

RRS[®] HA Injectable medical device increases transcription of collagen type 1 and elastin genes in human skin fibroblast in vitro.

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Introduction:

RRS[®] HA INJECTABLE is an innovative skin booster, Medical device Class III. In order to clarify the molecular mechanisms, two in vitro assays were performed.

Objective:

RRS[®] HA INJECTABLE is an innovative skin booster, Medical device Class III. In order to clarify the molecular mechanisms, two in vitro assays were performed.

RRS[®] HA INJECTABLE is able to increase collagen type 1 transcript* 10 times and elastin transcript** 14 times in human fibroblast following an incubation

period of 48 hours at a dose of 1 mg/ml.

* Collagen type 1 is the main protein constituent of skin dermis and is responsible for skin thickness.

It is mainly synthesized by dermal fibroblast.

** Elastin in the other hand is the key protein of skin elastic fibres and therefore skin elasticity.

Conclusion:

The presented method gives a reliable evidence that RRS[®] HA INJECTABLE is able to strongly stimulate human fibroblasts to produce collagen and tropoelastin in vitro

RESULTS

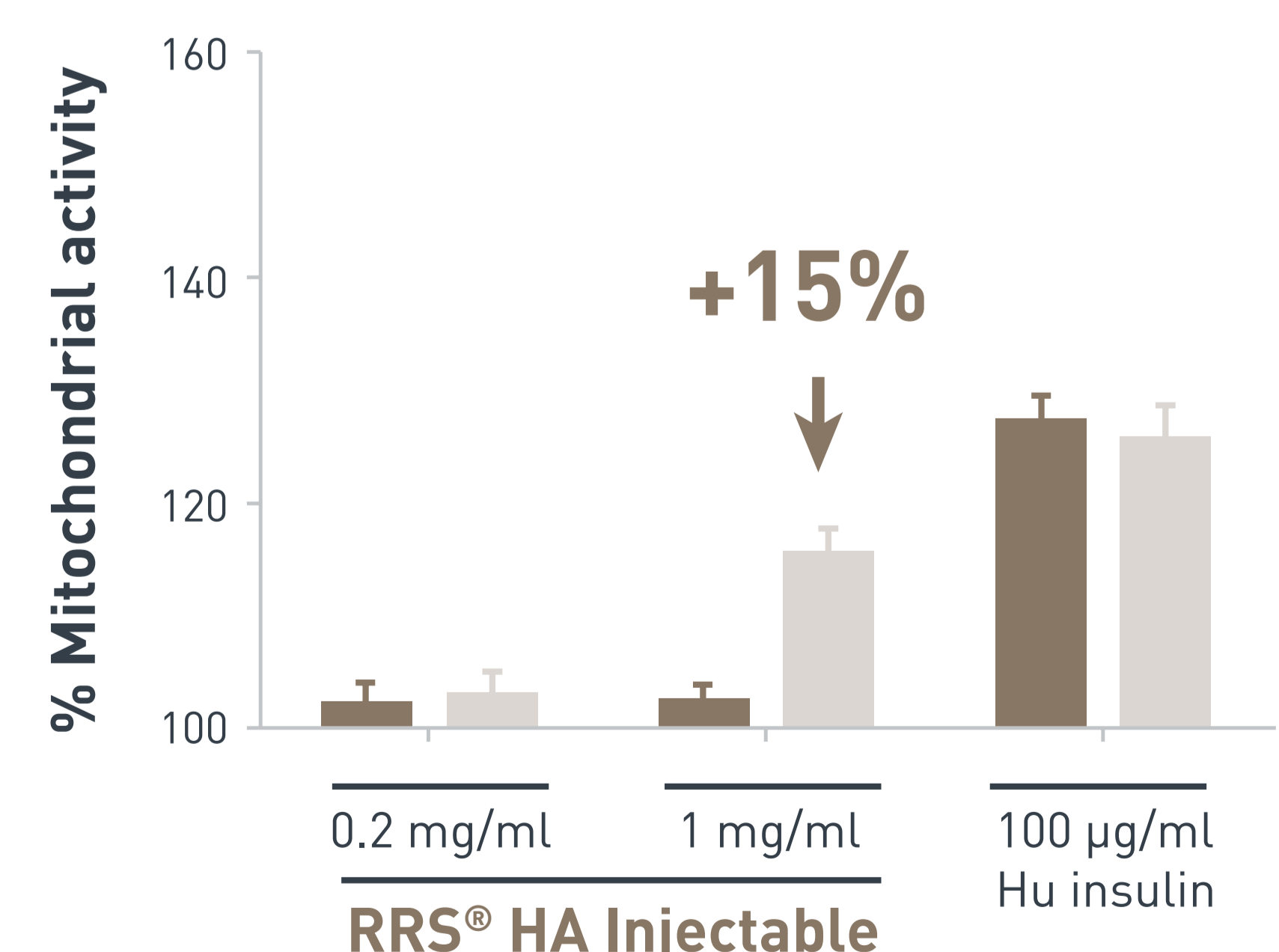
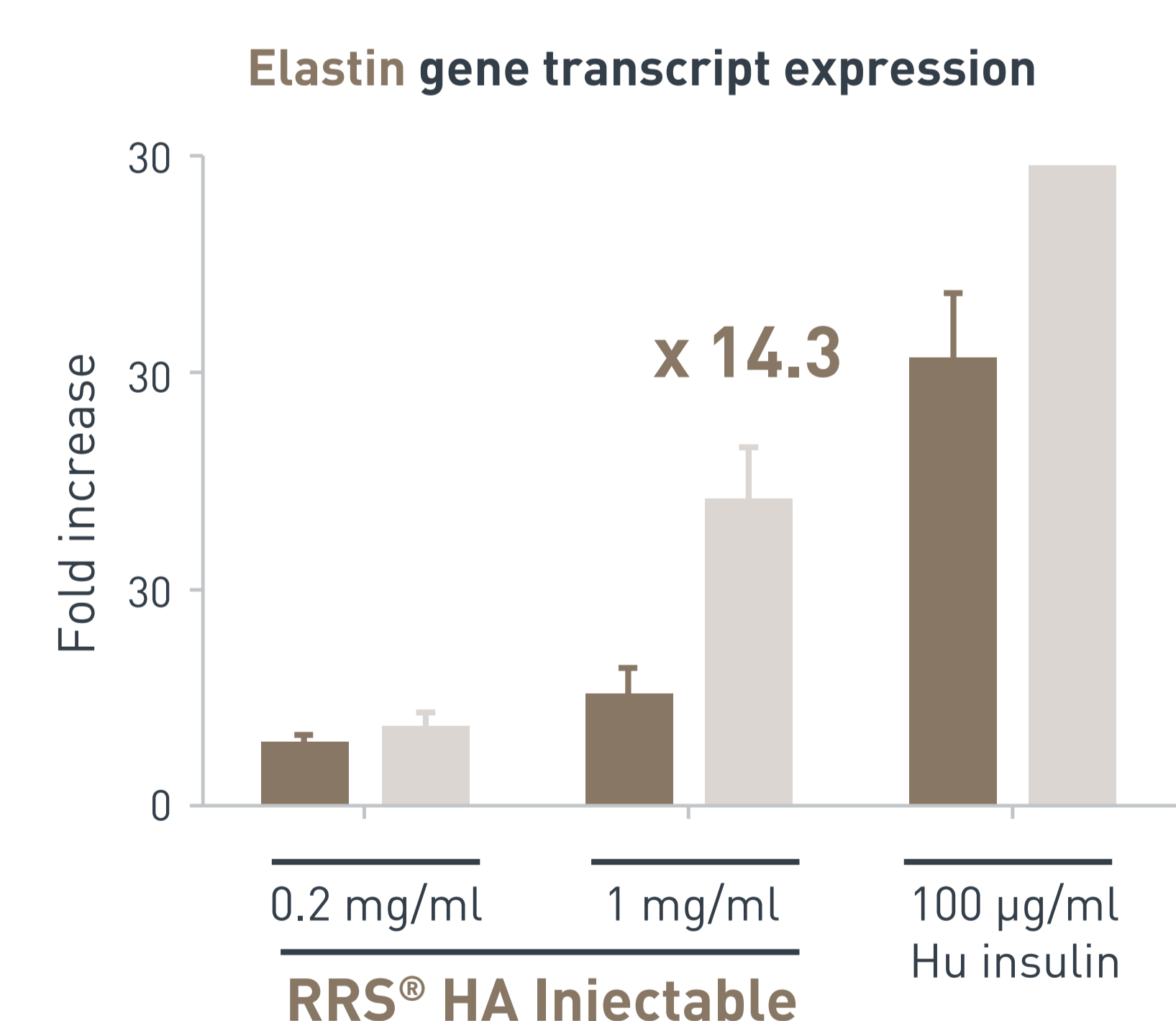
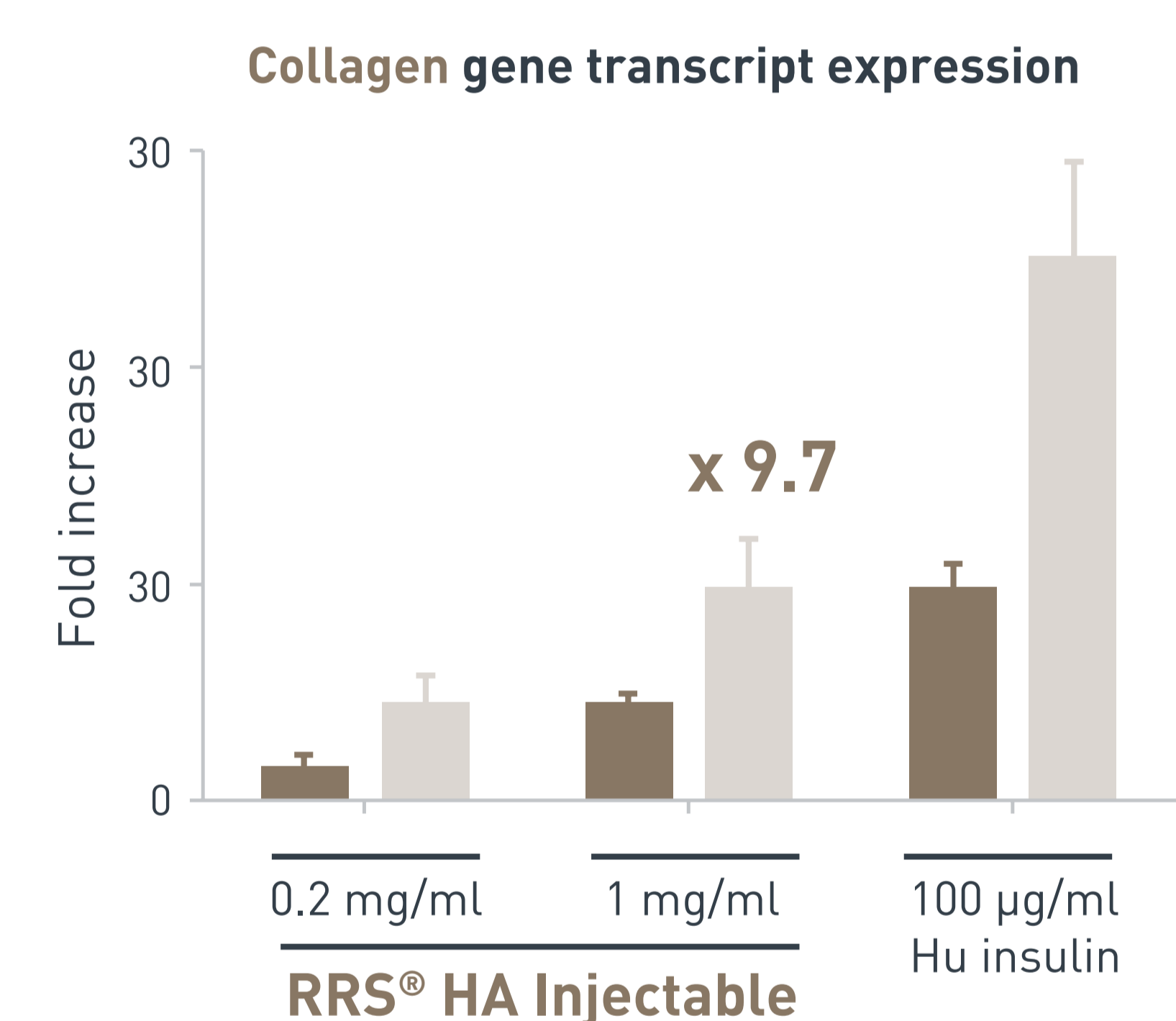
RRS[®] HA INJECTABLE is able to increase mitochondrial human fibroblast following an incubation time of 48 hours at a dose of 1 mg/ml.

