03 March 2021 EMA/HMPC/7695/2021 Committee on Herbal Medicinal Products (HMPC)

European Union herbal monograph on *Hypericum perforatum* L., herba (well-established and traditional use)

2nd Draft – Revision 1

Initial assessment	
Discussion in Working Party on European Union monographs and list (MLWP)	March 2008 May 2008 July 2008 September 2008 November 2008
Adoption by Committee on Herbal Medicinal Products (HMPC) for release for consultation	6 November 2008
End of consultation (deadline for comments).	15 February 2009
Re-discussion in MLWP	July 2009 September 2009 November 2009
Adoption by Committee on Herbal Medicinal Products (HMPC) Monograph (WEU) (EMA/HMPC/101304/2008) Monograph (TU) (EMEA/HMPC/745582/2009) Assessment report (EMA/HMPC/101303/2008) List of references (EMA/HMPC/101620/2008) Overview of comments received during public consultation (EMA/HMPC/258853/2009) HMPC Opinion (WEU) (EMEA/HMPC/M/H/0063) HMPC Opinion (TU) (EMEA/HMPC/M/H/0066)	12 November 2009



First systematic review	
Discussion in Working Party on Community monographs and list (MLWP)	Apr 2016 Jan 2017 May 2017 Sep 2017 Nov 2017
Adoption of Draft revision 1 (TU) by Committee on Herbal Medicinal Products (HMPC) for release for consultation	30 January 2018
Start of public consultation	8 March 2018
End of consultation (deadline for comments)	15 June 2018
Re-discussion at the HMPC	Sep 2018 Jul 2019 Mar 2020 Jul 2020 Nov 2020 Jan 2021 Mar 2021
Adoption 2 nd Draft revision 1 (WEU + TU) by Committee on Herbal Medicinal Products (HMPC) for release for consultation	3 March 2021 Second consultation
Start of public consultation	31 March 2021 Sec- ond consultation
End of consultation (deadline for comments). Comments should be provided using this <u>template</u> to <u>hmpc.secretariat@ema.europa.eu</u>	30 June 2021

Keywords	Herbal medicinal products; HMPC; European Union herbal monographs; well-
	established use; traditional use; <i>Hypericum perforatum</i> L., herba; Hyperici
	herba; St. John's wort

BG (bălgarski): Жълт кантарион, стрък

CS (čeština): třezalková nať

DA (dansk): Perikon

DE (Deutsch): Johanniskraut

EL (elliniká): πόα υπερικού- υπερικόν

EN (English): st. john's wort

ES (espanol): hipérico, sumidad de

ET (eesti keel): naistepunaürt

FI (suomi): mäkikuisma, verso

FR (français): millepertuis (sommité fleurie de)

HR (hrvatski): zelen gospine trave

HU (magyar): orbáncfű

IT (italiano): Iperico sommità fiorite

LT (lietuvių kalba): Jonažolių žolė LV (latviešu valoda): Asinszāles laksti

MT (malti): fexfiex

NL (nederlands): Sint Janskruid PL (polski): Ziele dziurawca PT (português): hipericão

RO (română): iarbă de sunătoare SK (slovenčina): Vňať ľubovníka SL (slovenščina): zel šentjanževke SV (svenska): johannesört, ört

IS (íslenska):

NO (norsk): prikkperikum, johannesurt

European Union herbal monograph on Hypericum perforatum L., herba (well-established and traditional use)

1. Name of the medicinal product

To be specified for the individual finished product.

