; **Fin.:** Neurobion; Neurovitin; Wicnecarb; Wicnevit; **Fr.:** Arthrolib; Catarstat; Cysti-Z†; Cystine B; Lyso-6; Magne-B; Phakan†; Uvimag B; **Ger.:** B-Komplex forte; Bevit Forte; Bramin-hepa†; Dolo-Neurobion forte†; Dolo-Neurobion N†; Hepagisevit Forte-N†; Hewedolor-neuro; Medivitan N; Medivitan N Neuro; Medyn; Milgamma; Milgamma NA; Milneuron NA; Neuralsan S†; Neuro; Neuro uno; Neuro-AS N†; neuro-B forte; Neuro-Effektin B; Neuro-Lichtenstein M; Neuro-Lichtenstein N; Neuro-ratiopharm N; Neuro-ratiopharm†; Neuro-Vibolex; Neurobion; Neurobion N; Neurotrat S; Nifurantin B 6; Novirel B Duo; Pleomix-B; Reisesgold†; Telbibur N†; Vitaject†; Vitamin B duo; **Gr.:** Lyso-6; Neurobion; **Hong Kong:** B6; C-3†; Milgamma; Navidoxine; Neuro B1-6-12†; Neurobion; Neuromin; Neurorubine; Nevramin; Princi-B Fort; Vibion; Vida Neurotab; Vidaclofen-Plus; **Hung.:** Athorvit; Beres Magnesium + B; Magne-B; Maguril†; Milgamma N; Neurobion; Pregmag; Vitacalc†; **India:** Biogen; Convion-TR; Cx-3; Cx-4; Cx-5; Dioxinate; Etemex; Gocox; Compound; Gocox-4†; Ipcacin Kid; Ipcazine; Iso-kin-300; Rifa; Rifa E; Sclerobion; Soneuron; Viturum; Vominit†; Wokex-2; Wokex-3; Wokex-4; **Indon.:** Abajos; Anvomer B6; Arinal; Avogin; Betrión; Bicitron; Biocombin; Biomega; Biomec; Corobion; Corsaneuron; Daneuron; Deprex; Dolo Scanneuron; Dolo-Licobion; Dolo-Neurobion; Dolofenac; Dramasine; Farbion; Foraneural; Fundamin-E; Goralgin; Ikanuron; Ikanuron Plus; Laphibion; Licobion; Mediamer B6; Mersibion†; Myoviton; Nervitone; Nervitone E; Neuralgin RX; Neuro Panstop; Neuro-Beston; Neurobat; Neurobat A; Neurobion; Neurobiovit; Neurodex; Neurohax; Neurophil; Neuropyramin; Neurosanbe; Neurosanbe Plus; Neurotrat; Neurotropic Plus; Neurovit E; Nevradin; Nevramin; Penagon; Ponconeuron; Pregnasea; Pregvomit; Primabion; Pritagesc; Scanneuron; Sobobion; Solaneuron; Stileran; Tobocion; Trimate-E; Tropineuron; Vitap; Vomilat; **Israel:** Calmanervin; Tribemin; Tricardia; **Ital.:** Acutil Fosforo; Adenoplex; Adenovit†; Alcalosio; Benexol B12; Coxanturensia; Dobetin Totale; Emoantiossina†; Esaglut†; Fosforilasi; Miazide