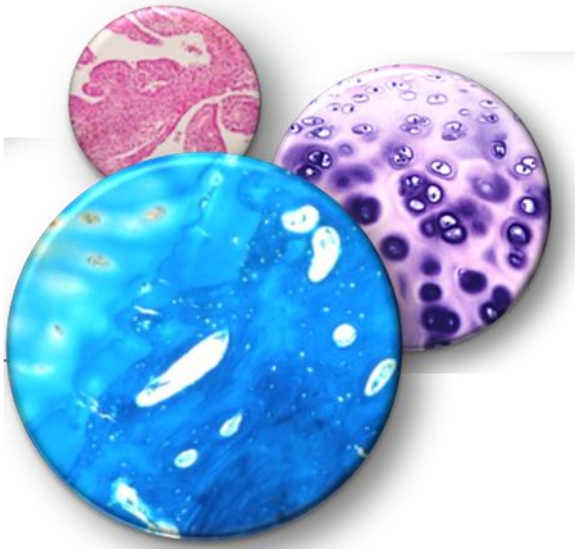
Significant reduction of the Serum Levels of a Specific Biomarker of Cartilage Degradation (Coll2-1) following Viscosupplementation Compared to saline solution in patients with Knee Osteoarthritis: the EPIKART Study



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The EPIKART study

- A 6-month prospective, randomized, double blind, controlled study
- A single injection of KARTILAGE®Cross or saline solution

KARTILAGE®Cross
- 2.2 ml (16 mg HA/ml)
- Reticulated
- Biofermentation
- Mannitol (35 mg/g of gel)

Inclusion criteria

- Men or women aged between 45 and 80 years old
- With symptomatic femoro-tibial OA (ACR criteria)
- Lack of efficacy of NSAIDS or Paracetamol
- Mean global pain during the last 24 h VAS > 40 mm
- K&L II or III

OUTCOMES

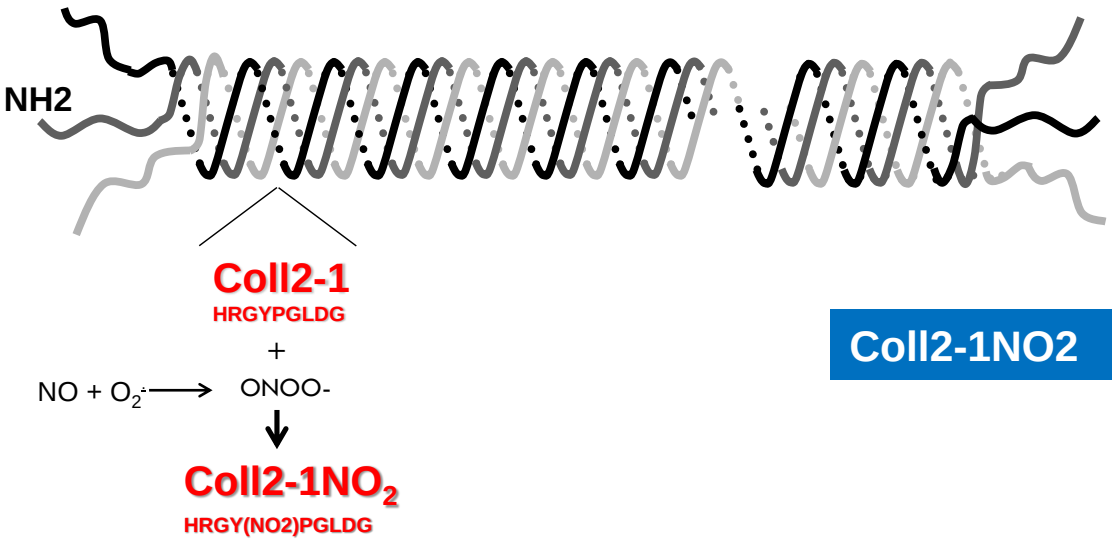
- ***Primary outcome:***

The variation of Coll2-1 in serum between inclusion visit (D-10) and D90(3 months after injection) expressed as the % of patients with a Coll2-1 variation over 10 nmol/l (Δ D-10 – D90)

