Annex I

COMMISSION
OF THE EUROPEAN
COMMUNITIES

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Annex 2

Directorate-General
for internal market and industrial affairs

Committee for Proprietary Medicinal Products

Listing of herbs and herbal derivatives withdrawn for safety reasons

Herbal drugs with serious risks

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Herbal drugs with serious risks without any accepted benefit (Not acceptable for revision)

Aconitum all species
parts: all parts
reason: contains aconitine and other toxic alkaloids, benefit not proven.

Angelica archangelica L.
parts: fruit, herb
reason: contains phototoxic furanocumarins, benefit not proven

Aristolochia all species
parts: all parts
reason: contains aristolochic acids, strong carcinogen, genotoxicity, benefit not proven

Artemisia cina (BERG.) WILLKOMM.
parts: Flower-bud
reason: contains the toxic lactone santonin benefit/risk negative

Berberis vulgaris L.
parts: bark, root bark, root
reason: contains the alkaloid berberine

Borago officinalis
parts: herb, flowers
reason: contains pyrrolizidine-alkaloids with genotoxic, carcinogenic and hepatotoxic properties

Bryonia all species
parts: root
reason: cytotoxic cucurbitacines, drastic laxative and emetic

Chenopodium ambrosioides L. var. anthelminthicum (L.) A.GRAY
parts: essential oil
reason: contains the toxic principle ascaridole, benefit/risk negative

Chrysanthemum vulgare (L.) BERNH.
parts: flower, herb
reason: may contain essential oil with the neurotoxic thujone

Citrullus colocynthis (L.) SCHRAD.
parts: fruit
reason: contains cytotoxic cucurbitacines drastic laxative

Claviceps purpurea (FR.) TULASNE
parts: Secale cornutum (Sclerotium)
reason: contains toxic ergot-alkaloids. Benefit/risk negative.

Convolvulus scammonia L.
parts: Resin
reason: drastic laxative with irritant properties

Croton tiglium L.
parts: seed, fatty oil from seed
reason: drastic laxative,
contains tumor-promoting phorbol diesters

Cynoglossum officinale L.
parts: herb
reason: contains pyrrolizidine-alkaloids with genotoxic, carcinogenic and hepatotoxic properties

Dryopteris filix mas (L.) SCHOTT
parts: rhizome
reason: the constituents drug are highly toxic, severe intoxications may occur when absorption is increased, benefit/risk is negative

Exogonium purga (WEND) BENTH.
parts: root, resin
reason: drastic laxative with irritant action

Juglans regia L.
parts: Fruit-shell
reason: may contain the naphtoquinone juglone which is mutagenic and possibly carcinogenic.
No benefit proven.

Juniperus sabina L.
parts: herb
reason: toxic herb, no benefit proven

Ledum palstre L.
parts: herb
reason: contains essential oil which is a potent irritant of the GI-tract, kidneys and urinary tract.
No benefit proven

Mallotus phillipinensis (LAM.)MÜLLER-ARG.
parts: gland and trichomes (Kamala)
reason: drastic laxative which may cause severe gastroenteritis, diarrhoea and vomiting when taken in higher dosages; benefit/risk negative

Ocimum basilicum L.
parts: essential oil
reason: contains high amounts of estragole which is genotoxic and a carcinogen in rodents. No benefit proven

Petasites hybridus (L.) GAERT. MEYER et SCHREB.
parts: leaf
reason: contains pyrrolizidine-alkaloids with genotoxic, carcinogenic and hepatotoxic properties

Petroselinum crispum (MILL.) Nym. ex A.W.HILL
parts: fruit
reason: contains significant amounts of essential oil with toxic apiole. Apiole and the fruits are used for self-induced abortions.

Pulsatilla vulgaris MILLER
parts: herb
reason: higher doses may irritate the kidneys and urinary tract and pregnancy is an absolute contraindication. No benefit proven.

Ruta graveolens L.
parts: herb, leafs
reason: causes phototoxic reactions, genotoxic, the use for self induced abortions resulted in fatal intoxications. No benefit proven.

Rubia tinctorum L.
parts: root
reason: contains lucidin with genotoxic and probably carcinogenic activity. No benefit proven.

Sassafras albidum (NUTT.) NEES
parts: wood, root
reason: contains essential oil with carcinogenic and genotoxic safrole. No benefit proven.

Senecio all species
parts: herb, root
reason: contains pyrrolizidine-alkaloids with genotoxic, carcinogenic and hepatotoxic properties

Strychnos nux-vomica L.
parts: seed
reason: contains alkaloids, especially strychnine. Benefit / risk negative.

Symphytum all species, internal use
parts: herb, leaf, root
reason: contains pyrrolizidine-alkaloids with genotoxic, carcinogenic and hepatotoxic properties. No benefit proven.

Teucrium chamaedris L.
parts: herb
reason: Hepatotoxicity

Tussilago farfara L.
parts: flower, root
reasons: contains pyrrolizidine-alkaloids with genotoxic, carcinogenic and hepatotoxic properties. No benefit proven.

Vinca minor L.
parts: herb, leaf
reason: hematological changes (leucocytopenia, lymphocytopenia, reduced globuline levels) have been observed in rabbits. No benefit proven.

Drugs with toxic principles, where a more detailed discussion concerning the benefit/risk ratio is necessary:

1. Drugs with pyrrolizidine-alkaloids where a use is accepted under special precautions/labelling:

Symphytum officinale L., external use
parts: leafs, herb, root
restrictions: use only on unbroken, intact skin, use during pregnancy requires medical advice, use not longer than 6 weeks per year, temporarily tolerable dose (TTD) 100 µg PA/day

Tussilago farfara L.
parts: leaf
restriction: contraindicated during pregnancy and lactation, use not longer than 6 weeks per year, temporarily tolerable dose (TTD) 1 µg (herbal tea 10µg) PA/day

Petasites hybridus (L.) GAERT. MEYER et SCHREB.
parts: rhizome
restriction: contraindicated during pregnancy and lactation, use not longer than 6 weeks per year, temporarily tolerable dose (TTD) 1 µg (herbal tea 10µg) PA/day

For these drugs a limitation of the toxic principle and a strict definition of the conditions of use is necessary.

A similar approach is necessary for herbal drugs with small amounts of toxic constituents and accepted uses, for example estragole in (sweet) fennel.

2. Drugs with cardiac glycosides

for example:
Adonis vernalis L.
Convallaria maialis L.
Digitalis species
Nerium oleander L.
Urginea maritima (L.) BAKER
Strophanthus species

For these drugs a benefit/risk assessment must be done during revision.

3. Drugs with alkaloids

for example:
Atropa belladonna L.
Cephaelis ipecacuanha KARSTEN
Datura stramonium L.
Ephedra sinica STAPF
Hyoscymaus niger
Pausinystalia yohimbé (K.SCHUM.) PIERRE
Rauwolfia serpentina (L.) BENTHAM ex KURZ

For these drugs a benefit/risk assessment must be done during revision.