In vitro study following RRS[®] HA injectable

Cells	Human fibroblast
Culture plate	24 wells plate
[cellular]	10000 c/well
Culture Medium	D-MEM + 10% FBS
Cell synchronization	6 hours starvation
Cell activation	Serum free medium +/- product dilutions
Collagen & Elastin synthesis	RNAm extraction followed by RT-PCR and Q-PCR
Result expression	1) $\Delta CT = CT(\text{target}) - CT(\text{normalizer})$; 2) Fold change = $2^{-\Delta\Delta CT}$
Replicates	3

In vitro study following RRS[®] HA injectable

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Culture plate	24 wells plate
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Culture Medium	D-MEM + 10% FBS
Cell synchronization	6 hours starvation
Cell activation	Serum free medium +/- product dilutions
Proliferation assay	MTT assay
Result expression	% cell viability = $[\text{OD}(500\text{nm}-690\text{nm}) \text{ tes product} / \text{OD}(500\text{nm}-690\text{nm}) \text{ negative control}] \times 100$
Replicates	3



Wang Y, Lauer ME, Anand S, Mack JA, Maytin EV. Hyaluronan synthase 2 protects skin fibroblasts against apoptosis induced by environmental stress. J Biol Chem. 2014 Nov 14;289(46):32253-65.

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