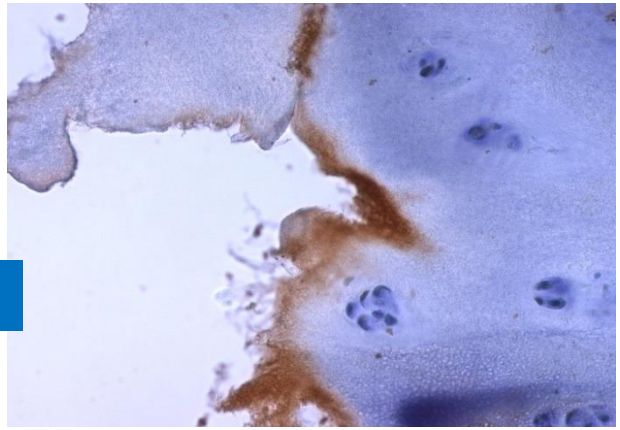
- ***Secondary outcomes:***

- Lequesne Index and pain (VAS) variation
- NSAIDS and paracetamol consumption
- Global patient assessment
- *OARSI-OMERACT responders*
- *Other biomarkers variation: Coll2-1NO2, myeloperoxidase, usCRP*

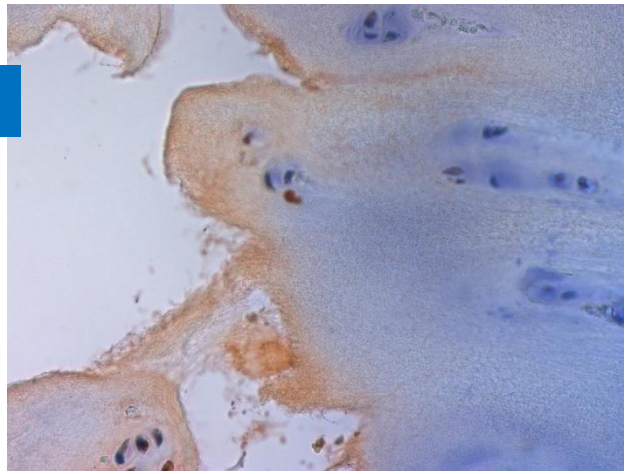
Coll2-1 and Coll2-1NO2: two cartilage specific biomarkers



Coll2-1NO2



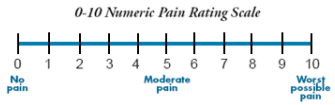
Coll2-1



- Specific of degradated cartilage
- Measure cartilage catabolism

EPIKART : Study design

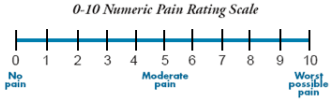
Lequesne Index
Global patient assessment



