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## Metabolite stem cell for skin rejuvenation

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Skin aging is natural process where renewal of skin cells and collagen production slows down, as well as the weakening of internal support structure and natural protective layer of skin. Several anti-aging therapies are widely used in dealing with aging. Stem cell metabolites are rich in growth factors such as cytokines IL-10, IL-4, EGF, GM-CSF and TGF- $\beta$ . These cytokines can penetrate skin layer to stimulate the growth of new cells and increase nutrition, accelerate skin metabolism to inhibit premature aging, stimulate skin to produce new proteins, collagen and elastic fibers, also reduce black pigments. Previous research focuses on *in vitro* and animal study of stem cell metabolites derived from placenta for skin regeneration. This study is an advanced stage by focusing on clinical trial in 30 patients who met the inclusion and exclusion criteria to be applied with stem cell metabolites on their face. Subjects were examined their face conditions by using janus skin analyzer to see markers on their skin and applied stem cell metabolites in their face twice per day, at day and night with single-use doses of three pumping. Evaluation was carried out before and after application of stem cell metabolites using janus in six weeks. The results of janus examination evaluated were spot, pore, roughness, wrinkle, UV acne, UV spot and UV moisture. The percentage of spot, pore, roughness, wrinkle, UV acne and UV spots are decreased, while the percentage of UV moisture is increased in almost all subjects who were evaluated for six weeks. In qualitative, almost 90% subjects are satisfied with the results of the application of stem cell metabolites. The subjects felt that facial wrinkles were reduced, the face was smoother and supple and pigmentation was reduced. It can be concluded that stem cell metabolites formula are effective and efficient in skin regeneration.

### Biography

Purwati has completed her General Practitioner in Internal Medicine from Universitas Airlangga. She has also completed her Doctoral program from Universitas Airlangga. Her interest is in stem cell field. She has worked as a Secretary of Stem Cell Laboratory of Universitas Airlangga and also as a Secretary of Surabaya Regenerative Medicine Centre. She is currently the Chairman of Stem Cell Research and Development Center Universitas Airlangga, Surabaya, Indonesia. She has 60 publication in journals, papers.

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