2. Qualitative and quantitative composition^{1,2}

Well-established use	Traditional use
With regard to the marketing authorisation application of Article 10(a) of Directive	With regard to the registration application of Article 16d(1) of Directive 2001/83/EC as amended
2001/83/EC as amended	Hypericum perforatum L., herba (St. John's wort)
Hypericum perforatum L., herba (St. John's wort)	i) Herbal substance
i) Herbal substance	Not applicable
Not applicable	ii) Herbal preparations
ii) Herbal preparations ³	a) Dry extract (DER 4-7:1), extraction solvent ethanol 38% (m/m) = 45% V/V
a) Dry extract (DER 3-7:1), extraction solvent methanol (80% V/V)	b) Liquid extract (DER 1:4-20), extraction solvent vegetable oil
b) Dry extract (DER 3-6:1), extraction solvent ethanol (80% V/V)	c) Liquid extract (DER 1:13), extraction solvent maize oil or other suitable vegetable oil
c) Dry extract (DER 2.5-8:1), extraction solvent ethanol (50-68% V/V) ⁴	d) Tincture (ratio herbal substance: extraction solvent 1:10), extraction solvent ethanol 45-50% (V/V)
	e) Liquid extract (DER 1:2-7), extraction solvent ethanol 50% (V/V) ⁵
	f) Expressed juice from the fresh herb (DER 1:0.5-0.9)
	g) Comminuted herbal substance
	h) Powdered herbal substance

¹ The declaration of the active substance for an individual finished product should be in accordance with relevant herbal quality guidance. $^{\rm 2}$ The material complies with the Ph. Eur. monograph (ref.01/2017:1438).

³ The herbal preparations comply with the Ph. Eur. monograph (ref. 01/2017: 1874)

⁴ A narrow range of the DER to be specified for each product

⁵ A narrow DER to be specified for an individual medicinal product.

3. Pharmaceutical form

Well-established use	Traditional use
Herbal preparation in solid dosage forms for oral use.	Comminuted herbal substance as herbal tea for oral use.
The pharmaceutical form should be described by the European Pharmacopoeia full standard	Herbal preparations a, h in solid dosage forms for oral use.
term.	Herbal preparations b, c, d, e, f in liquid dosage forms for oral use.
	Herbal preparations b, d, e in liquid or semi-solid dosage forms for cutaneous use.
	The pharmaceutical form should be described by the European Pharmacopoeia full standard term.

4. Clinical particulars

4.1. Therapeutic indications

Well-established use	Traditional use
Indication 1)	Indication 1)
Herbal preparations a, b:	Herbal preparations a, c, d, e, f, g, h:
Herbal medicinal product for the treatment of mild to moderate depressive episodes (accord-	Traditional herbal medicinal product for the relief of temporary mental exhaustion.
ing to ICD-10).	Indication 2)
Indication 2)	Herbal preparations b, d, e:
Herbal preparation c:	Traditional herbal medicinal product for the symp-
Herbal medicinal product for the short-term treatment of symptoms in mild depressive disorders.	tomatic treatment of minor inflammations of the skin (such as sunburn) and as an aid in healing of minor wounds.
	Indication 3)
	Herbal preparation g:
	Traditional herbal medicinal product for the symptomatic relief of mild gastrointestinal discomfort.
	Indication 4)
	Herbal preparation g:
	Traditional herbal medicinal product for the sup- portive treatment of nervous restlessness and associated with difficulties in falling asleep.
	The product is a traditional herbal medicinal product for use in specified indications exclusively

Well-established use	Traditional use
	based upon long-standing use.

