SUMMARY

The following description relates to a regenerative cell extraction unit and system which automatically perform all processes from collecting fat tissue to extracting stem cells from the fat tissue in a sealed state and are structured to extract the stem cells with increased efficiency.

In one general aspect, there is provided a regenerative cell extraction unit including: a main container which is rotated by a torque applied from an external source and includes a housing portion accommodating a substance that is to be separated; a hollow first discharge pipe which is inserted into the main container such that an end portion of the first discharge pipe is disposed in a lower part of the main container and that the other end portion of the first discharge pipe is disposed outside the main container; and a suction device which is connected to the first discharge pipe so as to suck and discharge components, which are placed in a lower end portion of the main container after being centrifuged by the rotation of the main container, from the main container through the first discharge pipe; and a plurality of protruding housing portions which bulge outwards along a radius direction with respect to a center of rotation of the main container to accommodate relatively heavy components among components separated from the substance and are arranged at intervals of a predetermined angle along a circumferential direction of the protruding housing portions.

According to the present ~~invention~~disclosure, a lower part of the housing portion narrows toward a lower end of the housing portion, and a concave groove is formed in the lower end of the housing portion.

According to the present ~~invention~~disclosure, the regenerative cell extraction unit further includes: a collection member which is disposed in the housing portion of the main container and includes a concave collector portion; a plurality of guide members which are formed on the collection

member, are positioned to interfere with components which are rotated and pressed toward an inner surface of a wall of the main container, and guide the rotating components to the collector portion of the collection member; a hollow second discharge pipe which is inserted into the main container, has an end portion disposed above the collector portion of the collection member, and has the other end portion disposed outside the main container; and a second pump which is connected to the second discharge pipe, provides a suction force to the second discharge pipe, and discharges the components collected on the collection member to the outside through the second discharge pipe.

According to the present ~~invention~~disclosure, the second discharge pipe is fitted into a through hole formed in an upper part of the main container, and the regenerative cell extraction unit further includes a medium member which enables the main container to rotate relative to the second discharge pipe while sealing a gap between an outer circumferential surface of the second discharge pipe and an inner circumferential surface of the through hole.

According to the present ~~invention~~disclosure, a ring-shaped flange is formed along the outer circumferential surface of the second discharge pipe, the medium member is ring-shaped, is made of a rubber material which is compressible and elastic, and is compressed between a lower surface of the flange and an upper surface of the main container in a state where the second discharge pipe is inserted into the main container, and a ring-shaped contact member having a lower coefficient of friction than rubber is formed on an upper surface of the medium member and is attached closely to the flange, wherein while being compressed between the main container and the flange, the medium member and the contact member rotate in accordance with the rotation of the main container and seal the gap between the inner circumferential surface of the through hole formed in the upper part of the main and the outer circumferential surface of the second discharge pipe.