FASS

Telfast®

Sanofi AB

Filmdragerad tablett 180 mg
(persikofärgad, kapselformad, präglat 018 på ena sidan och ett tryckt e på den andra)

Antihistamin. H1-antagonist

Aktiv substans:
Fexofenadin

ATC-kod:
R06AX26

Läkemedel från Sanofi AB omfattas av Läkemedelsförsäkringen.

Miljöpåverkan

Fexofenadin

Miljörisk: Användning av fexofenadin har bedömts medföra försumbar risk för miljöpåverkan.
Nedbrytning: Fexofenadin är potentiellt persistent.
Bioackumulering: Fexofenadin har låg potential att bioackumuleras.

Detaljerad miljöinformation

Environmental Risk Classification
Predicted Environmental Concentration (PEC)
PEC is calculated according to the following formula:
PEC (µg/l) = $(A*10^{9}*(100-R))/(365*P*V*D*100) = 1.5*10^{-6}*A*(100-R)$

PEC = 0.12 µg/l

Where:
A = 827.7423 kg (total sold amount API in Sweden year 2015, data from IMS Health)
R = 0% removal rate (due to loss by adsorption to sludge particles, by volatilization, hydrolysis or biodegradation)

P = number of inhabitants in Sweden = $9*10^6$
V (L/day) = volume of wastewater per capita and day = 200 (ECHA default) (Ref I).
D = factor of dilution of waste water by surface water flow = 10 (ECHA default) (Ref I).

Predicted No Effect Concentration (PNEC)
Ecotoxicological studies
Algae (Desmodesmus subspicatus):
EC_{50} 72 h (biomass): >200 000 µg/L
NOEC: 25 000 µg/L
(Protocol: OECD 201)
(Ref II)

Crustacean (Daphnia magna):

Acute toxicity:
EC_{50} 48 h (immobilization): 780 000 µg/L
(Protocol: FDA 4.08/OECD 202)
(Ref III)

Fish (Lepomis macrochirus):

Acute toxicity:
LC_{50} 96 h (mortality): >940 000 µg/l
(Protocol: FDA 4.11/OECD 203)
(Ref IV)

Other ecotoxicity data:

PNEC=200 µg/L

The PNEC (µg/L)= lowest EC_{50}/1000, was calculated using results from the most sensitive toxicity endpoint and an assessment factor of 1000 (At least one short-term L(E)C_{50} from each of three trophic levels of the base set), to add a safety margin to the toxicity endpoint. The most sensitive species was *Desmodesmus subspicatus* for which the EC_{50} 72 h was > 200 000 µg/l.

Environmental Risk Classification (PEC/PNEC ratio)

PEC/PNEC= 0.12/200 = 0.0006

PEC/PNEC ≤ 0.1 which justifies the phrase *"Use of fexofenadin has been considered to result in insignificant environmental risk".*

Degradation
Biotic degradation
Ready biodegradation:
Test showed 0% degradation in 28 days (FDA 3.11/OECD 301)
(Ref V)

Justification of chosen degradation phase:
Fexofenadin fails to pass the criteria for ready biodegradability which justifies the phrase *"Fexofenadin is potentially persistent".*

Bioaccumulation

Partitioning coefficient:
Fexofenadin has low potential for bioaccumulation, as indicated by a log K_{ow} of 0.3 at pH 7 (Test method 1552B).

Description of the method: this protocol is based on a high performance liquid chromatography (HPCL) method. The solutions were prepared according to a ratio of octanol/water 5:1 at 11 different pHs (ranging from 2 to 12). System suitability test was performed to ensure that the chromatographic system was suitable for Fexofenadin assay. After defining the standard curve, samples were run in triplicate and the median area was used to calculate the substance concentration.
(Ref VI)

Excretion (metabolism)

The substance is excreted as 80% as parent compound and only a small fraction as metabolites (Ref VII). Metabolites identified are methyl ester metabolite and inactive metabolite (azacyclonol). The pharmacological activity of the metabolites is not known.

References

I. ECHA, European Chemicals Agency, 2008 Guidance on information requirements and chemical safety assessment.
II. Sanofi, internal report: Growth inhibition test with freshwater algae (*Desmodesmus subspicatus*). OECD 201. Report # PT02-0046. November 2002.
III. Sanofi, internal report: Acute toxicity of MDL 16,455A to *Daphnia magna*. FDA 4.08. Report # 42115. December 1995.
IV. Sanofi, internal report: Static acute toxicity of MDL 16,455A to bluegill (*Lepomis macrochirus*). FDA 4.11. Report # 42116. April 1995.
V. Sanofi, internal report: Aerobic biodegradation of 14C-MDL 16,455A in water. FDA 3.11. Report # 42129. May 1995.
VI. Sanofi, internal report (NDA20-625): Partitioning profile of MDL 16.455A in n-octanol/water. Test Method 1552B. Report #S3-V1.11-P65. April 1993.
VII. PubChem, online consultation, February 2014: http://pubchem.ncbi.nlm.nih.gov/summary/summary.cgi?cid=3348&loc=ec_rcs#x332