4.2. Posology and method of administration⁶

Well-established use	Traditional use
Posology	Posology
Adults and elderly	Indication 1)
Herbal preparation a):	Adults and Elderly
Single dose: 300-600 mg Dosage frequency: 1-3 times daily Daily dose: 600-1800 mg	Herbal preparation a) Single dose: 60-180 mg Dosage frequency: 2-3 times daily
Herbal preparation b):	Daily dose: 180 - 360 mg
900 mg, once daily	Herbal preparation c)
Herbal preparation c):	Single dose: 200 mg
600 or 612 mg, once daily	Dosage frequency: 3 times daily Daily dose: 600 mg
or	Herbal preparation d)
Single dose: 250-600 mg Dosage frequency: 2-3 times daily Daily dose: 500-1200 mg	Single dose: 2-4 ml Dosage frequency: 3 times daily Daily dose: 6-12 ml
Children, adolescents	Herbal preparation e)
The use in children and adolescents under 18 years of age is not recommended (see section 4.4 'Special warnings and precautions for use').	Single dose: 0.8-1.5 ml Dosage frequency: 3 times daily Daily dose: 2.4-4.5 ml
Duration of use	Herbal preparation f)
Indication 1)	Single dose: 10 – 20 ml
The onset of the effect can be expected within	Dosage frequency: 1-3 times daily Daily dose: 10-30 ml
4 weeks of treatment. If the symptoms persist during the use of the medicinal product, a doc-	Herbal preparation g)
tor should be consulted.	Herbal tea: 1.5 - 2 g of the comminuted
Indication 2)	herbal substance in 150 ml of boiling water as a herbal infusion, 2-3 times daily
6 weeks.	Daily dose: 3-6 g
The onset of the effect can be expected within 4 weeks of treatment. If the symptoms persist during the use of the medicinal product, a doctor should be consulted.	Herbal preparation h) Single dose: 300 – 500 mg Dosage frequency: 2-3 times daily

 $^{^6}$ For guidance on herbal substance/herbal preparation administered as herbal tea or as infusion/decoction/macerate preparation, please refer to the HMPC 'Glossary on herbal teas' (EMA/HMPC/5829/2010 Rev.1).

Well-established use	Traditional use
Method of administration	Daily dose: 900 - 1000 mg
Oral use.	Children, adolescents
	The use in children and adolescents under 18 years of age is not recommended (see section 4.4 'Special warnings and precautions for use').
	Indication 2)
	Adolescents, adults, elderly
	Herbal preparation b:
	Cutaneous administration of the undiluted herbal preparation
	Herbal preparations d, e:
	Cutaneous administration of the undiluted or diluted herbal preparation
	Children
	The use in children under 12 years of age is not recommended (see section 4.4 'Special warnings and precautions for use').
	Indication 3)
	Adults, elderly
	Herbal preparation g:
	Herbal tea: 2 g of the comminuted herbal substance in 150 ml of boiling water as a herbal infusion, 2 times daily
	Children, adolescents
	The use in children and adolescents under 18 years of age is not recommended (see section 4.4 'Special warnings and precautions for use').
	Indication 4)
	Adults, elderly
	Herbal preparation g:
	Herbal tea: 2-3 g of the comminuted herbal substance in 150 ml of boiling water as a herbal infusion, 2 times daily
	Children, adolescents
	The use in children and adolescents under 18 years of age is not recommended (see section 4.4

Well-established use	Traditional use
	'Special warnings and precautions for use').
	Duration of use
	Indications 1) and 4)
	If the symptoms persist longer than 2 weeks during the use of the medicinal product, a doctor or a qualified health care practitioner should be consulted.
	Indications 2) and 3)
	If the symptoms persist longer than 1 week during the use of the medicinal product, a doctor or a qualified health care practitioner should be consulted. Method of administration
	Indications 1), 3) and 4)
	Oral use
	Indication 2)
	Cutaneous use

4.3. Contraindications

Well-established use	Traditional use
Hypersensitivity to the active substance.	Daily dose of hyperforin ≤ 1 mg:
Concomitant use with cyclosporine, tacrolimus	Hypersensitivity to the active substance.
for systemic use, amprenavir, indinavir and other protease inhibitors in the treatment of	Daily dose of hyperforin > 1 mg:
HIV infection, irinotecan, imatinib and other	Hypersensitivity to the active substance.
cytostatic agents and warfarin (see section 4.5 'Interactions with other medicinal products and other forms of interaction').	Concomitant use with cyclosporine, tacrolimus for systemic use, amprenavir, indinavir and other protease inhibitors in the treatment of HIV infection, irinotecan, imatinib and other cytostatic agents and warfarin (see section 4.5 'Interactions with other medicinal products and other forms of interaction').