B6†; Midium; Mionevasi; Neurauben; Sedofit; Trinevrina B6; **Jpn.:** Neurovit†; **Malaysia:** B6; Becoloxin†; Flavettes Neuroforte; Fundamin-E; Navidoxine†; Neuro B†; Neurobion; Neurobion; Neurovit†; Nevramin; Princi-B Fort; Re-B; Vitabion; **Mex.:** Ariflam Fortine; Benexol B12; Betrox; Bomine; Bonadoxina; Bonalin; Bonazin; Cobotiixina; Dexamion; Diodovith-B; Dodemina Tri; Dolo-Neurobion; Dolo-Pangavit; Dolo-Tiaminal; Doxemina; Ducidon; Emediba; Forvin; Innobion; Licifar-K†; Liatriz; Macroxx-5; Medifar; Medison; Neuralin; Neurobion; Nuro-B; Odexan; Pangavit B; Pangavit Hyapak; Pangavit Pediatrico; Pidoxina; Revitaliv-C; Selectadoce; Suma-B; Tiaminal B Trivalente; Tribedece; Tribedece Compuesto; Tribedoxyl†; Trineurovita; Trineurovita Compuesto; Uni-Dox; Vo-Remi; **Neth.:** Emesafene; Neurobion; Princi B1 + B6; **Philipp.:** Catarstat; Dolo-Neurobion; Godex; Hinuron-E; Meganerv F-A; Neuroforte-E; Nevramin; Nuron-E; Vitanerv; **Pol.:** Filomag B; Maglek B; Magne-B; Magnefar B; Magsolvit B; Magvit B; MBE; Milgamma N; Slow-Mag B; **Port.:** Detoxeragon; Esclerobion; Linamin Plus†; Nausefa; Neurobion; Phakan†; **Rus.:** Lyso-bact (Лизобакт); Magne B6 (Марне B6); Milgamma (Мильгамма); Neuro-multivit (Нейромультивит); Vectrum Calcium (Вектрум Кальций); **S.Afr.:** Asic; Neurobion; Vomifene; **Singapore:** Daneuron; Navidoxine†; Neurobion; Neurodex; Neuroforte; Neurorubine; Neurovit; Neuroxel; Nevramin; Princi-B Fort; **Spain:** Acetuber; Aftasone B C; Agudil; Antineurina; Benexol B1 B6 B12; Bester Complex; Biodramina Cafeina; Cariban; Cefabiol; Dalamon†; Dorken; Duplicalcio 150†; Gamalate B6; Hidroxol B12 B6 B1; Mederebro; Menalgil B6; Nervobion; Neuroamide; Neurostop Complex; Nucleserina; Pazbronguial; Pleocortex B6†; Quimpedro; Redutona; Sirodin†; Taurobetina†; Tepazepan; **Swed.:** Neurobion; **Switz.:** Acne Gel; Antemion compositum; Benexol B12; Catarstat; Itinerol B; Linervidol†; Lyso-6†; Neuro-rubini; Phakolent†; Suracton†; Travell compositum; Trilagavit; **Thai.:** 3B; B-100 Complex; Beromin; Cydoxime-B†; Cyramine; Douzabox; Ferli-6; Ferlos; Genavit; Hemolax; Neube; Neurohex; Neurobion; Nevramin; Neuro-

