Patent claims:

1. A microbioreactor module comprising a cultivation container (1), a mounting tube (2), an asymmetrical plug (3), and a sheathing (7), the microbioreactor module being characterized in that

    - the cultivation container (1) has an outer shell of a semi-permeable membrane material enclosing a biocompatible carrier material or scaffold,

    - the mounting tube (2) is attached to the cultivation container and encloses a discharge and supply line which allows samples to be taken and cells or bioactive molecules and nutrients to be supplied to the cultivation container,

    - the asymmetrical plug (3) has an asymmetrical length, projects into the interior of the microbioreactor module, fixes the mounting tube (2) in an opening, and seals the microbioreactor module to the outside by contact with the sheathing (7), and opens or closes openings in the wall of the sheathing depending on the positioning.

2. The microbioreactor module according to claim 1, characterized in that the outer shell of the cultivation container (1) consists of a bag of a semi-permeable organic or inorganic membrane material with an exclusion size of 1 - 50 kDa, for example a dialysis hose material.

3. The microbioreactor module according to one of claims 1 or 2, characterized in that the carrier material in the cultivation container (1) consists of natural or synthetic polymers or inorganic materials or a combination thereof, or a corresponding scaffold, wherein suitable carrier materials can be for example collagen, elastin, fibrin, alginate, silk, glycoaminoglucan, hyaluronic acid, chitosan, cellulose, fucoidan or silaffin.

4. The microbioreactor module according to one of claims 1 to 3, characterized in that the mounting tube (2), the discharge and supply line (4) and the sheathing (7) consist of an elastic, gas-permeable material, for example silicone or a comparable plastic, and that the sheathing comprises a plurality of through-flow openings (8) which can be closed by flaps (9).

5. The microbioreactor module according to one of claims 1 to 4, characterized in that the carrier material or the scaffold is coated with stem cells, for example mesenchymal stem cells.

6. The microbioreactor module according to one of claims 1 to 5, characterized in that the cultivation container contains a gas-permeable air bag.

7. The multimicrobioreactor consisting of one or more microbioreactor modules according to one of claims 1-6, which are arranged in parallel and introduced into a common cultivation room, wherein the growth conditions in the individual microbioreactor modules can be individually adapted by the composition and supply in the cultivation container, as well as the length and associated immersion depth of the modules.

8. The multimicrobioreactor according to claim 7, characterized in that one or more microbioreactor modules are fixed in a common plastic cover (11), in which connection possibilities for measuring probes (18) and optionally pressure relief valves (23) are also provided.

9. The multimicrobioreactor according to one of claims 7 or 8, characterized in that the common cultivation room is a reactor vessel (12) filled with medium, in which homogenization is ensured by a pump element (13) operated by compressed air in combination with a flow distributor (14).

10. The multimicrobioreactor according to one of claims 7 to 9, characterized in that the common cultivation room is a reactor vessel filled with medium, in which homogenization is achieved by a bubble generator (19) by passing pulsating compressed air through a plate opened upwards by way of holes arranged in a grid-like manner.

11. The multimicrobioreactor according to one of claims 7 to 10, characterized in that an upwardly and downwardly opened inner reactor shell (21) is fixed in the interior of the reactor vessel (12) by means of mounting brackets (22) and a flow circulation in the medium is thereby achieved.