4.4. Special warnings and precautions for use

Well-established use	Traditional use
Indications 1) and 2)	Indications 1), 3) and 4)
During the treatment intense UV-exposure should be avoided.	During the treatment intense UV-exposure should be avoided.
Since no sufficient data are available, the use	Since no sufficient data are available the use in

Well-established use	Traditional use
in children and adolescents under 18 years of age is not recommended.	children and adolescents under 18 years of age is not recommended.
	Indication 2)
	During the treatment intense UV-exposure of the respective skin areas should be avoided.
	Since no data on the safe use in children are available, the use in children under 12 years of age is not recommended.
	If signs of skin infections are observed, a doctor or a qualified healthcare practitioner should be consulted.
	Indications 1) and 2)
	For herbal preparations containing ethanol, the appropriate labelling for ethanol, taken from the 'Guideline on excipients in the label and package leaflet of medicinal products for human use', must be included.

4.5. Interactions with other medicinal products and other forms of interaction⁷

Well-established use	Traditional use
Pharmacokinetic interactions:	Indications 1), 3) and 4)
Hypericum dry extract induces the activity of	Daily dose of hyperforin $\leq 1 \text{ mg}$:
CYP3A4, CYP2C9, CYP2C19 and P-glycoprotein. The concomitant use of cyclosporine, tacrolimus for systemic use, amprenavir, indinavir and other protease inhibitors, irinotecan and warfarin is contraindicated (see section 4.3. 'Contraindications').	In the case of a daily intake of hyperforin less than 1 mg and of a duration of use not longer than 2 weeks (see section 4.2. 'Posology and method of administration'), no clinically relevant interactions are to be expected.
Special care should be taken in case of concomitant use of all drug substances the metabolism of which is influenced by CYP3A4,	Patients taking other medicines on prescription should consult a doctor or pharmacist before taking <i>Hypericum</i> .
CYP2C9, CYP2C19 or P-glycoprotein (e.g., ami-	Daily dose of hyperforin > 1 mg:
triptyline, fexofenadine, benzodiazepines, methadone, simvastatin, digoxin, finasteride),	Pharmacokinetic interactions:
because a reduction of plasma concentrations	Hypericum dry extract induces the activity of
is possible.	CYP3A4, CYP2C9, CYP2C19 and P-glycoprotein.
The reduction of plasma concentrations of	The concomitant use of cyclosporine, tacrolimus
hormonal contraceptives may lead to increased	for systemic use, amprenavir, indinavir and other
intermenstrual bleeding and reduced safety in	protease inhibitors, irinotecan and warfarin is
missing and reduced surely in	contraindicated (see section 4.3. 'Contraindica-

 $^{^{7}}$ For a list of drugs interacting with herbal preparations of Hyperici herba see the assessment report chapter 5.5.4

Well-established use

birth control. Women using hormonal contraceptives should take additional contraceptive measures.

Prior to elective surgery possible interactions with products used during general and regional anaesthesia should be identified. If necessary, the herbal medicinal product should be discontinued.

The elevated enzyme activity returns within 1 week after cessation to normal level.

Pharmacodynamic interactions:

Hypericum dry extract may contribute to serotonergic effects when combined with antidepressants such as serotonin reuptake inhibitors (e.g. sertraline, paroxetine, nefazodone), buspirone or with triptans. Very rarely undesired effects (serotonine syndrome) with autonomic dysfunctions (such as perspiration, tachycardia, diarrhoea, fever), mental alterations (such as agitation, disorientation), and motor alterations (such as tremor or myoclonias) can occur in combination with serotoninuptake inhibitors or other serotonergic active substances.

Patients taking other medicines on prescription should consult a doctor or pharmacist before taking *Hypericum*.

Traditional use

tions').

Special care should be taken in case of concomitant use of all drug substances the metabolism of which is influenced by CYP3A4, CYP2C9, CYP2C19 or P-glycoprotein (e.g., amitriptyline, fexofenadine, benzodiazepines, methadone, simvastatin, digoxin, finasteride), because a reduction of plasma concentrations is possible.