B; Nuvit; Princi-B; Re-B Forte; Roxine; Tribesian; Tricortin†; Trivit-B; Vita-B; Vitabion; Vitamedin†; Vitron; **Turk.:** Benexol; Benol; Benoral; Bevitab; Bevit-it; Nerox-B; Neurogriseovit; Neurovit; Tribeksol; **UAE.:** 3V; **UK:** HealthAid Boldo-Plus; Kelp Plus 3; **USA:** Beelith; Cerefolin; FOLTX; KLB6; Lurline PMS; Marilyn Formula 50; Metanx; PremesisRx; Release for PMS; **Venez.:** Bedoxyeta; Bonadoxina; Bionex; Deca-Lentemina Complex; Dermagran; Dobetin Compuesto; Etizet†; Licivar Plus; Lentermina Complex; Meba-x†; Mega-Neubion; Miovit; Neubion; Neumber; Rubrinol; Rubrinex; Tres-Ba.

Used as an adjunct in: **Ger.:** Isozid comp N; tebesium; **India:** Rifacomb†; **Indon.:** bacbutINH; Erabutol Plus; INH-Ciba; INHA; Innoxin; Medinh-OD; Meditam-6; Mycothambin-INH; Niacifort-6; Niazitol; Pulmolin; Pulna; Pyrav-it; Pyrifort; Santsi Plus; Suprazid; TB Vit 6; **Ital.:** Etanicocid B6; **Philipp.:** CombiKids; Complex; Curazid (Reformulated); Ethamizid; Ethi 400; Euro-cocin; Isodexid; Isoxin; Kidz Kit 2; Kidz Kit 3; Nicetal; Odinah; Refam Duo; Refam Pedia Kit; Sthamizide; SVM-Polypac-A; Techxafort; Terozid; Vamsoxid; **Pol.:** Laktomag B; **Rus.:** Isocomb (Изокомб); Lomecomb (Ломекомб); Protiocomb (Протиокомб); Resin B (Резин В); Rifacomb (Рифакомб); **Spain:** Cemidon B6; Tisobif; **Turk.:** Isovit.

## Vitamin B<sub>12</sub> Substances

Vitamina B<sub>12</sub>.

Vitamin B<sub>12</sub> is the name generally used for a group of related cobalt-containing compounds, also known as cobalamins, of which cyanocobalamin and hydroxocobalamin are the principal forms in clinical use.

### Cobamamide (pINN)

Adenosylcobalamin; Cobamamida; Cobamamidum; Coenzyme B<sub>12</sub>; Dibenzocid; Dibenzozamide; Dimebenzozamide; Kobamamid. Inner salt of the Co-(5'-deoxyadenosine-5') derivative of the 3'-ester of cobinamide phosphate with 5,6-dimethyl-1- $\alpha$ -D-ribofuranosylbenzimidazole.

Кобамамид

C<sub>77</sub>H<sub>100</sub>CoN<sub>18</sub>O<sub>17</sub>P = 1579.6.

CAS — 13870-90-1.

ATC — B03BA04.

ATC Vet — QB03BA04.

### Pharmacopoeias. In Chin.

### Cyanocobalamin (BAN, rINN)

Cianocobalamina; Cianokobalamin; Cianokobalamini; Cobamini; Cyanocobalamine; Cyanocobalaminum; Cyanokobalamin; Cycobemini; Cyjanokobalamina; Kyanokobalamin; Siyanokobalamin; Syanokobalamin. Coa-[ $\alpha$ -(5,6-Dimethylbenzimidazolyl)]-Co $\beta$ -cyanocobamide.

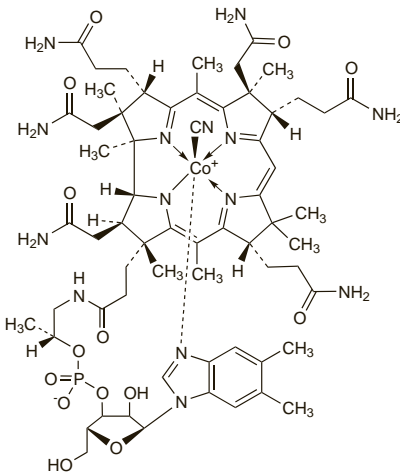
Цианокобаламин

C<sub>63</sub>H<sub>88</sub>CoN<sub>14</sub>O<sub>14</sub>P = 1355.4.

CAS — 68-19-9.

ATC — B03BA01.

ATC Vet — QB03BA01.



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

**Ph. Eur. 6.2** (Cyanocobalamin). A dark red, crystalline powder or dark red crystals. The anhydrous substance is very hygroscopic. Sparingly soluble in water and in alcohol; practically insoluble in acetone. Store in airtight containers. Protect from light.

**USP 31** (Cyanocobalamin). Dark red crystals or amorphous or crystalline red powder. In the anhydrous form it is very hygroscopic and when exposed to air it may absorb about 12% of water. Soluble 1 in 80 of water; soluble in alcohol; insoluble in acetone, in chloroform, and in ether. Store in airtight containers. Protect from light.

### Hydroxocobalamin (BAN, USAN, rINN)

Hidroksokobalamin; Hidroxocobalamina; Hidroksikobalamini; Hidroxikobalamin; Hidroxocobalamine; Hidroxocobalaminum; Hidroxocobalaminum; Idrossocobalamina. Coa-[ $\alpha$ -(5,6-Dimethylbenzimidazolyl)]-Co $\beta$ -hydroxocobamide.