Kartilage® Cross

Safety

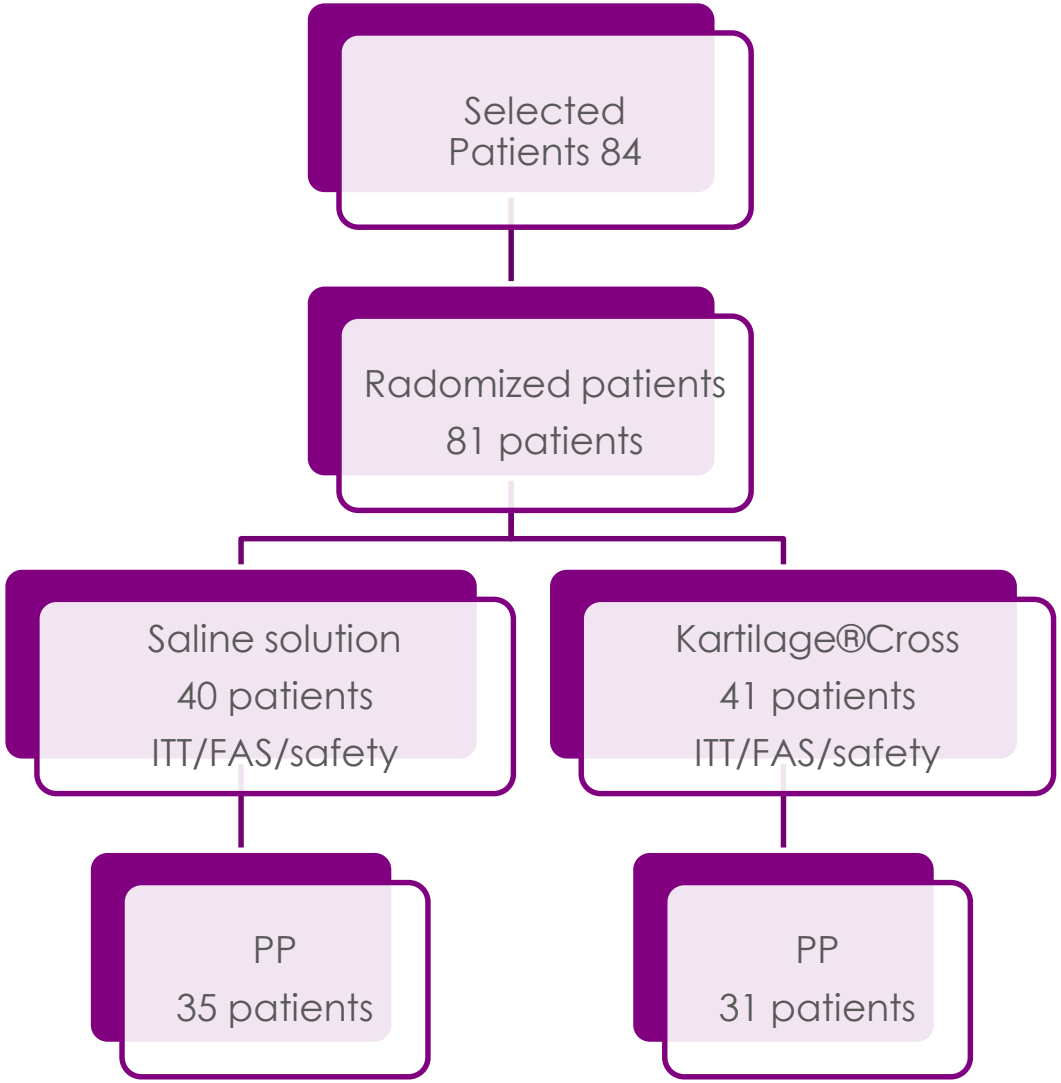
Lequesne Index
Global patient assessment
Safety



D-10 D0 D30 D90 D180

sColl2-1, sColl2-1NO2, MPO, usCRP

Flow Chart


Selected
Patients 84
Radomized patients
81 patients
Saline solution
40 patients
ITT/FAS/safety
Kartilage®Cross
41 patients
ITT/FAS/safety
PP
35 patients
PP
31 patients