The reduction of plasma concentrations of hormonal contraceptives may lead to increased intermenstrual bleeding and reduced safety in birth control. Women using hormonal contraceptives should take additional contraceptive measures.

Prior to elective surgery possible interactions with products used during general and regional anaesthesia should be identified. If necessary, the herbal medicinal product should be discontinued.

The elevated enzyme activity returns within 1 week after cessation to normal level.

Pharmacodynamic interactions:

Hypericum dry extract may contribute to serotonergic effects when combined with antidepressants such as serotonin reuptake inhibitors (e.g. sertraline, paroxetine, nefazodone), buspirone or with triptans. Very rarely undesired effects (serotonine syndrome) with autonomic dysfunctions (such as perspiration, tachycardia, diarrhoea, fever), mental alterations (such as agitation, disorientation), and motor alterations (such as tremor or myoclonias) can occur in combination with serotonin-uptake inhibitors or other serotonergic active substances.

Patients taking other medicines on prescription should consult a doctor or pharmacist before taking *Hypericum*.

Indication 2)

None reported

4.6. Fertility, pregnancy and lactation

Well-established use	Traditional use
Safety during pregnancy and breast-feeding	Safety during pregnancy and breast-feeding has
has not been established. Studies in animals	not been established. Studies in animals have

Well-established use	Traditional use
have shown signs of reproductive toxicity (see section 5.3 'Preclinical safety data').	shown signs of reproductive toxicity (see section 5.3 'Preclinical safety data').
The use is not recommended during pregnancy and lactation.	The use is not recommended during pregnancy and lactation.
No fertility data available.	No fertility data available.

4.7. Effects on ability to drive and use machines

Well-established use	Traditional use
No adequate studies on the effect on the ability to drive and use machines have been performed.	Indications 1), 3) and 4) No adequate studies on the effect on the ability to drive and use machines have been performed.
	Indication 2) Not relevant

4.8. Undesirable effects

Well-established use	Traditional use
Gastrointestinal disorders (such as nausea, abdominal pain and diarrhoea), allergic skin reactions, fatigue and restlessness may occur. The frequency is not known. Fair-skinned individuals may react with dysesthesia (e.g. tingling, sensitivity cold or pain, burning sensation) and intensified sunburn-like symptoms under intense sunlight. If other adverse reactions not mentioned above occur, a doctor or a pharmacist should be consulted.	Indications 1), 3) and 4) Gastrointestinal disorders (such as nausea, abdominal pain and diarrhoea), allergic skin reactions, fatigue and restlessness may occur. The frequency is not known. Fair-skinned individuals may react with dysesthesia (e.g. tingling, sensitivity cold or pain, burning sensation) and intensified sunburn-like symptoms under intense sunlight. If other adverse reactions not mentioned above occur, a doctor or a qualified health care practitioner should be consulted. Indication 2) Skin reactions may occur. The frequency is not known. If other adverse reactions not mentioned above occur, a doctor or a qualified health care practitioner should be consulted.

4.9. Overdose

Well-established use Traditional use	
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Well-established use	Traditional use
After the intake of up to 4.5 g dry extract per day for 2 weeks and additionally 15 g dry extract just before hospitalisation seizures and confusion have been reported. After ingestion of massive overdoses, the patient should be protected from sunlight and other UV-light sources for 1-2 weeks.	Indications 1), 3) and 4) After the intake of up to 4.5 g dry extract per day for 2 weeks and additionally 15 g dry extract just before hospitalisation seizures and confusion have been reported. After ingestion of massive overdoses, the patient should be protected from sunlight and other UV-light sources for 1-2 weeks. Indication 2) No case of overdose has been reported.

5. Pharmacological properties

5.1. Pharmacodynamic properties

Well-established use	Traditional use
Pharmacotherapeutic group: Other antidepressants	Not required as per Article 16c(1)(a)(iii) of Directive 2001/83/EC as amended.
ATC code: N06AX	
Hypericum dry extract inhibits the synaptoso-	
mal uptake of the neurotransmitters noradren-	
aline, serotonine and dopamine. Napthodian-	
thrones (e.g. hypericin, pseudohypericin),	
phloroglucin derivatives (e.g. hyperforin) and	
flavonoids contribute to the activity.	

