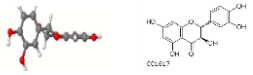
PRODUCT DATA SHEET

Flavitol (Dihydroquercetin) FLAVIT'™

Product name	Marketing name	Production date	Manufacturer	Distributor	Country of origin
DIHYDROQUERCETIN Customs code 2932.99.0090 FDA code: **54YCZ07** CAS 480-18-2	**Flavitol** (**Dihydroquercetin**)	October, 2017	JSC NPF "FLAVIT" www.npf-flavit.ru FDA registered Number: 14000470926	Balinvest Ltd. www.balinvest.lv info@balinvest.lv European Union	RUSSIA

MANUFACTURER: **Joint Stock Company (Non Public), Scientific Production Firm "FLAVIT"** (JSC NPF "FLAVIT")
Address: Institute for Biological Instrumentation of Russian Academy of Sciences (IBI RAS), 7, Institutskaya street, Puschino city, Moscow region, Russian Federation 142290

GENERAL INFORMATION	
Name	DIHYDROQUERCETIN  **Synonyms:** (+)-Dihydroquercetin; (+)-Taxifolin; Taxifolin; trans-Dihydroquercetin; (2R,3R)-Dihydroquercetin; (2R,3R)-3,3',4',5,7-Pentahydroxyflavanone **IUPAC Name:** (2R,3R)-2-(3,4-dihydroxyphenyl)-3,5,7-trihydroxy-2,3-dihydro-4H-chromen-4-one **Systematic Name:** (2*R*,3*R*)-2-(3,4-Dihydroxyphenyl)-3,5,7-trihydroxy-2,3-dihydro-4*H*-1-benzopyran-4-one.
INCI name	Dihydroquercitin
Molecular Formula	C15H12O7
Molecular Weight, g/mol	304.0583
CAS Number	480-18-2 **System Generated Number:** 000480182
EINECS Number	207-543-4
FDA Number	54YCZ07
RTECS	LK6920000
Botanical Source	Not genetically modified plant: *Larch species: L. dahurica* L., *L. gmelinii*, *L. sibirica ledeb.* Used part: sawlogs. Preparation: Spray dried extract
Extraction process	The patented extraction process chain uses food grade ethanol and water as solvents in a multistep process. The purified aqueous extract is spray dried and represents fine, yellowish-colored powder with an aromatic smell and mild bitter taste.
Sterilization	DIHYDROQUERCETIN is not subject of sterilization and radiation
Contact with GMO material	None: Manufacturer does not process any GMO modified material
Long Term Storage:	At +4 ^{0}C up to 20 ^{0}C
Stability	This product is stable for 2 years as manufactured
Handling	Protect from light, store in a dry, cool place

DESCRIPTORS			
Density	1.182142759	**Potential energy (kcal/mol)**	73.8359227
Number of rings	3	**Number of atoms**	34
Chiral atoms	2	**Acidic atoms**	0
H-bond donor	5	**H-bond acceptor**	7
Basic atoms	0	**Aromatic atoms**	12
Heavy atoms	22	**Number of bonds**	36
Single bonds	23	**Rotatable single bonds**	1
Double bonds	0	**Triple bonds**	0
Aromatic bonds	12	**Topological Polar Surface Area**	128
λmax	A solution in *ethanol R* shows an absorption maximum (*2.2.25*) at 290 nm and at 340 nm		

Product Specific References	
Botanical functions	DIHYDROQUERCETIN is a key dihydroflavonol intermediate between FLAVONOLS and FLAVANOLIGNINS. An NADPH-dependent dihydroflavonol 4-reductase catalyses the formation of leucocyanidin (Flavan 3,4-diol) structure.
Product Description	Antioxidant bioflavonoid. Metal chelator. $ORAC_{hydro}$ is over 28,000 μM TE/g
Major uses:	Dihydroquercetin, a yellowish crystalline pentahydroxy-flavanone, occurring in large quantities in Larix species, Douglas fir and Jeffrey pine barks, was found to be an effective antioxidant for lard, cottonseed oil, and butter oil. This compound imparts no taste and color to fats and oils and appears to be nontoxic. Dihydroquercetin is the non-nutrient antioxidant, relating to flavonoids, which occur in food and which may be significant in the overall antioxidative protection afforded by the diet. This benefit may be conferred in three main ways: (1) As antioxidant in food during storage and in the gastrointestinal tract; (2) As antioxidants in the human body; (3) By providing protection in food against oxidation as well as acting as true antioxidant.
Environment	Larch forests growing in Siberia and Russian Far East are recognized to be of very high bio-spheric and ecological importance worldwide. They establish both the southern and the northern timberlines and carry out water- and soil conservation functions in mountain regions as well as being regarded as a large carbon sink. The vast geographical area of *Larix dahurica and Larix sibirica* shows the large ecological plasticity of this species and its high adaptability to the different natural conditions found in the boreal Eurasian zone and in transition to typical temperate forests.
Product Specific Literature References	*Interaction of flavonoids with ascorbate and determination of their univalent redox potentials: a pulse radiolysis study:* W. Bors, et al.; Free Radic. Biol. Med. **19**, 45 (1995) **19,** 45. *Suppression of active oxygen-induced cytotoxicity by flavonoids:* T. Nakayama, et al.; Biochem. Pharmacol. **45**, 265 (1993) *Structure-antioxidant activity relationships of flavonoids and phenolic acids:* C.A. Rice-Evans, et al.; Free Radical Biol. & Med. **20**, 933 (1996), (Review)