Population

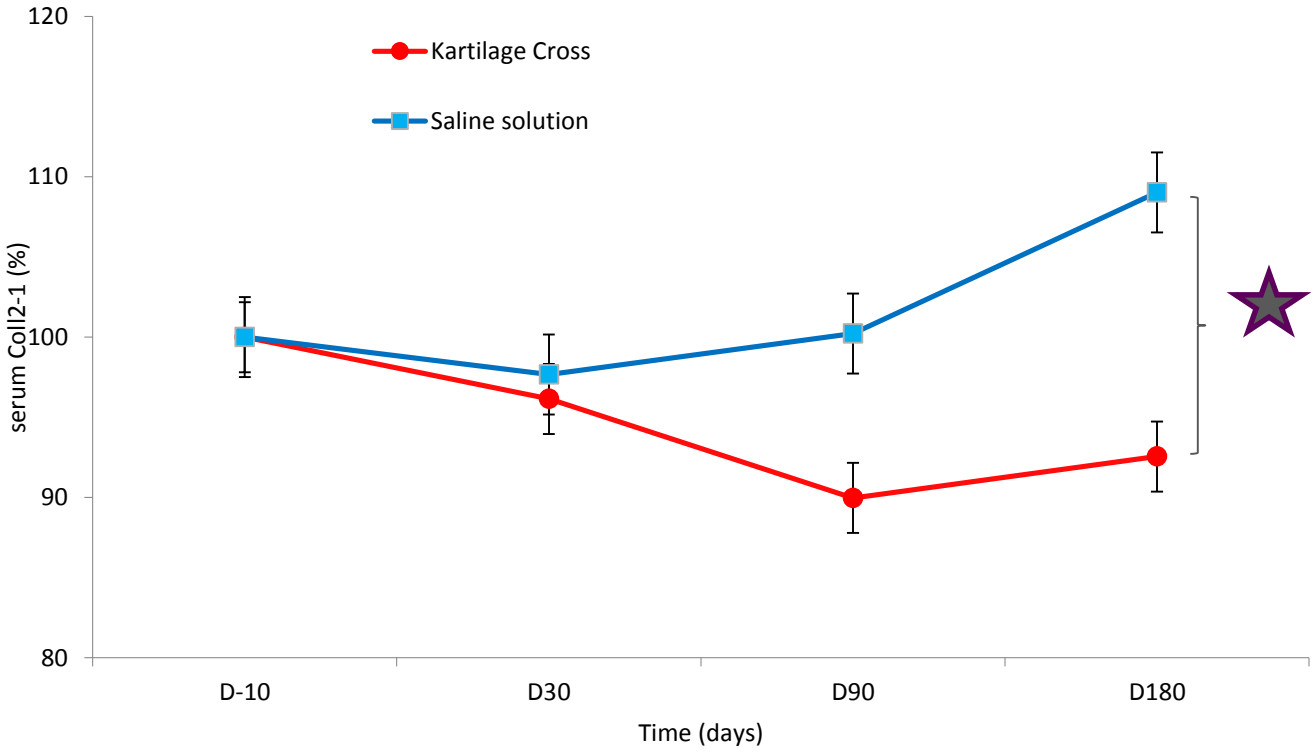
Characteristics of the FAS population (N=81)

	Kartilage®Cross N=40	Saline solution N=41	P value
Age (years)	66.9 ± 10.4	63.0 ± 8.9	0.07
Sex - Women - Men	 62.5 % 37.5 %	 75.6 % 24.4 %	 0.20
BMI (kg/m^2)	29.0 ± 7.4	30.8 ± 7.2	0.24
History (years)	7.6 ± 8	5.9 ± 5.3	0.26
Pain intensity	65.7 ±11.6	66.4 ±10.6	0.77

Kartilage®Cross decreased Coll2-1in the FAS population

	Kartilage®Cross N=40 at D-10 N=37 at D90	Saline solution N=41 at D-10 N=35 at D90	P value
Serum Coll2-1 at D-10	840.3 ± 375.8 (N=40)	766.1 ± 359.2 (N=41)	0.3663
Serum Coll2-1 at D90	745.4 ± 343.5 (N=37)	782.3 ± 233.7 (N=35)	0.5975
Adjustment on basal value	**-80.2 ± 44.1**	**-14.6 ± 45.3**	**0.0030**
Reduction of at least 10 nmol/l	**56.8 %**	**28.6 %**	**0.0158**

Coll2-1 variation with time



Secondary Outcomes

- No significant effect on Pain intensity
- No significant effect on Lesquesne index
- No significant change in OMERACT-OARSI responders
- No significant modification of other biomarkers

Conclusions

- KARTILAGE®Cross induced a significant reduction of cartilage catabolism 90 days after treatment.

  → Mechanical effect?

  → Biological activity?

- Coll2-1 is a useful tool for objectively evaluate viscosupplementation effect
  → sensitive to metabolic change occuring in a single joint.

bcru Team

Bone and Cartilage Research Unit

Thank you for your attention !

International collaborations:

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