CLAIMS

1. A granule intended to float at the surface of the stomach liquid, of the core-shell type comprising a solid core on the one hand, on which is deposited a mixture formed with the active ingredient and an alkaline agent which may generate a release of gas in the presence of said stomach liquid, characterized in that said active ingredient, the absorption site of which is located at a very high level in the digestive tract is selected from the group formed by furosemide, tiapride, alfuzosin, captopril, GHB, metformin, nifedipine, buprznorphine, modafinil, methadone, nalbuphine, tetrahydrocannabinol, an intermediate layer being provided, separating said alkaline agent and said active ingredients when the latter is an acid compound.

2. The granule according to claim 1, characterized in that said alkaline agent is selected from the group formed by carbonates and bicarbonates, and is notably selected from the group formed by sodium bicarbonate, sodium carbonate, sodium glycine carbonate, potassium bicarbonate, magnesium carbonate and calcium carbonate.

3. The granule according to one of claims 1 or 2, characterized in that said solid core is selected from insoluble carriers, and that more particularly from the group formed by polyols, gums, silica derivatives, calcium or potassium derivatives, mineral compounds such as dicalcium or tricalcium phosphates, saccharose, cellulose derivatives, notably microcrystalline cellulose, ethyl cellulose or hydroxypropylmethylcellulose, starch, gluconates, silicates, sugar crystals or mixtures thereof.

4. The granule according to any of claims 1 to 3, characterized in that said solid core supporting said active ingredients consists of said alkaline agent.

5. The granule according to any of claims 1 to 4, characterized in that it further comprises a binder selected from the group formed by maltodextrins, starch, saccharose, polyols, gum arabic, polyvinylpyrrolidone, cellulose, hydroxypropylmethylcellulose, hydroxypropylcellulose, shellac, or mixtures thereof.

6. The granule according to any of claims 1 to 5, characterized in that it is coated with a coating agent notably selected from the group consisting of shellac, polyvinylpyrrolidone, polyethyleneglycol, cellulose derivatives such as HPMC or HPC, saccharose, fatty glycerides, or mixtures thereof.

7. The granule according to any of claims 1 to 6, characterized in that it comprises from 0.5% to 60% by weight of active ingredient based on the total weight of the granule.

8. The granule according to any of claims 1 to 7, characterized in that it comprises from 15% to 70% by weight of an alkaline agent based on the total weight of the granule.

9. The granule according to any of claims 1 to 7, characterized in that the solid core represents 20% to 80% by weight based on the total weight of the granule.

10. The granule according to any of claims 1 to 9, characterized in that its diameter is less than 3 mm.

11. A method for preparing a granule according to any of claims 1 to 10, of the core-shell type comprising a solid core on the one hand on which is deposited a mixture formed with the active ingredients and with an alkaline agent which may generate a release of gas in the presence of said stomach liquid characterized in that it comprises a step for applying said mixture by powdering on said solid core.

CLAIMS

1. A granule intended to float at the surface of the stomach liquid, having a diameter of less than 3 mm, presenting a core-shell type consisting of:

- a solid core,
- an internal layer surrounding said core, said layer comprising a mixture formed with i) the active ingredient, the absorption site of which is located very high in the digestive tract, said active ingredient being selected from the group formed by furosemide, tiapride, alfuzosin, captopril, GHB, metformin, nifedipine, buprznorphine, modafinil, methadone, nalbuphine, tetrahydrocannabinol, and ii) an alkaline agent generating a release of gas in the presence of said stomach liquid, an intermediate layer being provided, separating said alkaline agent and said active ingredient when the latter is an acid compound,
- an external coating layer,

wherein the alkaline agent which may constitute the solid core is selected from the group consisting of carbonates and bicarbonates.

2. Granule according to claim 1, wherein the alkaline agent is selected from the group consisting of sodium bicarbonate, sodium carbonate, sodium glycine carbonate, potassium bicarbonate, magnesium carbonate and calcium carbonate.

3. Granule according to claim 1 or 2, wherein the solid core is selected from insoluble supports selected from the group consisting of polyols, gums, silicas, compounds of calcium or potassium, mineral compounds selected from dicalcium phosphates and tricalcium phosphates, saccharose, cellulose derivatives selected from monocrystalline cellulose, ethyl cellulose and

hydroxy propyl methyl cellulose, starch, gluconates, silicates, sugar crystals, and admixtures thereof.

4. Granule according to any one of claims 1 to 3, wherein it comprises a binder selected from the group consisting of maltodextrins, starch, saccharose, gum arabic, polyvinyl pyrrolidone, hydroxy propyl methyl cellulose, shellac, hydroxy propyl cellulose, cellulose, polyols, or admixtures thereof.

5. Granule according to any one of claims 1 to 4, wherein it is coated by a coating agent which is selected from the group consisting of shellac, polyvinyl pyrrolidone, polyethylene glycol, cellulose derivatives selected from HPMC or HPC, saccharose, fatty acid glycerides and admixtures thereof.

6. Granule according to any one of claims 1 to 5, wherein it comprises from 0.5% to 60% by weight of active ingredient in relation to the total weight of the granule.

7. Granule according to any one of claims 1 to 6, wherein it comprises from 15% to 70% by weight of alkaline agent in relation to the total weight of the granule.

8. Granule according to any one of claims 1 to 7, wherein the solid core represents from 20% to 80% by weight in relation to the total weight of the granule.

9. Method for preparing a granule according to any one of claims 1 to 8 where the alkaline agent does not constitute the solid core, wherein it comprises a step of application, by powdering the active ingredient, to the solid core and a step of adding the alkaline agent.

10. Method for preparing a granule according to any one of claims 1 to 8 where the alkaline agent constitutes the solid core, wherein it comprises a step of application, by powdering the active ingredient, to the alkaline agent constituting the solid core, on which the active ingredient is supported.

11. A granule prepared by the process of claim 9.

12. A granule prepared by the process of claim 10.