Contains a drug-derived adipose derived stem cell component Research and development of external medicines for skin regeneration

Masaaki Ii Osaka Medical University Research Support Center / Novumcella Inc.

In recent years, research on exosomes has become active in Japan and abroad. For this exosome, further research is necessary, and it is expected that new medicinal ingredients will be found in the future.
Dr. Ii et al. showed that various growth factors gene expression was observed in exosomes (skin regeneration) (Fig.1) secreted from estradiol-polymer nanoparticle-conjugated adipose derived stem cells (Fig.2) and ovariectomized mice (postmenopausal female model) was used to locate the skin regeneration.

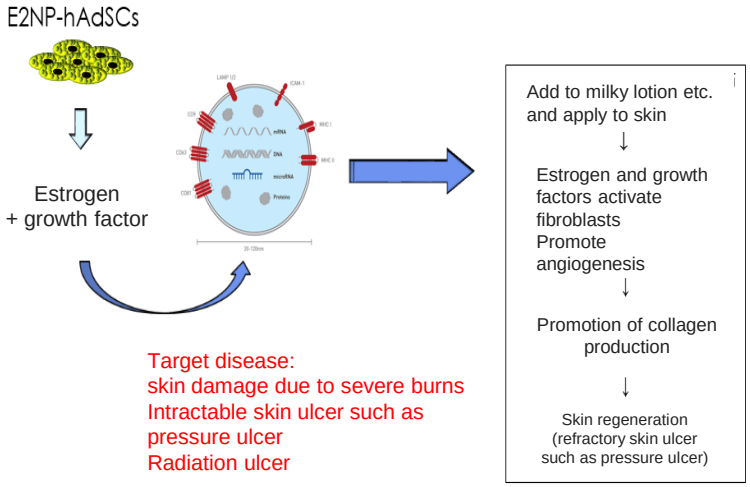

Figure 1: From Estradiol-polymer nanoparticle-conjugated adipose stem cells secreted exosome (for skin regeneration)

<Outline of results>

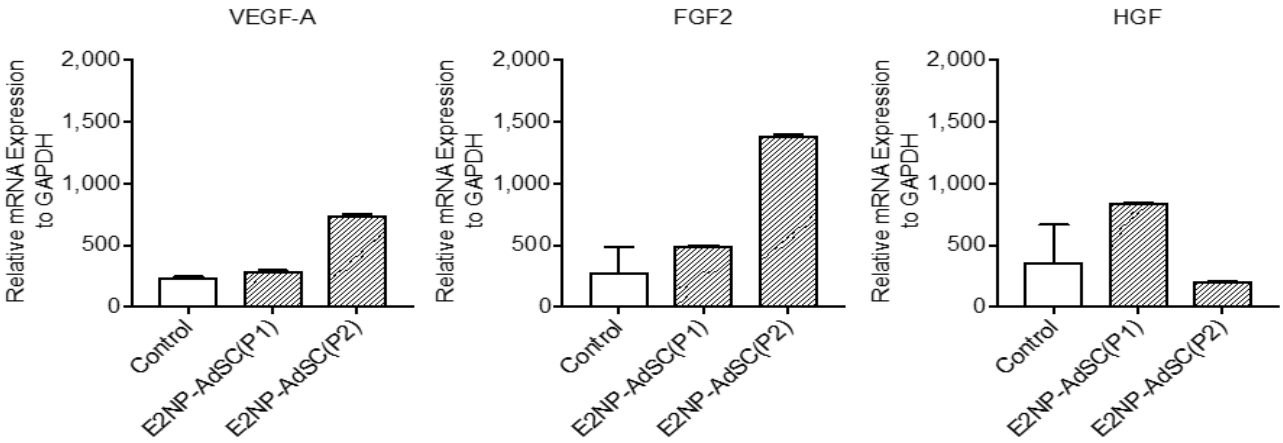

Figure 2: Gene expression of secreted estradiol-polymer nanoparticle-conjugated adipose stem cells (cultured + passaged for 4 days each)

Dr. Ii et al. showed the following results in ovariectomized DDY mice.
(>) And fibroblast proliferative effect was observed by application of 5% glycerol water containing exosome derived from simbastatin encapsulated polymer nanoparticle-conjugated adipose stem cells on the dorsal skin (Fig. 3)
Application of 5% glycerol water containing exosome derived from estradiol-encapsulated polymeric nanoparticle-conjugated adipose derived stem cells showed hypertrophy (<) and fibroblast proliferative effect (Fig. 3)

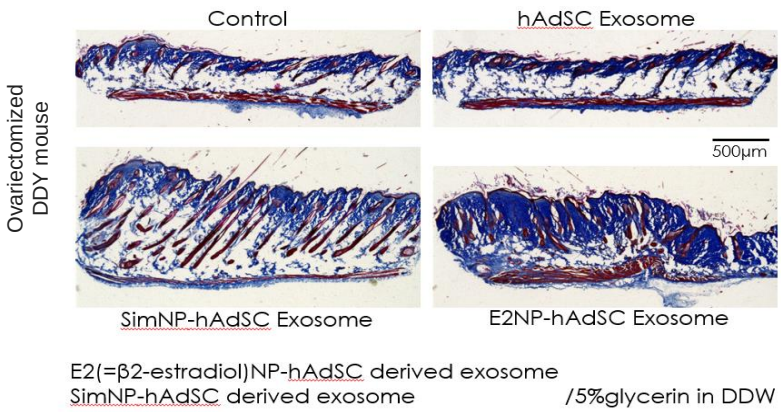

Figure 3: Skin regeneration effect by exosomes derived from E2NP- and SimNP-fat stem cells (after 4 weeks)