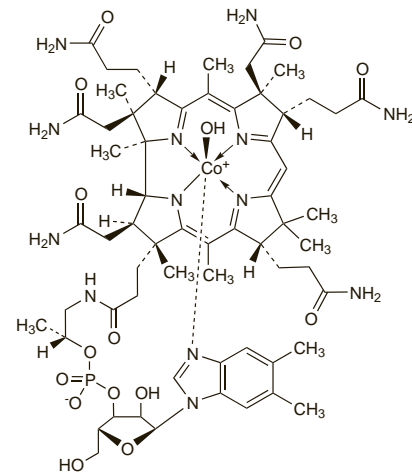
Гидрококобаламин

C<sub>62</sub>H<sub>89</sub>CoN<sub>13</sub>O<sub>15</sub>P = 1346.4.

CAS — 13422-51-0.

ATC — B03BA03; V03AB33.

ATC Vet — QB03BA03; QV03AB33.



NOTE. The hydrated form of hydroxocobalamin has been referred to as aquocobalamin.

### Pharmacopoeias. In Int. and US.

**USP 31** (Hydroxocobalamin). Dark red crystals or red crystalline powder. Is odourless or has not more than a slight acetone odour. The anhydrous form is very hygroscopic. Soluble 1 in 50 of water and 1 in 100 of alcohol; practically insoluble in acetone, in chloroform, in ether, and in benzene; sparingly soluble in methyl alcohol. pH of a 2% solution in water is between 8.0 and 10.0. Store in airtight containers at a temperature of 8° to 15°. Protect from light.

### Hydroxocobalamin Acetate (BANM, rINNM)

Acetato de hidroxocobalamina; Acetatocobalamin; Hidroksokobalaminum acetatas; Hidroxokobalamin-acetát; Hidroksokobalaminacetat; Hidroxocobalamin acetate d; Hydroxocobalamin acetat; Hidroxokobalamin acetat; Hidroxokobalaminacetat.

Гидрококобаламина Ацетат

C<sub>64</sub>H<sub>93</sub>CoN<sub>13</sub>O<sub>17</sub>P = 1406.4.

CAS — 22465-48-1.

### Pharmacopoeias. In Eur. (see p.vii), Jpn, and Viet.

**Ph. Eur. 6.2** (Hydroxocobalamin Acetate). A dark red, very hygroscopic, crystalline powder or dark red crystals. Soluble in water. Some decomposition may occur on drying. Store at a temperature between 2° and 8° in airtight containers. Protect from light.

### Hydroxocobalamin Chloride (BANM, rINNM)

Cloruro de hidroxocobalamina; Hidroksokobalaminum chloridas; Hidroxokobalamin-klorid; Hidroksokobalaminiklorid; Hidroxocobalamin, chloride d; Hidroxocobalamin chloridum; Hidroxocobalamin Hydrochloridum; Hidroxokobalamin hydrochlorid; Hidroxokobalaminiklorid.

Гидрококобаламина Хлорид

C<sub>62</sub>H<sub>90</sub>ClCoN<sub>13</sub>O<sub>15</sub>P = 1382.8.

### Pharmacopoeias. In Eur. (see p.vii), Int., and Viet.

**Ph. Eur. 6.2** (Hydroxocobalamin Chloride). A dark red, very hygroscopic, crystalline powder or dark red crystals. Soluble in water. Some decomposition may occur on drying. Store at a temperature between 2° and 8° in airtight containers. Protect from light.

### Hydroxocobalamin Sulfate (BANM, rINNM)

Hidroksokobalaminum sulfatas; Hidroxokobalamin-szulfát; Hidroksokobalaminisulfat; Hidroxocobalamin Sulphate; Hidroxocobalamin, sulfate d; Hidroxocobalaminisulfas; Hydroxocobalamin sulfát; Hidroxokobalaminisulfat; Sulfato de hidroxocobalamina.

Гидрококобаламина Сульфат

C<sub>124</sub>H<sub>180</sub>Co<sub>2</sub>N<sub>26</sub>O<sub>34</sub>P<sub>2</sub>S = 2790.8.