5.2. Pharmacokinetic properties

Well-established use	Traditional use
The absorption of hypericin is delayed and	Daily dose of hyperforin ≤ 1 mg:
starts about 2 hours after administration. The elimination half-life of hypericin is about 20 hours, the mean residence time about 30	Not required as per Article 16c(1)(a)(iii) of Directive 2001/83/EC as amended.
hours.	Daily dose of hyperforin > 1 mg:
Maximum hyperforin levels are reached about	The absorption of hypericin is delayed and starts
3-4 hours after administration; no accumulation could be detected. Hyperforin and the	about 2 hours after administration. The elimination half-life of hypericin is about 20 hours, the
flavonoid miquelianin can cross the blood-	mean residence time about 30 hours.
brain-barrier.	Maximum hyperforin levels are reached about 3-4
Hyperforin induces the activity of the metabolic	hours after administration; no accumulation could
enzymes CYP3A4, CYP2C9, CYP2C19 and PGP	be detected. Hyperforin and the flavonoid mi-
dose-dependently via activation of the PXR	

Well-established use	Traditional use
system. Therefore, the elimination of other drug substances may be accelerated, resulting in decreased plasma concentrations.	quelianin can cross the blood-brain-barrier. Hyperforin induces the activity of the metabolic enzymes CYP3A4, CYP2C9, CYP2C19 and PGP dose-dependently via activation of the PXR system. Therefore, the elimination of other drug substances may be accelerated, resulting in decreased plasma concentrations.

5.3. Preclinical safety data

Well-established use	Traditional use
Studies on acute toxicity and repeated dose toxicity did not show signs of toxic effects.	Studies on acute toxicity and repeated dose toxicity did not show signs of toxic effects.
The weak positive results of an ethanolic extract in the AMES-test (Salmonella typhimurium TA 98 and TA 100, with and without metabolic activation) could be assigned to quercetin and are irrelevant to human safety. No signs of mutagenicity could be detected in further <i>invitro</i> and <i>in-vivo</i> test systems.	The weak positive results of an ethanolic extract in the AMES-test (Salmonella typhimurium TA 98 and TA 100, with and without metabolic activation) could be assigned to quercetin and are irrelevant to human safety. No signs of mutagenicity could be detected in further <i>in-vitro</i> and <i>in-vivo</i> test systems.
Several studies on extracts of and isolated compounds from <i>Hypericum perforatum</i> report <i>in- vitro</i> and <i>in-vivo</i> effects that could affect the development of fetuses from treated mothers. Tests on the carcinogenic potential have not been published.	Several studies on extracts of and isolated compounds from <i>Hypericum perforatum</i> report <i>in-vitro</i> and <i>in-vivo</i> effects that could affect the development of fetuses from treated mothers. Tests on the carcinogenic potential have not been performed.
Phototoxicity:	Phototoxicity:
After oral application of dosages of 1800 mg of an extract per day for 15 days the skin sensitivity against UVA was increased, and the minimum dose for pigmentation was significantly reduced. In the recommended dosage, no signs of phototoxicity are reported.	After oral application of dosages of 1800 mg of an extract per day for 15 days the skin sensitivity against UVA was increased, and the minimum dose for pigmentation was significantly reduced. In the recommended dosage, no signs of phototoxicity are reported.

6. Pharmaceutical particulars

Well-established use	Traditional use
Extracts should be quantified with respect to hypericin ⁸ . The amounts of hyperforin and of flavonoids should be declared.	The amounts of hyperforin should be specified in the dossier (see 4.3, 4.5 and 5.2).

 $^{^{8}}$ Ph. Eur. monograph (ref. 07/2015:0765) Herbal Drug Extracts

7. Date of compilation/last revision
03 March 2021